

THE UNIVERSITY OF CHICAGO RECORD

May 3, 1982

ISSN 0362-4706

An Official Publication

Volume XVI, Number 2

CONTENTS

67 REPORT OF THE COMMISSION ON GRADUATE EDUCATION

THE UNIVERSITY OF CHICAGO
FOUNDED BY JOHN D. ROCKEFELLER

PRESIDENT'S MEMORANDUM ON THE REPORT OF THE COMMISSION ON GRADUATE EDUCATION

To: The Faculty of The University of Chicago
From: Hanna H. Gray, President

April 12, 1982

The Commission on Graduate Education was appointed two years ago in order to review the state of graduate education in the arts and sciences at The University of Chicago and to recommend our best directions for the future.

I am enormously grateful to the members of the Commission for the thoughtful and comprehensive report which they are now presenting. The Commission has fulfilled its charge with distinction, rigor, and imagination. Its work has provided an exhaustive overview of graduate education at this University against the background of national trends and in the context of our own traditions, strengths, and opportunities.

The Commission's report gives us a significant foundation for thinking about and for reviewing our graduate programs in the period ahead. Its emphasis on the purposes of graduate training at this University, on the importance of balancing specialization with breadth, on the curricular changes that we should be contemplating, and on the areas we should seek to strengthen defines the central agenda for the faculty in its deliberations.

I shall ask the Deans to initiate discussion within their respective Divisions by taking two steps: first, to ask each Department and degree committee to meet this spring for preliminary consideration of the report; second, to ask that each department and committee transmit a response by the beginning of the fall quarter. During the fall quarter, I expect that discussions will take place also in divisional faculty meetings. In addition, we will arrange one or two larger public forums devoted to the essential recommendations of the Commission and to the responses which have emerged.

The Commission has made a number of recommendations which we can begin to pursue at once:

- 1) For the proposal to establish a system of *ad hoc* visiting committees, composed both of outside and University members, the Provost and I will have a plan to present by the beginning of the autumn quarter.
- 2) I shall ask the Provost to appoint a committee to

consider the question of a program in computer science.

- 3) I shall ask the Provost also to appoint a committee to consider means of enabling graduate students to take greater advantage of the educational opportunities offered by the professional schools and to consider possible joint degree programs.
- 4) Together with the Dean of the Division of the Humanities and the Dean of the College, we shall discuss how to pursue the questions related to basic language instruction and the reconsideration of a Language Institute.
- 5) We must give thought to dealing with the misleading and negative reputation of our neighborhood. I shall ask the Vice-President for University News and Community Affairs to present proposals for means of providing more accurate information about Hyde Park for prospective students and faculty.
- 6) The informative surveys contained in the report demonstrate the value of acquiring and maintaining more statistical data on our students and applicants. I shall ask the Vice-President and Dean of Students to present a plan for this purpose.
- 7) I shall ask the Office of Career Counseling and Placement to consider what steps may be proposed to provide fuller counseling and assistance to graduate students in relation to non-academic careers.
- 8) I have asked the appropriate officers of the University to consider and explore alternatives to existing loan arrangements against the possibility of current federal loan programs being modified in the future.

In departmental meetings this spring, I hope that the faculty will begin to evaluate and to discuss the implications of the report for their individual programs. Each department should consider, in light of its particular needs, the Commission's recommendation concerning the M.A. and current course requirements for the graduate degrees. The departments should consider

also the questions related to financial aid policy and recruitment as these affect their areas. A University committee will be appointed next year to study financial aid policy.

The discussion within departments and divisions and the evaluations to be provided by *ad hoc* committees will help us to give attention to the problems and opportunities outlined in the report. Faculty in the Divisions of the Humanities and Social Sciences particularly will want also to give special consideration to the recommendation that a "Research Institute" structure be

established in these areas. A committee to examine that proposal will be appointed later.

The University is indebted to the Commission on Graduate Education and to its chairman, Keith Baker, for the time and care which they have contributed to the most complex and significant issues which confront a graduate university today. I look forward to the process of discussions and of planning which will enable us to give shape to the University's leadership as a center of advanced learning.

Members of the Commission on Graduate Education

Keith M. Baker (Chairman), Professor in the Department of History, the Committee on the Conceptual Foundations of Science, and the College

Gary S. Becker, University Professor in the Department of Economics

Wayne C. Booth, the George Pullman Distinguished Service Professor in the Department of English, the Committee on the Analysis of Ideas and Methods, and the College

James W. Cronin, University Professor in the Department of Physics, the Enrico Fermi Institute, and the College

Dr. Godfrey S. Getz, Professor in the Departments of Pathology and Biochemistry and the College

Irving Kaplansky, the George Herbert Mead Distinguished Service Professor in the Department of Mathematics and the College

Francoise Meltzer, Associate Professor in the Department of Romance Languages and Literatures, the Committee on Comparative Studies in Literature, and the College

Ralph W. Nicholas, Professor and Chairman of the Department of Anthropology and Professor of Social Sciences in the College

Stuart A. Rice, the Frank P. Hixon Distinguished Service Professor in the Departments of Chemistry and Biophysics and Theoretical Biology, the James Franck Institute, and the College and Dean of the Division of Physical Sciences

Susanne Rudolph, Professor in the Department of Political Science and the College

Jonathan Z. Smith, the William Benton Professor of Religion and Human Sciences and Dean of the College and Professor in the Department of New Testament and Early Christian Literature and the Committee on the Study of the Ancient Mediterranean World

Stephen M. Stigler, Professor in the Department of Statistics and the College

Teresa Sullivan, formerly Assistant Professor in the Department of Sociology (now Associate Professor of Sociology, University of Texas)

Edwin M. Taylor, Professor in the Departments of Biology and Biophysics and Theoretical Biology and the College

Stephen Toulmin, Professor in the Committee on Social Thought, the Department of Philosophy, and the Divinity School

Harold S. Wechsler, Assistant Professor in the Department of Education and the College

James B. White, Professor in the Law School, the Committee on the Study of the Ancient Mediterranean World, and the College

Ex officio Members

F. Gregory Campbell, Secretary of the Board of Trustees

Jonathan F. Fanton, Vice-President for Planning

TABLE OF CONTENTS

Chapter 1: Introduction		C. Financial Aid	130
A. The Commission's Work	72	Goals of Financial Aid Policy	130
B. Summary of Conclusions and Recommendations	72	Patterns of Financial Aid	131
C. Responding to this Report	75	Current Financial Aid Policies Considered	133
		Recommendations regarding Financial Aid Policy	136
Chapter 2: Predicting the Future, Projecting from the Past		D. A Note on Foreign Students	136
A. The National Context	77		
Some Projections	77	Chapter 5: The Four Divisions	
How Reliable are the Projections?	81	A. The Division of Biological Sciences	136
B. The Local Context	81	Divisional Organization	136
Recruitment	81	The Faculty	138
Employment Opportunities	84	B. The Division of Physical Sciences	140
C. Some Preliminary Conclusions	91	Graduate Student Recruitment	141
		Academic Quality	141
Chapter 3: Graduate Education at the University of Chicago		Relationship to National Facilities	142
A. The Idea of Graduate Education	95	Divisional Organization	143
B. The Ends of Graduate Education	98	Library, Teaching, and Research Facilities	144
Advancing the Research Tradition	98	Some Administrative Issues	144
Preparing College and University Teachers	100	C. The Division of Social Sciences	144
Educating for Non-Academic Careers	103	The Life and Structure of the Division	145
C. Some Further Recommendations	107	The Departments	148
Avoiding Premature Specialization	107	Faculty-Student Relations	148
Achieving Intellectual Breadth	107	D. The Division of Humanities	149
Clarifying Master's Degree Programs	108	Ethnography	150
Creating Broader M.A. Programs	108	Enrollments	150
Revising Course Requirements for the Ph.D.	108	Does the Division Get Its Due?	150
Improving the Context for Graduate Research in the Humanities and Social Sciences	108	The Scarcity of Extras	151
		The Quality of Faculty and Programs	151
Chapter 4: The Graduate Student Body		Quality of Students	154
A. Recruitment	109	Recruiting and Retaining Students	155
Applying to the University of Chicago	110	Money and Recruitment	155
Choosing a Graduate School	112	Teaching Experience, Recruitment, and Retention	156
Academic Quality of Applicants	115	Morale and Quality of Life	157
Recruitment Strategies	117	Solutions and Recommendations	158
B. Progress toward the Ph.D	121	The Multiple Goals of Graduate Education	158
Student Satisfaction with the University	122	Reformulating, Reorganizing—Warrants and Possibilities	159
Advancing toward the Degree	122	The Research Institute and the Humanities	161
Revised Tuition and Residency Requirements	126	Prospects for a Language Institute	161
A Context for Advanced Graduate Research	127	The M.A. in a "Multiple Exit" Divisional Education	162
A Graduate Student Center	128	Appointments	163

Addressing the Image of the Division	163	Departmental Responsibility	172
E. A Special Issue: Computer Science	163	Administrative Clarity	173
		Economy of Innovation	173
Chapter 6: A Research Institute Structure in the Humanities and Social Sciences		Chapter 7: Conclusion	174
A. The Case for a Research Institute	167	Index of Recommendations	175
As a Context for Advanced Graduate Work	167	Appendix A: The Reliability of Enrollment Projections	176
As a Context for Faculty Research	169		
As a Center of Intellectual Leadership	170	Appendix B: Analysis of Graduate Student Surveys	
B. Organization and Implementation	170	(Available on request from the Secretary of the Board of Trustees)	
C. Some Objections Considered	172		
Faculty Autonomy	172		

REPORT OF THE COMMISSION ON GRADUATE EDUCATION

Chapter 1: Introduction

This Commission on Graduate Education was established by President Gray in the late spring of 1980. Its charge was a broad one: to consider the present state of graduate education at the University of Chicago—and to make recommendations regarding its future shape—in the light of the University's traditional commitment to excellence in research and teaching, and of the anticipated constraints on the organization and development of higher education in the coming decades.

We have attempted to fulfill this charge as comprehensively as possible, and to do so in a way that will engage our colleagues in a continuing process of discussion and debate. A period of dramatic growth in graduate education has ended; an uncertain future lies ahead. As an institution long distinguished by its commitment to the pursuit of graduate education, this University is therefore under a particular obligation to reflect upon the nature of that activity in general, and to evaluate its own graduate programs in particular. In compiling this report, we have found ready evidence that such a process of reflection and evaluation has already begun. We present it now as a contribution to that discussion.

In her letter of appointment to members of the Commission, Mrs. Gray outlined the following charge:

The issues before the Commission are founded in the University's role as a private research university dedicated to the training of scholars and teachers in an environment which emphasizes also a strong liberal arts college and first-rate professional education, and in an institution which sets priority on broad and flexible internal relationships among faculties and programs. The national decline in numbers of Ph.D. students, the uncertainties and constrictions of the academic marketplace, the anticipated impact of demographic change, have created a sense of crisis more generally for universities like ours. We need to be looking forward to set our own course and commitment to the forms and possibilities of graduate education that will build on our sense of the future and the strengths we have and hope to have for this university...

The range of questions to be dealt with must include the assumptions underlying and the strengths and weaknesses which characterize our programs and approaches to graduate training. An examination of the policies related to financial aid for graduate students, as well as to the requirements

and length of time expected for the completion of graduate degree programs, will be crucial. So, too, will be some discussion of the kinds of purposes and professions toward which graduate programs and training may be directed. The Commission's report should be directed above all to recommending those objectives, and the policies and structures needed to bring them into being, which best express its understanding of this university's commitment to offer the highest quality of graduate training for the period that lies ahead.

Broad as it was, the Commission's charge was not without its limits. Seeking in what follows to address the state of graduate education at the University of Chicago, we have said little of undergraduate education, which now commands a larger proportion of the University's institutional resources and intellectual energies than it once did. This Commission is committed to a vision of the University which regards graduate and undergraduate education as intimately related activities, forming the common responsibility of the faculty in the arts and sciences. Our recommendations regarding graduate education must be understood within the framework of this vision.

The Commission has also said relatively little of the postgraduate education offered in the professional Schools of the University, believing a systematic consideration of that education to be beyond its mandate and powers. We do, however, wish to affirm the importance of those close relationships that now exist between the various Schools and the four Divisions; and we will offer some recommendations regarding ways in which such relationships might be extended.

Finally, despite its self-evident importance for the quality of graduate education and the future of the University as a center of advanced research, we have said little of the library. The continuing strength of its collections has been, and will certainly remain, the *sine qua non* of scholarly excellence at this University. The difficulties the University now faces in maintaining the strength of the library are enormous; its intellectual life will depend in the long run upon the decisions that are now made in response to them. This Commission has not been able to address these issues in any detail; but we await with interest the results of the evaluations now being carried out by the library administration and urge that continued investment in library resources receive a high priority in the forthcoming campaign for the arts and sciences.

Our report is a relatively long one. In this introductory chapter, we offer a brief review of the Commission's work, conclusions, and recommendations.

A. The Commission's Work

The Commission began its activities by meeting in the late Spring of 1980 with the President, the Provost (then Gale Johnson), and the Vice-President and Dean of Students. It conducted several preliminary meetings during the summer of 1980. In the Fall Quarter of 1980, it began regular weekly meetings which continued with occasional interruptions through the Spring Quarter of that academic year. In the course of these meetings, it met with the Deans of the four Divisions and with other administrative officers of the University, and considered communications received from departmental Chairs and individual faculty members. The Commission also convened a series of open meetings with graduate students. It resumed regular weekly meetings in the Fall Quarter of 1981, in order to discuss sections of its report in draft. It concluded its deliberations in the Winter Quarter, 1982.

To facilitate its work, the Commission also formed a number of internal committees. A Committee on Projections (Stephen Stigler, Gary Becker) considered various demographic projections bearing upon graduate enrollments at the national level, and analyzed the implications of trends in graduate enrollment at the University of Chicago in the past decade. Its work, some of which is explained in Appendix A, provided the basis for our conclusions in Chapter 2. A Committee on Graduate Student Surveys (Teresa Sullivan, Chair, Keith Baker, James Cronin, Godfrey Getz, Francoise Meltzer) planned the surveys described in Appendix B. The results of those surveys inform many of our conclusions regarding the needs and interests of the graduate student body in Chapter 4. A Steering Committee (Keith Baker, Chair, Wayne Booth, Stuart Rice, Edwin Taylor, Stephen Toulmin) gave consideration to questions regarding the overall shape of this report.

In addition, the Commission also created four Divisional Committees, each charged to explore the principal problems and issues relating to graduate education in one of the Divisions. The Committee on the Biological Sciences Division was formed by Ralph Nicholas (Chair), Godfrey Getz, Irving Kaplansky, and Edwin Taylor. The Committee on the Physical Sciences Division was composed of Keith Baker (Chair), James Cronin, Stuart Rice, and Teresa Sullivan. The Committee on the Humanities Division comprised Susanne Rudolph (Chair), Wayne Booth, Francoise Meltzer, and Stephen Stigler. The Committee on the Social Sciences Division was made up of James White (Chair), Keith Baker, Jonathan Smith,

and Harold Wechsler. Members of these committees met with Divisional Deans and Deans of Students, with department Chairs, with faculty members, and with graduate students. The working papers they prepared, which were discussed by the Commission during the Winter Quarter of 1981, clarified our general understanding of many of the issues treated in this report. They also form the basis of the consideration of the four Divisions in Chapter 5.

In describing our own work, we wish also to acknowledge the work we have imposed on others and to thank them for their help. We have called upon many of our faculty colleagues for particular advice. We have received information and assistance from individuals too numerous to name, in many offices throughout the University: from the Office of the President, of the Provost, of the Vice-President and Dean of Students, of the Director of Financial Planning and Budget, of the Divisional Deans and of the Divisional Deans of Students, of many departmental Chairs. Peter Ascoli, who served as our staff assistant for much of the Commission's life, was helpful in many ways: not least in keeping the minutes of our meetings. He has been followed in this task by David Epstein, who has continued a tradition of endowing a faithful record of what we said with a clarity and elegance we did not always attain. Karyl Kinsey, who has served as our principal research assistant, played an indispensable part in the administration and analysis of our graduate student surveys and in the analysis of other data presented in this report. Felix d'Allessandro, Paul Colson, Alfred Darnell, and Albertha Abernathy also provided valuable assistance. Finally, we owe a special acknowledgement of our gratitude to Esther Shelton-Smith and Sandra Peppers, who typed several drafts of this report to meet the most pressing deadlines.

B. Summary of Conclusions and Recommendations

The Commission commenced (and now concludes) its deliberations in the context of gloomy national discussions of impending decline in higher education, prompted by demographic projections that seem to offer grave consequences for the future of graduate education. It therefore undertook (i) to consider the nature of these national projections and to reflect upon their implications for an institution such as our own; (ii) to analyze the demographic trends at this University and to explore their consequences for the nature of the graduate education we now offer.

Implications of the Demographic Context

The results of these reflections are presented in Chapter 2. We conclude that, while planning for the University's future must certainly be constrained by a

prudent regard for the projected limitations on the growth of higher education in the coming decades, its fate will not be entirely determined by them. Long-term projections tend to be unreliable; and their relative indeterminacy allows considerable opportunity for the successful exercise of institutional initiative and enterprise. The University's future as a center of graduate education will depend critically upon the vision and determination of its members.

We note further in Chapter 2 (Section B) that graduate enrollments at the University of Chicago have fallen dramatically in the past decade, to a point that has serious implications for the continued quality and vigor of research and teaching in a number of fields. We recommend energetic efforts to maintain graduate enrollments at the level and quality necessary to sustain the highest level of intellectual activity. But we insist that graduate student numbers should not be maintained at the cost of student quality. It would be a profound mistake for the University to allow relatively short-term constraints to compromise its enduring tradition of academic excellence.

Chapter 2 (Section B) also offers an analysis of the employment opportunities of Ph.D. graduates at this University in the period 1970-80. We note that there has been a marked decline in the proportion entering traditional academic careers in teaching and research, particularly in the humanities and social sciences. Assuming that the University's Ph.D. graduates will face intense competition for the academic jobs available in the coming decades, and recognizing that a substantial proportion of them are already entering non-academic careers, we urge that the faculty now ask whether graduate students at this institution are being prepared as effectively as possible to pursue both academic and non-academic careers and to occupy them with distinction.

Principles, Purposes, and Goals

Concluding that the University needs to look critically at the goals and assumptions of its graduate programs, we seek to offer a basis for such consideration in Chapter 3 by analyzing the principles, purposes, and goals of graduate education at the University of Chicago as we understand them (Section A). We emphasize that the educational goals of the University have consistently expressed its overriding commitment to the traditions of scholarly research in the pursuit of new knowledge and fuller understanding, and its special preoccupation with issues that transcend the current boundaries of existing academic disciplines and departments. And we argue that the intellectual training produced by a commitment to these goals constitutes the most appropriate way of achieving the fundamental purpose of graduate education: to develop analytical in-

dependence and conceptual self-consciousness; to stimulate creative imagination and critical abilities; to inculcate habits of disciplined thinking and systematic investigation; in short, to prepare individuals to ask questions and to formulate problems across a broad range of human activities. As a result of their training in an environment that combines broad intellectual discipline with an emphasis on research as the principal activity—for it is in the practice of research that these skills and capacities are most effectively developed—our best graduates have a deserved reputation for combining professional excellence with a healthy capacity to see technical problems in their larger contexts, and to rise above the limits of "conventional wisdom."

Our view of the nature of graduate education at the University of Chicago once stated in general terms, we turn to the various ends towards which graduate education may be directed (Chapter 3, Section B). First, we discuss the end for which graduate education was first created in the United States: that of training successive generations of scholars and scientists to advance the pursuit of knowledge and understanding. We consider the vigor of the tradition of research and scholarship in this country—a tradition to which this University has made fundamental contributions—and emphasize its importance in our national life. We review the erosion of national support for graduate education that has already occurred and the possibilities of its continuation. We urge upon the administration the importance of joining with other leading universities whenever possible to insist upon the importance of preserving outstanding graduate programs as a condition of national vitality in the sustained search for new knowledge and fuller understanding, and of continuing its active efforts to secure the beneficence of corporate, foundation, and individual donors in support of this University's distinctive vision of intellectual excellence. We urge upon the faculty the importance of ensuring that the University is now making the most appropriate use of its intellectual and material resources in the realization of that vision. To this end, we recommend that each department or committee initiate an evaluation of its graduate programs, in response to the recommendations offered by this Commission. These responses would, in our view, be an appropriate point of departure for the evaluation of departments by visiting committees of review. We recommend the reinstatement of earlier procedures for the regular evaluation of departments by such visiting committees as an indispensable mechanism for the preservation of scholarly excellence. We believe that these visiting committees should be composed equally of distinguished scholars from outside the University and members of our own faculty.

Second, we consider graduate education at the

University of Chicago as directed towards the end of preparing students for teaching at the university and college level (Chapter 3, Section B). We emphasize the importance of identifying those programs and areas in which a period of academic expansion has fostered a drift towards specialization that is neither intellectually defensible nor competitively advantageous for individual students. We also underline the need to provide increased opportunities for our graduate students to obtain teaching experience under conditions that will both add to the stimulation of our graduate programs and enrich the quality of our undergraduate education, where that may seem appropriate.

Third, we address the nature of graduate education as directed towards the end of preparation for non-academic careers (Chapter 3, Section B). We conclude that the graduate education to which we aspire at the University of Chicago develops skills and capabilities, attitudes and values, that will remain a scarce resource in many domains of human activity. And we argue for a broader conception of graduate education: a conception that would combine the preparation of future academic teachers and researchers with the education of those who find intellectual challenge and satisfying fulfillment of their abilities and skills in non-academic fields of endeavor. This does not imply watering down the Ph.D. by making it a more vocational or professional qualification. Instead, it implies making the Ph.D. less exclusively a vocational degree for academic teachers and researchers, and more explicitly a training in the analytical methods of the different disciplines of a kind that is relevant either to an academic or a non-academic career.

Arguing for such a conception of graduate education, we also consider ways in which students might be encouraged to consider and prepare for appropriate non-academic career options while continuing with their education. We contend that multiple career options need to be made more visible from the very beginning of students' programs of study, through career workshops, counseling, and internships. We recommend an expanded role for the Career Counseling and Placement Office as crucial in this respect; and we also note the potential importance of certain of the activities now carried out in the Center for Continuing Education. We urge faculty to identify opportunities to create more general programs of study linking particular fields and disciplines in ways that would offer a broad preparation for academic and non-academic careers alike. And we propose closer interrelationships between the professional Schools and the graduate Divisions, of a kind that would allow greater flexibility for graduate students to acquire particular professional skills in the course of their doctoral work, and foster the creation of common professional and graduate school programs leading to a joint degree.

Reconsidering Graduate Programs and Requirements
We conclude Chapter 3 with a series of recommendations aimed at clarifying and strengthening graduate programs at the University of Chicago. We urge Divisions, departments, and committees to reassess their graduate programs with an eye to avoiding premature specialization and achieving intellectual breadth. We stress the importance of clarifying the nature of those master's degree programs that now exist and creating broader ones. We argue for the importance of sharpening our definition of the Ph.D. as a research degree and of providing an enhanced institutional intellectual context for advanced graduate research.

To achieve the latter purposes, we offer two principal recommendations. The first involves course requirements. We advocate the replacement of the current twenty-seven course requirement with an equivalent residency requirement. We also recommend that formal course work required for the Ph.D. normally not extend beyond a period equivalent to six quarters full-time residency at a normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability.

The second of these recommendations involves the context for graduate research in the Humanities and Social Sciences Divisions. We contend that graduate students challenged to pursue significant problems need a continuous and collegial context of research activity of a kind that rarely exists in the Humanities and Social Sciences Divisions outside a few fields. We regard this lack as one of the most serious weaknesses in our present organization of graduate education (and we believe that it is an important factor in lengthening the time to degree in the humanities and social sciences). We recommend the creation, in the Humanities and Social Sciences Divisions, of a clearer institutional and intellectual context for the dissertation writing and research that constitute the essence of Ph.D. training at the University of Chicago. A proposal for a Research Institute in the Humanities and Social Sciences, conceived as a means of creating a context of this kind, is considered more fully in Chapter 6.

Graduate Student Recruitment

In Chapter 4, we address a series of issues relating to the recruitment (Section A), institutional needs (Section B), and financial support (Section C) of the graduate student body. Our general conclusions regarding recruitment—which are based principally on a survey of applicants for graduate study offered admission to the University for the academic year 1980-81—can be summarized as follows. First, since prospective graduate students are attracted to the

University of Chicago principally for its academic excellence, recruitment of a strong student body depends ultimately on the University's ability to maintain the intellectual strength it now enjoys and to extend that strength wherever possible. Second, while the overall academic quality of the graduate students the University recruits remains relatively high, it must make a concerted effort to improve its ability to attract the very best prospective students in the diminishing national pool. Third, inadequate financial aid remains an important obstacle to attending the University, particularly in the Humanities and Social Sciences Divisions; but increased financial aid will not attract the best students in the absence of academic quality and effectively organized programs of graduate education, both of which need to be improved in some areas of the University. Fourth, recruitment procedures need to be scrutinized for ways in which the University might more effectively attract promising students.

Progress toward the Ph.D.

In Chapter 4 (Section B), we also consider the length of time it now takes to complete the Ph.D. at this University. We discover that the length of time to degree has increased in the past decade, particularly in the Humanities and Social Sciences Divisions. Not only do students in these two Divisions take far longer to earn the degree than their peers in the Biological and Physical Sciences Divisions, but they spend far greater proportions of that time without any formal link with the University. We conclude that it is essential, as a means of reducing the average time to complete the Ph.D. in the Humanities and Social Sciences Divisions, to provide a clearer and more supportive institutional environment for graduate student work, particularly at the dissertation stage. We recommend revised tuition arrangements that will encourage students to remain in residence longer than the three years usually implied by the current twenty-seven course requirement, thereby benefitting more fully from the institutional and intellectual resources of the University at the crucial research stage of their graduate careers. We urge the provision of more adequate facilities for graduate student research. And we argue for the importance of considering the establishment of a Graduate Student Center, to serve the social and general intellectual needs of graduate students more effectively.

Financial Aid

We conclude Chapter 4 by reviewing the goals of financial aid policy regarding graduate students, the patterns of financial aid at this University in the past decade, and the effectiveness of our current efforts in this respect. We note that the University has been contributing an increasingly large proportion of graduate stu-

dent aid in the Humanities and Social Sciences Divisions from its own resources, in order to compensate for the decline in support from other sources. Despite its efforts, the amount of fellowship support expressed as a percentage of tuition has fallen substantially; and graduate students are borrowing relatively large amounts through governmental loan programs that may now be in jeopardy. There is an urgent need for the University to find renewed sources of fellowship aid to support graduate study.

In our recommendations regarding financial aid, we emphasize the importance of making top financial awards as competitive as possible in order to attract the best students. We recommend continuation of the policy, recently introduced in the Humanities and Social Sciences Divisions, of guaranteeing financial aid offered to incoming students at the same level for three years, subject to appropriate performance. But we insist upon the importance of requiring superior academic performance as a condition of continued aid; and on the need for sufficient flexibility in financial aid policy to reward those students entering with little or no aid who achieve standards of superior work. We recommend that particular emphasis be placed on the importance of providing adequate financial support for students at the dissertation stage of their graduate work; and we argue for the importance of seeking support for a program of postdoctoral fellowships for outstanding young scholars in the arts and sciences. We recommend that steps be taken to prevent students from accumulating an impossibly large debt, and suggest the wisdom of a contingency plan to take effect in the event that current federal loan policies are modified in ways reducing or eliminating the eligibility of graduate students at a time when commercial loan rates are prohibitive.

The Four Divisions

In Chapter 5, we offer brief reports on the principal problems and issues now facing the faculty in each of the four Divisions. We also emphasize the importance of considering the desirability and feasibility of a separate Department of Computer Science, an issue which in our view goes beyond the needs and concerns of any one Division and must be addressed on behalf of the University as a whole. We conclude our report in Chapter 6 by presenting a proposal for the creation of a Research Institute structure in the Humanities and Social Sciences Divisions, considered as a response to the principal problems and challenges now facing the two Divisions and as a renewed assertion of the University's traditional claims to intellectual leadership in graduate education.

C. Responding to this Report

The arguments and issues we present in this report, and

the recommendations we offer, invite and require several forms of response for their implementation. Some of our recommendations, since they depend upon administrative action, are addressed directly to the President, the Provost, and the Deans. Others will require deliberation and eventual action by the Council of the University Senate. Still others depend upon the willingness of faculty bodies throughout the four Divisions to continue their own consideration of the problems and concerns we have identified in this report, and to engage in the evaluation of programs and goals that we now think essential. We urge them to do this as energetically as possible, confident that the future of this University as a center of graduate education depends principally—now, as in the past—upon the distinctive intellectual vision to which its faculty stands committed, and upon its overriding determination to bring that vision to the highest point of realization

Chapter 2: Predicting the Future, Projecting from the Past

Some of the numerous guesses of diviners have, as is not wonderful, hit the truth with great exactness. Thus John Carlo, the astrologer of Joachim I, elector of Brandenburg, published in the year 1522 a *Prognosticatio*, constructed according to the rules of the art, in which he predicted a destructive inundation, famine, pestilence, and civil and ecclesiastical troubles, for the year 1524, and the birth of Antichrist for the year 1693. But the year 1789 was to be the most terrible of all. In this year, there were to be great and marvellous events, changes and catastrophes. Adelung, who reports this prediction in a volume published in 1787, does not doubt that the astrologer will prove to be as much mistaken with respect to the year 1789, as he had already proved to be with respect to the year 1693.¹

Prediction is an uncertain business at best; a wild guess may hit the mark exactly, while a soundly derived and confidently announced forecast may bear little resemblance to the eventual truth. This is as true of higher education as of any other endeavor, but at least in the realm of education there is hope that some aspects of the process—in particular, enrollment—are amenable to prediction with at least some semblance of accuracy. As an earlier report of a faculty committee addressing this question put it, "Higher education in the United States, although still growing, will soon cease to be a growth industry. Every meaningful prediction runs the risk of being in error, but this particular one has a solid base. For a long period ahead, the future customers of our industry have already been born."²

Similar statements—supported by the United States Bureau of the Census figures that show the relevant age

group declining in size from 1980 through 1990—echo in nearly every document on the future of higher education we have encountered. A paper by John Centra surveyed several forecasts before concluding that "all indications point to a reversal in the growth spiral in higher education... a declining college-age population is the major reason for the decrease in enrollment, but many forecasters assume certain trends will alleviate the downturn in total enrollment."³ The noted demographer, Nathan Keyfitz, in a provocatively titled paper, "The Graduate Schools Lose Their Economic Base," likened the educational system to a chain letter and warned that a demographically based decline in undergraduate enrollment would have drastic and far-reaching consequences for graduate education and scientific research, forcing "extensive and even painful institutional changes."⁴ Harvard's Dean Henry Rosovsky relied more on understatement in 1978 when he wrote: "After 1955 the growth of higher education was caused primarily by the 'baby boom' rather than by changing enrollment trends. Future enrollment will most likely be tied quite directly to the size of the college-age cohort of the population. Since the size of this group will peak in 1980 and decline at least through 1995, there is no escaping the conclusion that a period of growth in higher education is over. The transition that is about to occur to a condition of no growth has implications for the academic labor market, and for the future of graduate education."⁵

Since its inception, the University of Chicago has committed an unusually large proportion of its energies and resources to graduate education. It was born of (and did much to shape) the intellectual revolution that created modern graduate education in this country almost a century ago. The majority of early graduate schools developed as colleges added graduate training and research to their traditional business of undergraduate instruction. Harper reversed that relationship, translating tentative early plans for a college into the immediate existence of a university where graduate work was "the idea which has more completely controlled the policy of the University than any other."⁶ Since then, the University of Chicago has been virtually unique in American higher education in combining a small liberal arts college with a much larger graduate school. It is therefore under a particular obligation to reflect upon the nature of graduate education in general, and to evaluate its own graduate programs in particular, in the light of current national conditions and concerns. In the present chapter of this report we shall try to survey the context for such a process of reflection and reevaluation that is presented by demographic trends at the national level, and within our own institution.

A. The National Context

It has been remarked that "Hell is truth seen too late." It might equally well be argued that "Hell is half-truth seen too soon." Certainly, the prospects of demographically driven disaster are torturing many souls in contemporary academic life. Following a period of dramatic growth, the size of the traditional college-age population is about to diminish. After two decades of expansion fueled by that growth, American higher education faces the prospect of declining enrollments, which in turn imply contracting resources, diminished opportunities, and institutional dislocation. Annual births in the United States fell from about 4.3 million in the early 1960s to just over 3.1 million in the mid-1970s, rising slightly again to roughly 3.3 million in 1979. Given such figures, the traditional college-age population is expected to shrink by about a quarter in the next two decades. According to its 1980 report, *Three Thousand Futures*, the Carnegie Council on Policy Studies in Higher Education calculates that the size of the eighteen to twenty-four age cohort will decline by 23.3 percent between 1979 and 1997.⁷

We shall see later that such figures do not of necessity imply a corresponding decline in national graduate school enrollment, much less those at the University of Chicago. But first we will do well to review some currently expressed conclusions based upon this projected decline, since they have played a major role in creating the present mood in higher education nationally.

Some Projections

Efforts to estimate the fall in college enrollments that might result from the predicted decline in the traditional college-age population depend critically upon judgments regarding the extent to which the apparent implications of that decline might be offset by changing patterns of college attendance among different social and economic groups within that age cohort, as within other groups in the general population. They can therefore vary considerably. The Carnegie Council has estimated that the decline in full-time equivalent (FTE) enrollments in the period between 1979 and 1997 will fall within a range of 5 percent to 15 percent. That decline, it has suggested, will not occur at an even rate. The Council expects undergraduate enrollments to hold steady until 1983, after which there will be a relatively steep drop until the end of the 1980s (about 40 percent of the total decline). After a brief interruption, the decline will resume in 1991, continuing at a sharper rate until 1997 (about 60 percent of the total decline). Enrollments will then begin to recover steadily until they reach 1979 levels once again about 2010.⁸

In comparison with some other projections, the calculations of the Carnegie Council appear relatively optimistic. Fred Crossland, of the Ford Foundation, offers the more severe estimate of a 15 percent reduction in the total number of students enrolled (full-time and part-time), which would produce a decline substantially exceeding 15 percent in FTE enrollment. He also

Figure 1: Projected Full-Time Enrollments in Higher Education, 1980-2000

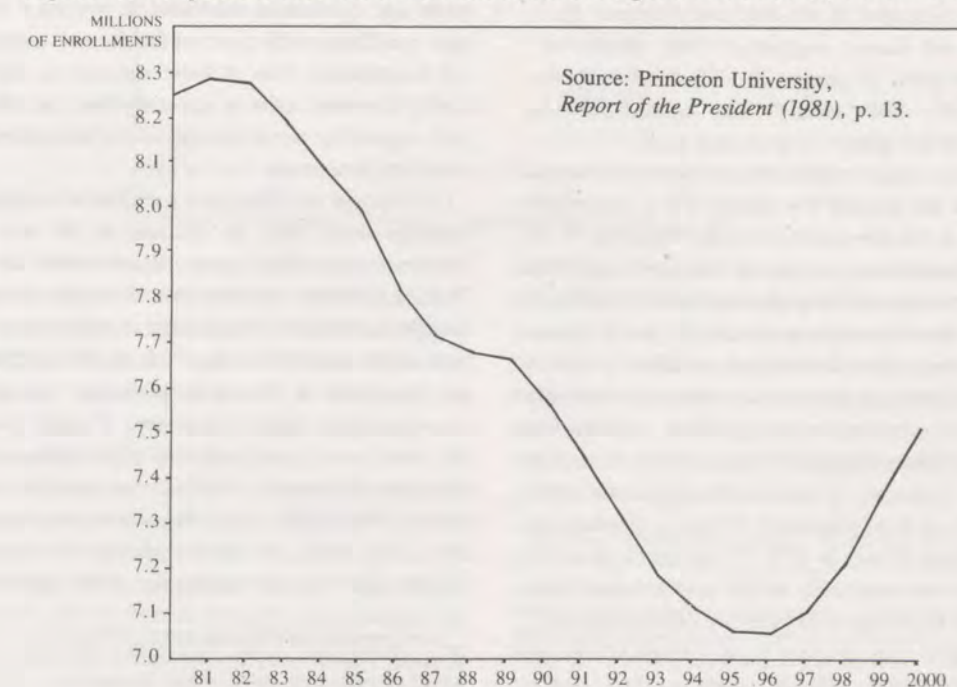
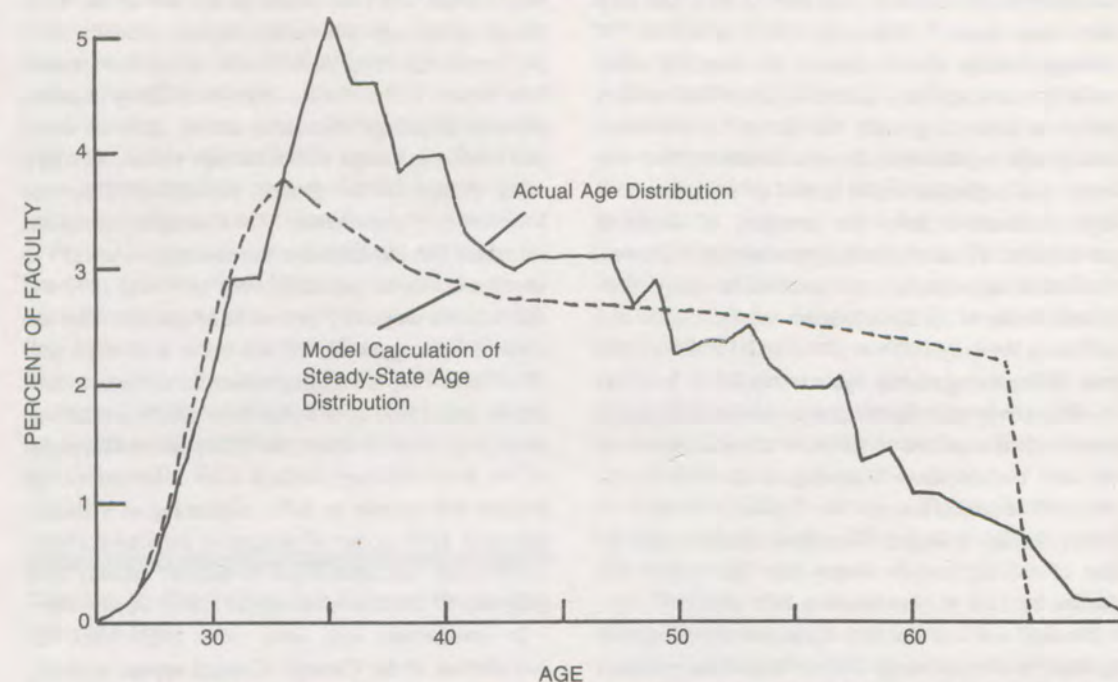


Figure 2: Actual and Steady-State Distributions, Full-Time Doctoral Faculty at Ph.D. Granting Institutions, 1978*



*As calculated by the Committee on Continuity in Academic Performance, National Research Council. Reproduced from *Research Excellence Through the Year 2000* (Washington: National Academy of Sciences), p. 19.

argues that there will be substantial regional variations, with enrollments in the northeastern quadrant of the country decreasing at perhaps twice the national rate.⁹ This more pessimistic view is shared by William Bowen, president of Princeton University. Calculations carried out for his cogent 1981 presidential report, *Graduate Education in the Arts and Sciences: Prospects for the Future*, suggest a "very substantial" decline of about 15 percent in FTE enrollments between 1981 and 1996.¹⁰ The calculations are represented in Figure 1 on preceding page.

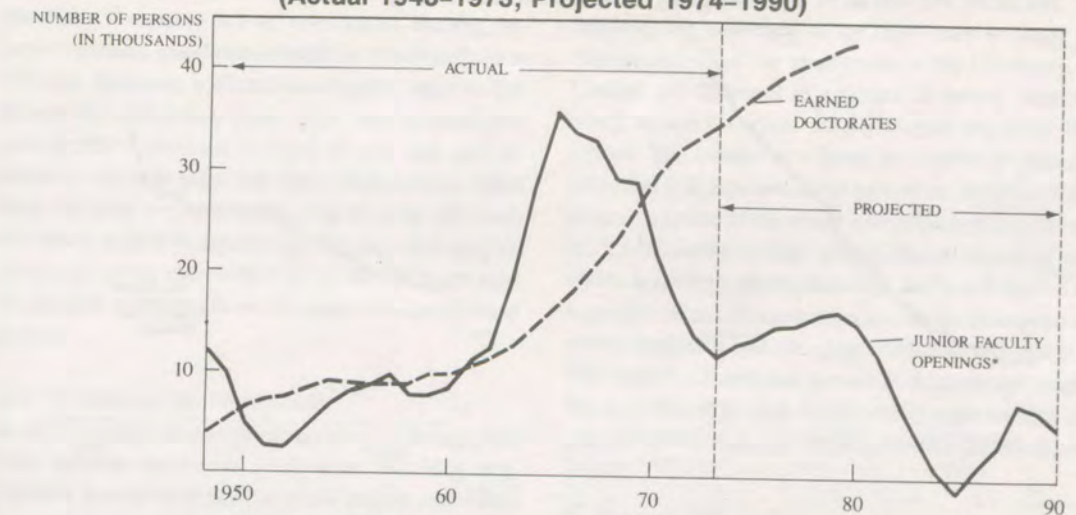
Shrinking college enrollments are expected to mean a decline in the demand for faculty and a consequent reduction in the job opportunities for which the Ph.D. has traditionally been the preparation. The implications of these calculations for graduate education leading to the Ph.D. therefore seem grave enough. But the consequences of declining enrollments are likely to be exacerbated by the age distribution among current faculty members and by the recent legislation extending the age of mandatory retirement to age seventy. Because of the rapid expansion in higher education in the 1960s and 1970s, a large proportion of faculty members are still relatively young. In 1978, 73 percent of all faculty members were under fifty and 60 percent under forty-five; only 16 percent were fifty-five or over and only 7 percent were sixty or older.¹¹ As a result of this age distribution, there will be relatively few faculty

retirements in the next two decades. Figure 2, drawn from a recent report of the Committee on Continuity in Academic Research Performance to the National Research Council, illustrates this situation by comparing the actual age distribution of full-time doctoral faculty at Ph.D. granting institutions in 1978 with a model age distribution calculated to produce a steady state equilibrium with constant faculty size under certain assumptions. One of those assumptions, that all faculty members retire at age sixty-five, has already been negated by recent changes in the laws governing mandatory retirement.

Low rates of retirement and a decline in enrollments therefore seem likely to combine in the next two decades to depress the academic job market for new Ph.D.s. Efforts to calculate this effect are extremely complex and involve a wide range of assumptions. The most recent projections—an effort by William Bowen and associates at Princeton to update the earlier calculations of Alan Cartter (see Figures 3a and 3b)—reach an estimate that a total of 100,000 academic positions will become available in the period from 1980 to 1995.* This figure would mean that the total demand for faculty during the fifteen year period would be roughly equal to that during the three peak years,

*Other estimates, cast principally in terms of demand for new Ph.D.s in science and engineering, are considered in *Research Excellence Through the Year 2000*, pp. 10-49 and Appendix B.

Figure 3A: Comparison of Junior Faculty Openings with Earned Doctorates Awarded (Actual 1948-1973, Projected 1974-1990)

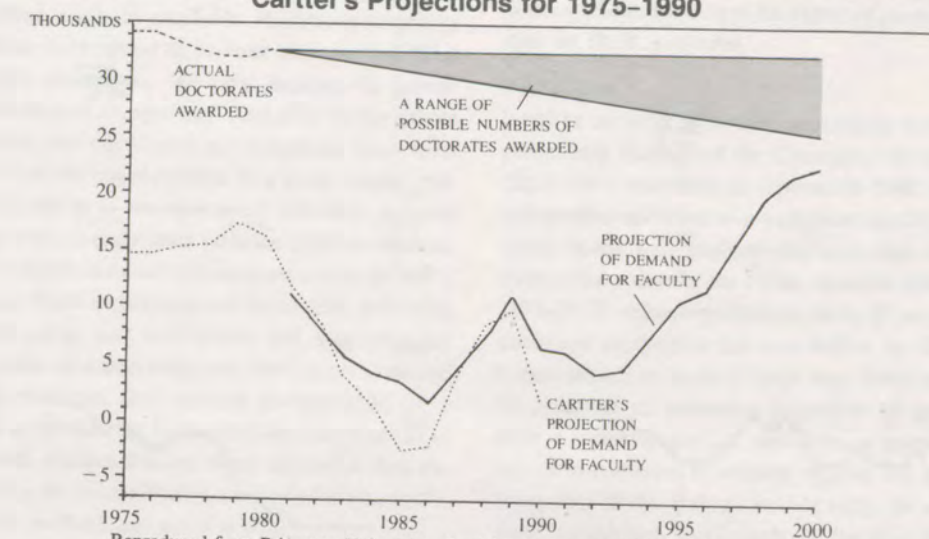


*Three-year moving average.

Copyright 1976 by The Carnegie Foundation for the Advancement of Teaching, reproduced with permission.

Reproduced from Princeton University, *President's Report* (1981), p. 19.

Figure 3B: Bowen's Projections of Faculty Demand, 1981-2000 Compared with Cartter's Projections for 1975-1990



Reproduced from Princeton University, *President's Report* (1981), p. 20.

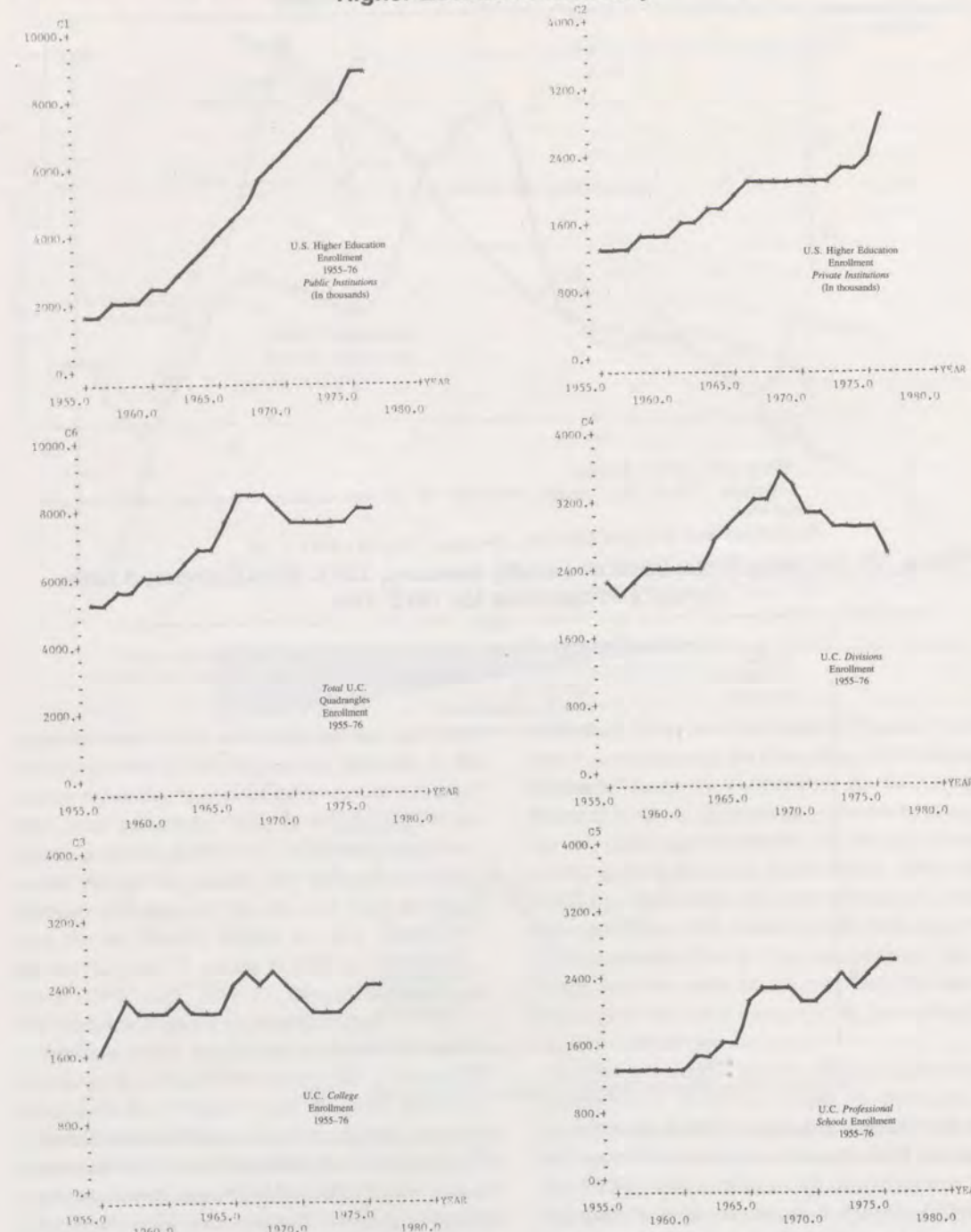
1965-67.¹² On the supply side, 31,200 doctorates were awarded by United States universities in 1979, as compared with 16,341 in 1965, 17,949 in 1966, and 20,406 in 1967.¹³ Although the number of doctorates granted has declined from the peak year of 1973 (which produced 33,756), it remains far in excess of Bowen's predicted demand for new faculty.

The implications of these projected trends for graduate education in the arts and sciences seem severe. Diminished opportunities in the academic job market have already discouraged many well-qualified prospective Ph.D. students from pursuing a program of study conceived principally as a preparation for academic careers, and seem likely to continue doing

so.** The consequent decline in graduate enrollments will jeopardize the continuity and vigor of teaching and research in many fields of knowledge. The impending shortage of positions for junior faculty members will restrict the flow of innovative young scholars into academic life, thereby threatening the creativity and vitality of research and scholarship long after the crisis in enrollment has subsided.

**A survey at Harvard and Radcliffe, for example, discovered that only 34 percent of *summa* graduates in 1980 planned to proceed immediately to graduate work in the arts and sciences, as compared with 75 percent in the mid-sixties. At Dartmouth, a comparison of the plans of the top one hundred students in 1977 and 1978 showed a 25 percent decline in the number proceeding to graduate work in the arts and sciences (see Princeton University, *President's Report* (1981), p. 24).

Figure 4: Comparison of Trends, 1955-76, at the University of Chicago and in U.S. Higher Education Generally



These are grave prospects. What are their implications for a graduate school like our own? We should not expect to be untouched by any such developments. But neither should we regard these projections as issuing in an iron law of decline. They depend upon many assumptions and are subject to unanticipated changes as a result of many factors which are not strictly demographic. They represent in the aggregate tendencies that will not affect all institutions equally, or in the same way. How far, then, should we depend upon them in considering

the future of graduate education at the University of Chicago? How far can we anticipate future graduate enrollments here in the light of these national projections? Their conclusions are based on extensive population data and a persuasive logic, but the main implicit assumption—that population-based forecasts are sufficiently accurate to provide useful information for University planners—does not seem to have received as much attention as it deserves. It would seem plausible that at least some useful information can be gleaned from

demographic trends, that knowledge of the number of "future customers" should permit, at the very least, a reasonable forecast of national enrollments, and that patterns in national enrollments should be related to those at Chicago. However, a limited investigation suggests that despite this compelling logic, other than demographic considerations dominate national trends, and past attempts to come to grips with these other considerations have not been very successful. One may be optimistic that future models incorporating other than demographic factors will prove more effective, but the optimism must be guarded: such models do not seem to be available at present.

How Reliable are the Projections?

In order to gauge the maximum accuracy to be expected from national enrollment predictions, we have performed a retrospective analysis of the longest continuous series of past projections we could locate, those of the National Center for Educational Statistics. This analysis, which is described more fully in Appendix A, leads us to the conclusion that projections of this kind can be very unstable, and that predictions into a future as far as ten years ahead tend to be unreliable. Predictions for private institutions have tended to be more accurate than those for public institutions, but only because the private enrollments have changed less. And even for the private institutions the eight- and ten-year-ahead predictions have missed the major patterns by a large margin: projections made up to ten years ahead are off by amounts as large as six to eight years variation in the enrollments themselves! The results of our study are consistent with a belief that future enrollments can be no more accurately predicted using past enrollments and supplementary demographic data than using past enrollments alone and ignoring other data. Both methods are unreliable.

These projections do not do well because they fail to incorporate changes that are more influential than the factors they do include, that is, unanticipated changes in economic, political, and social conditions.

When we look at the relationship between University of Chicago enrollments and national figures, we must become even more pessimistic about the possibility of forecasts that will be useful for the University. As Figure 4 shows, there is no strong (or even positive, relationship between these series. Furthermore, the variation within the University, among Schools, Divisions, and (in other figures) departments, underlines the inapplicability of national aggregate data to a particular institution.

Pessimism over the ability to forecast does not mean that we at the University of Chicago can afford to remain sanguine regarding the University's fate. But it does suggest that gloomy predictions based on seemingly inexorable census data may not be a reliable indicator of the University's future. We would be imprudent to disregard

the demographic data entirely, but equally unwise to think of them as issuing in an iron law of decline, or depriving the University of the opportunity to shape its own course. Graduate enrollments at the University of Chicago are the result of a variety of factors, some of which remain uncertain, many of which are within our control. The University's future as a center of graduate education will depend in large part on the distinctiveness of its conception of the nature and purpose of that activity. It will depend in large part on the excellence of our efforts to realize such a conception. And it will depend in large part on our determination and ability to respond to current problems and changing conditions in ways that will further our common pursuit of fundamental goals. We must therefore seek to plot our present location as clearly, and to chart our future course as decisively, as possible.

B. The Local Context

By way of preparation for such a task, we turn our attention in this section of the Commission's report to some important demographic trends at the University of Chicago. We begin with the question of graduate student enrollments before turning to the matter of career opportunities for Ph.D. graduates.

Recruitment

It will be useful to begin this discussion by reviewing the preliminary findings of the Committee on Enrollment (Bradburn Committee), as reported in 1980. The committee drew attention to a pattern of declining enrollments in the four graduate Divisions that established itself in the course of the 1970s. Between 1968-69 and 1978-79, Divisional enrollments fell by 27 percent while Divisional applications fell even further, by 37 percent. Larger reductions in enrollments were therefore avoided by accepting an increasing proportion of applications from a shrinking pool of applicants, a practice which cannot be continued indefinitely without fear of eroding the quality of the graduate student body. As a result of these diminishing enrollments in the four Divisions, which were offset in large part by increases in College and professional School admissions, the traditional proportions of undergraduate, graduate, and professional students enrolled on the Quadrangles were modified substantially in the last decade. From the late 1930s to the early 1970s, Divisional enrollments accounted for over 40 percent of the student body. After 1972, their share declined steadily, reaching 33 percent in 1978-79 (as compared with 33 percent in the Schools and 34 percent in the College). Considering these figures, the Bradburn Committee concluded that "the situation facing us in regard to graduate enrollments is a threat to the existence of the University as we have known it. It should be recognized as such, and the response should be commensurate with the recognition of that threat."¹⁴

TABLE 1: ENROLLMENT PROPORTIONS OF UNIVERSITY UNITS BY YEAR¹
(Degree Candidates Only)

Year	Divisions	Schools	College	Total Enrollment
1939-40	44%	27%	29%	5730
1948-49	49	20	31	8210
1958-59	42	21	36	5802
1968-69	41	27	32	8335
1978-79	33	33	34	7781
1981-82	28	34	37	7694

¹Proportions will not always add to 100 percent due to rounding errors.

This Commission has found little to modify such a conclusion. Since the academic year 1978-79, the relative size of the student body in the four Divisions has continued to decline. As Table 1 shows, Divisional enrollments in 1981-82 accounted for 28 percent of the total enrollment of the Quadrangles (as compared with 37 percent in the College and 34 percent in the Schools).

The number of degree candidates in the four Divisions was 37 percent lower in 1981-82 than in the peak year 1968-69, while the number of applications for admission in that year was 46 percent lower (Table 2). As a result, the gap between applications and acceptances has continued to close. In 1968-69, 62 percent of the applicants for study in the four Divisions were offered admission and 31 percent of those admitted actually matriculated. In 1981-82, the proportion of applicants matriculating was much the same (35 percent), but the proportion of applicants offered admission had increased significantly to 72 percent.

It should be emphasized here (as it was in the Bradburn Committee Report) that the pattern at Chicago is similar to that at other first-rank graduate schools with whom we customarily compare ourselves. We are not alone. Of the ten leading research institutions (most of them private) for which comparable figures are available to us, graduate school applications to seven of them were down about 20 percent to 30 percent in the period 1976-79, while matriculations at seven were down by 7 percent to 32 percent in the same period. However, the decline at Chicago is among the highest in each of these categories.

Not surprisingly, the pattern varies considerably among the Divisions and departments. As Figure 5 shows, enrollment has declined most dramatically in the Physical Sciences Division (down by 46 percent since 1968-69), a matter of serious concern in a Division where graduate student collaboration is a central feature of research activity. The declines have also been sub-

TABLE 2: APPLICATIONS AND ENROLLMENT (1968-1981)
(Standardized 1968-69 = 100)¹

Year	Divisions		College		Schools	
	Applications	Enrollment	Applications	Enrollment	Applications	Enrollment
1968-69	100	100	100	100	100	100
1969-70 ^b	94	95	101	90	110	100
1970-71	87	85	93	83	113	99
1971-72	79	87	72	81	135	99
1972-73	91	86	110	80	164	104
1973-74	83	81	94	83	177	101
1974-75	78	83	94	87	188	106
1975-76	78	82	103	92	202	112
1976-77	70	75	113	94	194	112
1977-78	68	77	107	98	180	111
1978-79	61	73	126	102	175	114
1979-80	60	69	148	105	178	112
1980-81	53	65	144	106	180	113
1981-82	53	63	226	110	195	116

¹Base (1968-69)

Figure 5: Enrollments in the Four Divisions (1968-82)
Base: 100-14 Year Average Enrollment



stantial in the Social Sciences Division (39 percent) and in the Humanities Division (35 percent). To date, the Biological Sciences Division has essentially held its own with a decline of 5 percent over the entire period since 1968-69, though the decline in the number of matriculants since 1977-78 suggests the possibility of difficulties in the future. Departmental variations within Divisions are summarized in Figure 6, where the dots summarize percentage changes per year between 1968-69 and 1981-82 (for example, a value of -4 per-

cent per year means that a department declined an average of 4 percent *per year* of its average enrollment over the period, or about 56 percent of its average enrollment in the fourteen year period). In Figure 6, negative values represent declines; positive values represent gains. The numbers are actually crude descriptive over-all summaries: they do not reflect the briefer changes in trends or more complex patterns evident in the more detailed figures appearing later in this report. Figure 7 presents similar data for applications.

In the Physical Sciences Division, the decline in enrollments has been greatest in the three largest departments, Physics, Chemistry, and Mathematics; only in Geophysical Sciences and Astronomy and Astrophysics do they remain near earlier levels. In Social Sciences, the decline has been a marked one in Education, Geography, History, Political Science, and Behavioral Sciences, while Economics, Social Thought, Anthropology, and International Relations have escaped or reversed the trend. In Humanities, Western languages and literatures, including English, have experienced large declines, with Comparative Literature a notable exception. Art, Linguistics, and Asian language and literature departments (with the exception of Far Eastern) show little net change, while Music has increased markedly. In Biological Sciences, there have been sharp declines in several departments (Biophysics and Theoretical Biology, Biopsychology, Anatomy) and a noticeable decline in the largest (Biology). These losses have been offset by increases in Clinical Nutrition, Developmental Biology, Genetics, Immunology, Pathology, and Virology.

In some departments, most notably in the Social Sciences and Humanities Divisions, there has been a strong relationship between enrollment level, the number of applications, and the admission rate: admission rates are highest for departments with low or falling enrollments; and as the number of applications has dropped the proportion of applicants admitted has risen. In such cases, a slight change in enrollment may mask a dramatic drop in applications. Assuming student application practices had remained constant, this would suggest a decline in the quality of matriculating students. On the other hand, if prospective students have reduced the average number of multiple applications made, or those in areas receiving fewer applications are much more self-selective, or the decline in applications has occurred disproportionately among the less well qualified, there

*Changes in department selectivity were measured by a coefficient of compensation C defined for this purpose. Those departments circled as having shown marked change in selectivity are those for which $C > .2$ and for which the number of applications showed a decline over the fourteen years covered. We shall give a technical definition of C below, but it might best be interpreted in these terms: if a department maintains a constant rate of acceptance (that is, always admits a fixed percentage of its applicants, so there is no "compensation" for declining applications via an increasing rate of acceptance, then $C=0$. On the other hand, if a department always admits a fixed number of students, regardless of the number of applications (so that if applications are declining its admission rate is compensating perfectly for this), then $C=1$.

The values of C for the circled departments are:

English	.25	Behavioral Sciences	.60
Far Eastern	.21	Economics	.85
History of Culture	.48	History	.32
NELC	.48	Political Science	.80
Philosophy	.62	Social Thought	1.61
SALC	.23	Sociology	.80
Anthropology	.80		

would be no necessary change in the quality of students admitted. Since we lack adequate objective information on any measure of quality of students admitted over this period, we cannot distinguish among these possibilities.

Figure 8 gives a measure of departments' selectivity in admissions by showing the average percentage of those applying who were offered admission in each department during the period 1968-69 through 1981-82. Departments "circled" in this figure are those whose selectivity changed markedly over the fourteen years, as the percentage offered admission increased in the face of a decline in the number of applications.* The two Divisions (Humanities and Social Sciences) in which the smallest proportion of students receive financial support have historically been the least selective, and they have evidently exercised the greatest flexibility in meeting a drop in applications with an increase in the admission rate. The Physical and Biological Sciences have not raised admission rates; indeed, in several departments in Biological Sciences with increasing numbers of applications, the admission rate has actually declined. It may well be true that the quality of applicants varies from department to department in such a way that high or increasing admission rates would have less negative effects on student quality in some departments than in others. Nevertheless, the issue of student quality is a concern to which we shall feel obliged to return.

Employment Opportunities

We turn now from changing enrollment patterns in the four Divisions to changing patterns in employment opportunities for Ph.D. graduates in the arts and sciences. Tables 3 through 7 give data on employment of Divisional graduates upon graduation for the years since 1970, drawn from the reports prepared by the Director of Career Counseling and Placement and published annually in the *University of Chicago Record*. These data have several obvious limitations. They refer only to employ-

The criterion value of $C=.2$ was chosen after noting that for all departments with larger C, scatterplots of admission rate vs. applications showed visually striking patterns. The choice was thus somewhat arbitrarily made to permit a simplified display in Figure 8 of those departments whose admission rates had changed most. Some departments in the Biological Sciences Division had large C (Pathology, with $C=.64$ was the largest of these), but because of rising numbers of applications this indicated increasing selectivity. Departments with very high average admission rates had little or no flexibility and showed no marked tendency for compensation.

Technically, C was computed as follows: Let r be the department's average admission rate over fourteen years. The model

$$\text{NUMBER ACCEPTED} = B_0 + B_1 (\text{NUMBER APPLIED})$$

was fit by weighted (by number applied) least squares. (Equivalently,

$$\text{ADMIT RATE} = B_1 + B_0 (1/\text{NUMBER APPLIED})$$

was fit by least squares.) Then $C = (r - B_1)/r$.

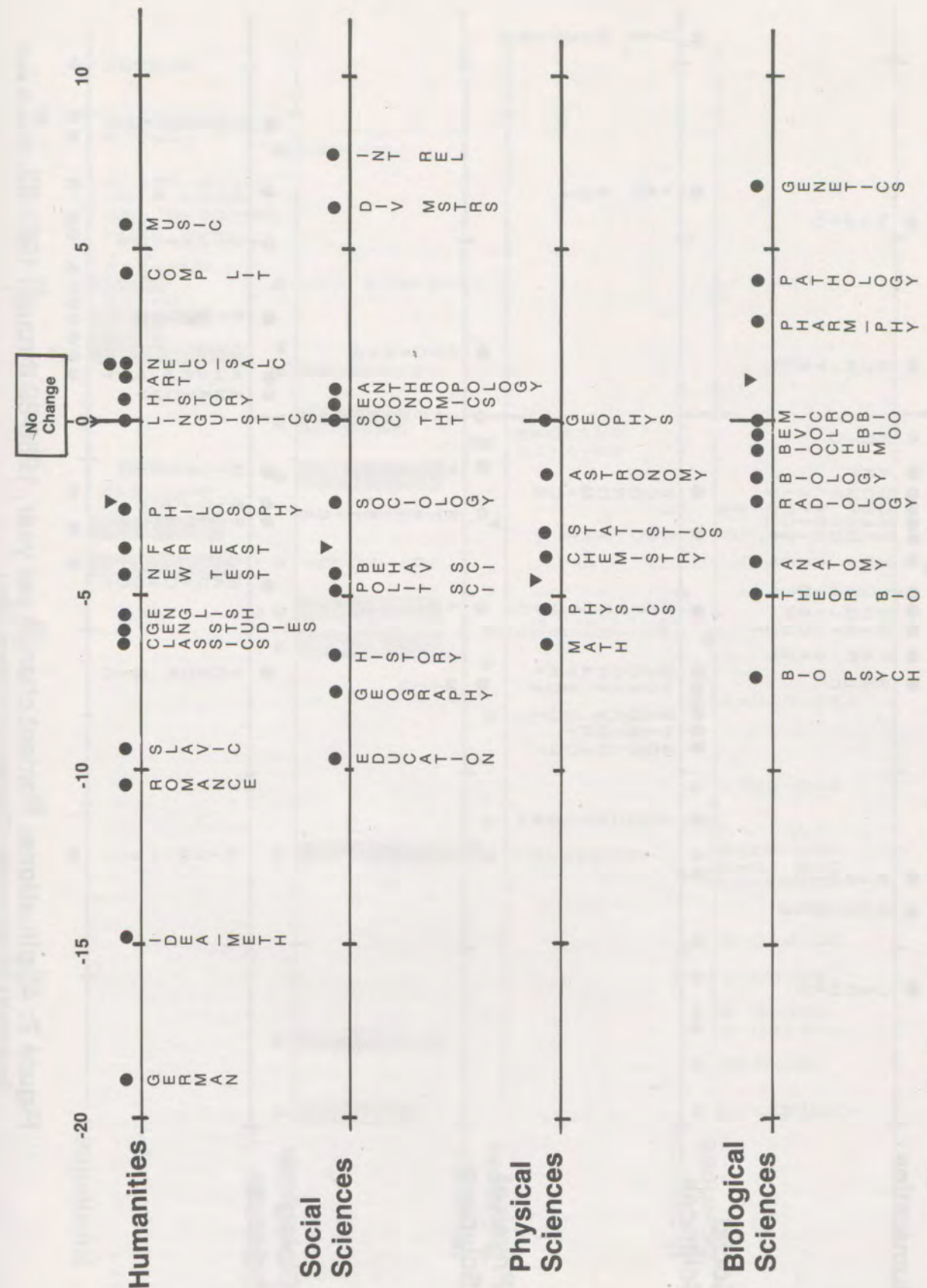


Figure 6: Enrollment: Percent change per year, 1968-69 through 1981-82. (Base is each Department's 14 year average.) (Triangles are Divisional rates.)

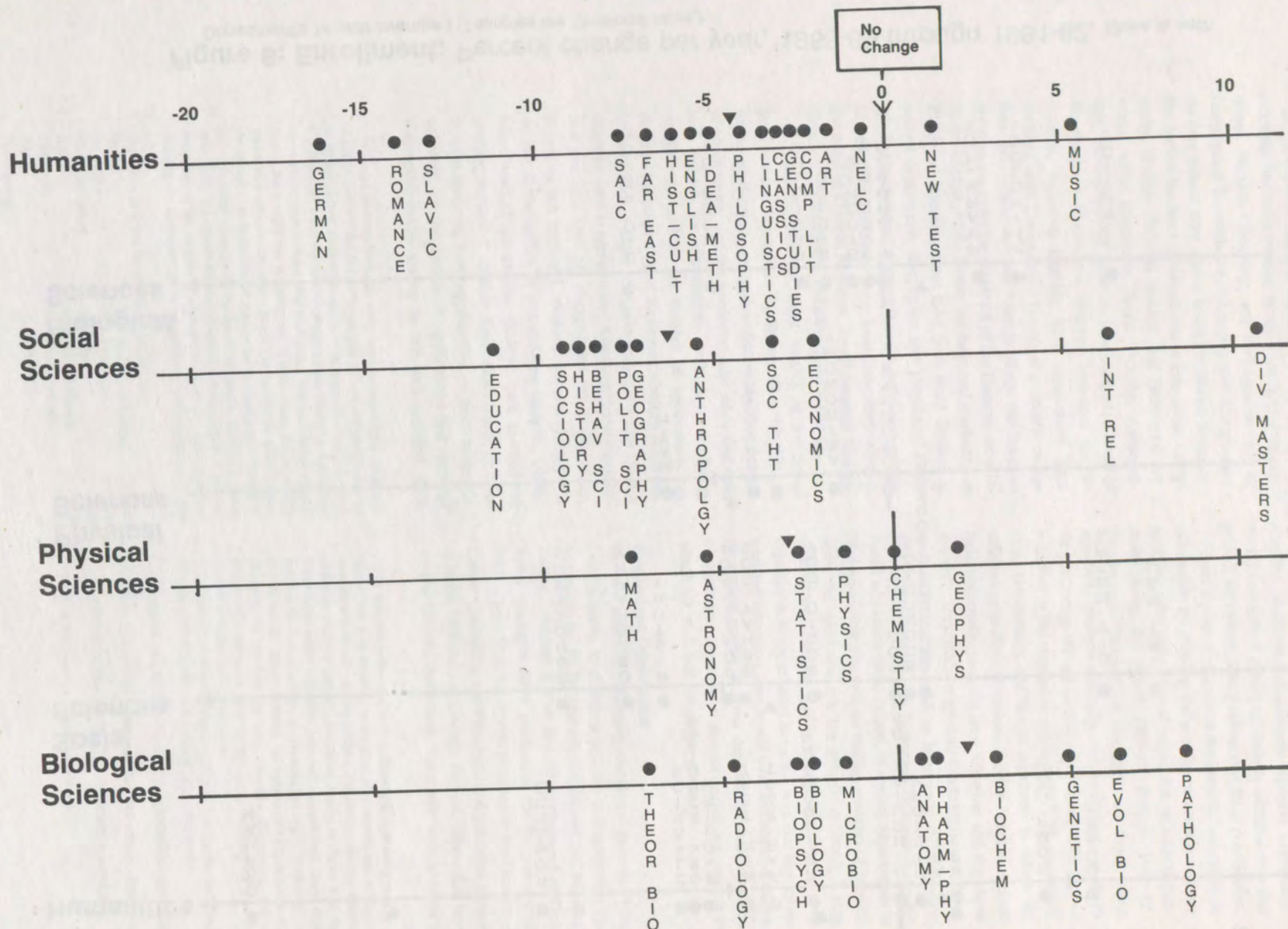


Figure 7: Applications: Percent change per year, 1968-69 through 1981-82. (Base is each Department's 14 year average.) (Triangles are Divisional rates.)

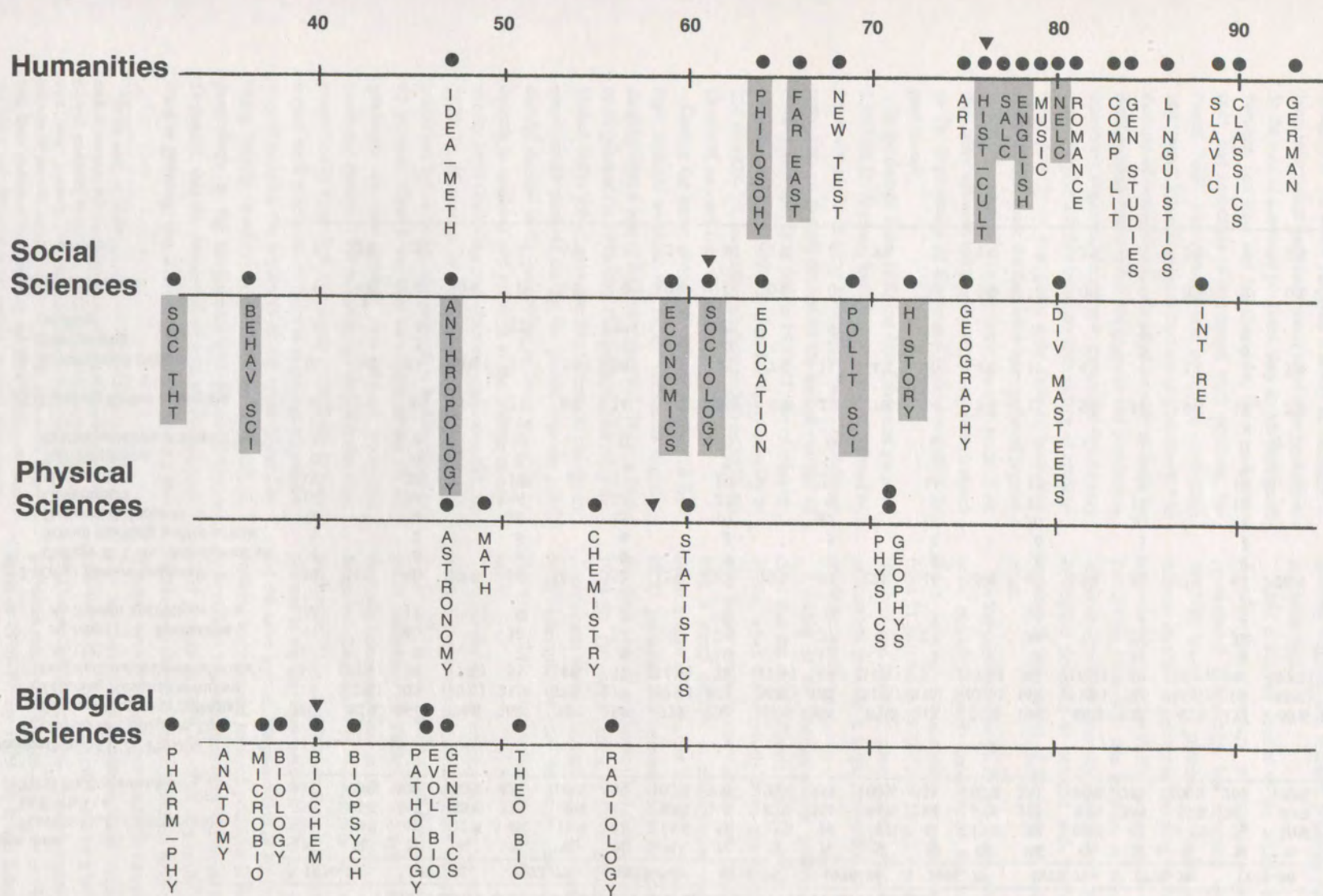


Figure 8: Department Selectivity: Average percent offered admission, 1968-69 through 1981-82. (Triangles are Division averages). Shaded Departments have shown marked change in selectivity, as percent admitted increased in the face of declines in applications.

TABLE 3: EMPLOYMENT OF PH.D.S: FOUR DIVISIONS
TEN YEAR COMPARISON BY OCCUPATION ENTERED

TEN-YEAR COMPARISON BY OCCUPATION ENTERED																				
1970-71		1971-72		1972-73		1973-74		1974-75		1975-76		1976-77		1977-78		1978-79		1979-80		
N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
35	9%	47	12%	48	11%	41	11%	53	13%	19	6%	44	13%	38	11%	42	17%	26	10%	
350	91%	347	88%	373	89%	348	89%	343	87%	314	94%	284	87%	293	89%	208	83%	243	90%	
385	100%	394	100%	421	100%	389	100%	396	100%	333	100%	328	100%	331	100%	251	100%	269	100%	
Total Ph.D.s awarded																				
Occupations of U.S. Ph.D.s:																				
1. Careers in College & Univ.																				
Research/Teaching (subtotal)																				
286	82%	264	76%	262	70%	254	73%	230	67%	205	65%	213	75%	194	66%	131	63%	152	63%	
217	(62%)	205	(59%)	211	(57%)	217	(62%)	192	(56%)	161	(51%)	176	(62%)	148	(51%)	92	(44%)	104	(43%)	
Teaching/Research positions																				
69	(20%)	59	(17%)	51	(14%)	37	(11%)	38	(11%)	44	(14%)	37	(13%)	46	(16%)	39	(19%)	48	(20%)	
Post-doctoral fellows (subtotal)																				
12		8		7		5		10		11		7		8		11		9		
At U.C.																				
45		40		38		27		21		27		27		34		24		33		
At other U.S. institutions																				
12		11		6		5		7		6		3		4		4		6		
At foreign institutions																				
39	11%	60	17%	68	18%	53	15%	63	18%	69	22%	44	15%	66	23%	56	27%	63	26%	
2. Other careers (subtotal)																				
4		6		6		0		7		7		8		5		8		7		
College & Univ. Administration																				
1		2		6		6		2		5		1		6		3		2		
School teaching and/or admin.																				
8		4		20		13		10		15		16		20		20		18		
Business & Industry																				
10		20		16		22		22		9		5		17		13		14		
Government																				
15		28		18		11		20		31		11		17		9		19		
Non-profit																				
0		0		2		1		2		2		3		1		2		3		
Self-Employed																				
1		0		0		0		0		0		0		0		1		0		
Religious/Military Service																				
3. Pursuing further education																				
7	2%	5	1%	21	6%	14	4%	21	6%	21	7%	14	5%	15	5%	12	6%	18	7%	
4. Unemployed (subtotal)																				
10	3%	13	4%	18	5%	20	6%	25	7%	11	4%	10	4%	11	4%	4	2%	3	1%	
7		5		1		1		5		2		2		2		2		0		
3		8		17		19		20		9		8		9		2		3		
Not seeking																				
seeking																				
5. Miscellaneous																				
1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%	
6. Unknown																				
7	2%	5	1%	4	1%	7	2%	4	1%	8	3%	3	1%	7	2%	5	2%	7	3%	

In the decade from 1970 the four Divisions awarded 3,497 Ph.D. degrees, including 393 degrees earned by foreign students holding temporary visas. That figure represents an overall decline in the annual number of Ph.D.s awarded: from 385 in 1970-71, the number increased to 421 in 1972-73, then fell fairly steadily to 251 in 1978-79, increasing slightly to 269 in 1979-80 (down 31 percent over the decade).

During the same period, the annual number of foreign students awarded the Ph.D. fluctuated slightly, ranging from a low of 6 percent (in 1975-76) to a high of 17 percent (in 1978-79). For graduates entering the United States job market, the most dramatic change in employment patterns during the period was the substantial decline in the proportion of those going on to careers in teaching and research at the college or university level (including post-doctoral appointments). In 1970-71, 82 percent of our graduates went on to such positions; by 1979-80, the proportion had declined to 63 percent. Thus fewer than two-thirds of our Ph.D. graduates are now finding *first* jobs in traditional academic careers. Unfortunately, we do not know what proportion of those first jobs involve temporary or non-tenure track positions, so there is at present no precise way of gauging the reliability of the sense (shared by many faculty members with whom we have talked, particularly in the Humanities and Social Sciences Division), that the proportion of such short-term positions is growing. But it seems prudent to assume that

*In the study of employment of 1974-75 doctorates, an effort was made to calculate this latter proportion. Of the academic jobs to which students graduating in that year proceeded, the following percentages were "new": academic jobs: Physical Sciences 95 percent; Biological Sciences 80 percent; Social Sciences 52 percent; Humanities 52 percent. Since students in the Humanities and Social Sciences Divisions now find it more difficult to secure academic positions before completion of the Ph.D., it seems likely that the proportion of new jobs has increased for graduates of those Divisions.

fewer than the 63 percent of our Ph.D. graduates now entering teaching and research positions will remain in academic life.

After a marked decline in the middle years of the decade, the percentage of graduates going on to postdoctoral fellowships has returned again to the 1970-71 level of 20 percent. There has also been a marked increase in graduates choosing to continue their education beyond the Ph.D. (2 percent in 1970-71; 7 percent in 1979-80): this increase is principally the result of a growing tendency among Ph.D. graduates in Biological Sciences to proceed with further medical training in the context of the joint M.D.-Ph.D. program.

As the percentage of Ph.D. graduates entering traditional academic careers has declined, the percentage of those entering non-academic careers has increased from 11 percent in 1970-71 to 26 percent in 1979-80. Business and industry, government, and non-profit organizations provide a large proportion of these non-academic positions.

Looking at the unemployment patterns, it seems clear that the most difficult period came in the middle 1970s, when the relatively large number of students who began graduate study in the late 1960s were met with a sharp decline in employment opportunities. From a high of 7 percent in 1974-75 the number of Ph.D. graduates still unemployed in the Spring following their year of graduation had fallen to 1 percent in 1979-80. Of course, some of those graduates whose employment status remained unknown may also have been unemployed or seriously underemployed. However, their relative number has remained fairly small.

Within the overall employment trends suggested by Table 3, there are naturally important variations among the four Divisions. Data for each Division are therefore given separately in Tables 4 through 7. The most dramatic patterns appear in the Humanities and Social Sciences Divisions. In Humanities (Table 4) the number of Ph.D. graduates on the job market fell by 30 percent in the ten years between 1970 and 1980. During the same period, the proportion of Ph.D. graduates entering teaching and research positions at the university or college level declined from 93 percent in 1970-71 to 69 percent in 1979-80. This is a really substantial decline in a Division whose graduates have traditionally gone overwhelmingly into academic careers. Table 4 also suggests that the employment crunch of the mid-1970s was felt most critically by graduates with Ph.D.s in the Humanities. Unemployment for these graduates reached as high as 13 percent in 1973-74 and again in 1976-77. By 1979-80, it had fallen to 2 percent as larger proportions of Humanities Ph.D.s were entering non-academic careers.

TABLE 5: EMPLOYMENT OF PH.D.S: SOCIAL SCIENCES DIVISION
TEN-YEAR COMPARISON BY OCCUPATION ENTERED

	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76		1976-77		1977-78		1978-79		1979-80	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Base data:																				
Foreign Ph.D.s (temp visa)	17		21		19		22		23		9		25		22		21		18	
U.S. Ph.D.s	159		174		184		159		170		172		135		142		86		103	
Total Ph.D.s awarded	176		195		203		181		193		181		160		164		107		121	
Occupations of U.S. Ph.D.s:																				
1. Careers in College & Univ.																				
Research/Teaching (subtotal)	124	78%	126	72%	131	71%	128	81%	117	69%	111	65%	106	79%	97	68%	47	55%	60	58%
Teaching/Research positions	120	(75%)	121	(70%)	123	(67%)	125	(79%)	110	(65%)	104	(60%)	101	(75%)	89	(63%)	42	(49%)	52	(50%)
Post-doctoral fellows (subtotal)	4	(3%)	5	(3%)	8	(4%)	3	(2%)	7	(4%)	7	(4%)	5	(4%)	8	(6%)	5	(6%)	8	(8%)
At U.C.	1		0		2		0		2		2		0		2		3		1	
At other U.S. institutions	3		0		3		3		4		4		3		5		2		7	
At foreign institutions	0		5		3		0		1		1		2		1		0		0	
2. Other careers (subtotal)	22	14%	38	22%	41	22%	25	16%	37	22%	43	25%	23	17%	40	28%	32	37%	37	36%
College & Univ. Administration	3		5		6		0		4		4		5		4		4		6	
School teaching and/or admin.	1		1		5		4		2		4		1		6		3		1	
Business & Industry	3		2		7		2		3		7		4		10		7		4	
Government	4		6		8		10		15		4		3		10		8		7	
Non-profit	11		24		13		9		13		22		8		10		8		16	
Self-Employed	0		0		2		0		0		2		2		0		1		3	
Religious/Military Service	0		0		0		0		0		0		0		0		1		0	
3. Pursuing further education	1	1%	0	—	5	3%	1	1%	0	—	6	3%	1	1%	0	—	0	—	2	2%
4. Unemployed (subtotal)	4	3%	5	3%	6	3%	3	2%	12	7%	8	5%	3	2%	3	2%	1	1%	2	2%
Not seeking	3		1		0		0		3		1		2		0		1		0	
seeking	1		4		6		3		9		7		1		2		0		2	
5. Miscellaneous	1	1%	0	—	0	—	0	—	0	—	0	—	0	—	0	—	1	1%	0	—
6. Unknown	7	4%	5	3%	1	1%	2	1%	4	2%	4	2%	2	1%	2	1%	5	6%	2	2%

TABLE 6: EMPLOYMENT OF PH.D.S: BIOLOGICAL SCIENCES DIVISION
TEN-YEAR COMPARISON BY OCCUPATION ENTERED

	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76		1976-77		1977-78		1978-79		1979-80	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Base data:																				
Foreign Ph.D.s (temp visa)	3		3		4		1		0		0		0		1		1		5	
U.S. Ph.D.s	46		41		38		51		60		43		46		42		32		51	
Total Ph.D.s awarded	49		44		42		52		60		43		46		43		33		56	
Occupations of U.S. Ph.D.s:																				
1. Careers in College & Univ.																				
Research/Teaching (subtotal)	34	74%	29	71%	20	53%	33	65%	32	53%	22	51%	28	61%	27	64%	20	62%	32	63%
Teaching/Research positions	11	(24%)	11	(27%)	12	(32%)	20	(39%)	14	(23%)	13	(30%)	11	(24%)	7	(17%)	5	(16%)	10	(20%)
Post-doctoral fellows (subtotal)	23	(50%)	18	(44%)	8	(21%)	13	(25%)	18	(30%)	9	(21%)	17	(37%)	20	(48%)	15	(47%)	22	(43%)
At U.C.	0		2		1		3		4		3		6		4		5		6	
At other U.S. institutions	16		13		7		8		11		6		10		14		10		14	
At foreign institutions	7		3		0		2		3		0		1		2		0		2	
2. Other careers (subtotal)	4	9%	5	12%	3	8%	3	6%	5	8%	6	14%	5	11%	4	10%	1	3%	3	6%
College & Univ. Administration	0		0		0		0		0		0		0		0		0		0	
School teaching and/or admin.	0		0		0		0		0		0		0		0		0		0	
Business & Industry	0		1		0		1		1		1		2		1		1		1	
Government	2		4		2		2		2		2		1		2		0		2	
Non-profit	1		0		1		0		2		3		2		1		0		0	
Self-Employed	0		0		0		0		0		0		0		0		0		0	
Religious/Military Service	1		0		0		0		0		0		0		0		0		0	
3. Pursuing further education	6	13%	4	10%	14	37%	13	25%	20	33%	14	33%	12	26%	11	26%	11	34%	15	29%
4. Unemployed (subtotal)	2	4%	3	7%	0	—	2	4%	3	5%	0	—	0	—	0	—	0	—	0	—
Not seeking	2		1		0		0		0		0		0		0		0		0	
seeking	0		2		0		2		3		0		0		0		0		0	
5. Miscellaneous	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—
6. Unknown	0	—	0	—	1	3%	0	—	0	—	1	2%	1	2%	0	—	0	—	1	2%

TABLE 7: EMPLOYMENT OF PH.D.S: PHYSICAL SCIENCES DIVISION
TEN-YEAR COMPARISON BY OCCUPATION ENTERED

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
Base data:										
Foreign Ph.D.s (temp visa)	N	N	N	N	N	N	N	N	N	N
U.S. Ph.D.s	10	20	18	14	28	9	17	11	17	2
Total Ph.D.s awarded	77	65	75	55	36	38	50	44	45	41
	87	85	93	69	64	47	67	55	62	43
Occupations of U.S. Ph.D.s:										
1. Careers in College & Univ.										
Research/Teaching (subtotal)	65	84%	52	34	23	30	40	32	31	27
Teaching/Research positions	24	(31%)	17	13	10	4	25	16	15	10
Post-doctoral fellows (subtotal)	41	(53%)	35	21	13	26	15	16	16	17
At U.C.	11		4	2	4	6	1	2	0	2
At other U.S. institutions	26		28	16	6	17	14	13	12	11
At foreign institutions	4		3	3	3	3		1	4	4
2. Other careers (subtotal)	11	14%	18	16	11	7	9	9	13	12
College & Univ. Administration	0		0	0	0	0	0	0	0	0
School teaching and/or admin.	0		1	0	0	0	0	0	0	0
Business & Industry	5		10	9	4	3	7	6	9	7
Government	4		6	7	5	2	1	2	4	4
Non-profit	2		1	0	2	2	1	1	0	1
Self-Employed	0		0	0	0	0	0	0	0	0
Religious/Military Service	0		0	0	0	0	0	0	0	0
3. Pursuing further education	0	—	1	0	0	0	1	1	0	0
		2%	1	0	0	0	1	2%	0	—
4. Unemployed (subtotal)	1	1%	3	4	2	0	0	2	1	0
Not seeking	0		0	0	0	0	0	1	0	—
seeking	1		3	4	2	0	0	1	1	—
5. Miscellaneous	0	—	0	0	0	0	0	0	0	0
6. Unknown	0	—	1	1	0	1	0	0	0	2
										5%

Occupations of U.S. Ph.D.s:

1. Careers in College & Univ.
 - Research/Teaching (subtotal)
 - Teaching/Research positions
 - Post-doctoral fellows (subtotal)
 - At U.C.
 - At other U.S. institutions
 - At foreign institutions
2. Other careers (subtotal)
 - College & Univ. Administration
 - School teaching and/or admin.
 - Business & Industry
 - Government
 - Non-profit
 - Self-Employed
 - Religious/Military Service

3. Pursuing further education

4. Unemployed (subtotal)
 - Not seeking
 - seeking

5. Miscellaneous

6. Unknown

graduate students who cannot be expected to reach its standards of intellectual achievement.

4. The University's Ph.D. graduates will face intense competition in the coming decades for the available academic jobs. As faculty members, we must ask whether we are preparing them as effectively as possible to pursue those jobs and occupy them with distinction.

5. It is also essential to recognize that a substantial proportion of the University's Ph.D. graduates are now pursuing non-academic careers, and that this pattern is likely to continue into the future. The faculty must ask what the value of a Ph.D. training is for those students and whether it is educating them appropriately. It must also ask what role the University can and should play in helping students to pursue non-academic careers. This is a particularly important issue in the Humanities and those areas of the Social Sciences Division in which doctoral programs have traditionally prepared graduates overwhelmingly for academic positions in teaching and research.

6. Above all, the University needs to look critically at the goals and assumptions of existing graduate programs. The present situation represents both a challenge and an opportunity for us to ask whether we are doing what we should be doing as effectively as possible. It seems essential at this point that faculty members in the respective departments and Divisions embark upon a process of reevaluation and reconsideration.

Notes

1. George Cornwell Lewis, *An Essay on the Influence of Authority in Matters of Opinion*, 1st ed. (London, 1849), pp. 156.
2. "Report of the Committee on the Problems and Scope of Graduate Work," *The University of Chicago Record*, 7, no. 1 (15 January 1973), p. 7.
3. John A. Centra, "College Enrollment in the 1980s: Projections and Possibilities" (New York: College Entrance Examination Board, 1978); excerpted by Nancy Brocklehurst, *Academe*, 66 (February, 1980), p. 18.
4. Nathan Keyfitz, "The Graduate Schools Lose Their Economic Base" (Center for Population Studies, Harvard University, Working Paper no. 104, February 1978), p. 2.
5. Harvard University, Faculty of Arts and Sciences, *Dean's Report (1977-78)*, p. 3.
6. William Michael Murphy and D. J. R. Bruckner, eds., *The Idea of the University of Chicago* (Chicago, 1976), p. 348.
7. Carnegie Council on Policy Studies in Higher Education, *Three Thousand Futures* (San Francisco, 1980), pp. 37, 153.
8. *Ibid.*, pp. 32-54.
9. Fred Crossland, "Learning to Cope with a Downward Slope," *Change* (July/August), pp. 18, 20-25.
10. Princeton University, *Report of the President (April 1981). Graduate Education in the Arts and Sciences: Prospects for the Future*, pp. 13-14.
11. *Ibid.*, p. 16; appendix, p. 9.
12. *Ibid.*, pp. 19-20.

13. National Research Council, *Summary Report 1979. Doctoral Recipients from United States Universities* (Washington: National Academy of Sciences, 1980), p. 3.

14. "Preliminary Report of the Committee on Enrollment," *The University of Chicago Record*, 14, no. 2 (4 April 1980), p. 58.

Chapter 3: Graduate Education at the University of Chicago

A University must know its own character. It is not enough to say it is dedicated to education and to the culture of intellectual pursuits. It must be able to see itself as a whole in spite of diversity.

President Levi, speaking to the University of Chicago Club (Washington, D.C.), 3 May 1968.¹

Since its creation, the distinctive qualities of the University of Chicago have rested substantially upon the special character of its commitment to graduate education, and the excellence it has been able to sustain as a result in the conduct of this activity. Given the prevailing sense of crisis in graduate education, this Commission believes that it is imperative that the faculty of the University evaluate its commitment to this traditional responsibility, consider the principles and assumptions on which it rests, and assess the means by which it is being pursued. A dramatic period of growth in higher education has ended; an uncertain future lies ahead. The present moment offers an occasion, and requires a sustained effort, to consider fundamental questions of purpose and direction. As faculty members, we must ask ourselves—and be willing to explain to others—what it is we wish to achieve, and why. What is the idea of graduate education at this University? What goals, purposes, and values does it serve? Can these ends be justified in existing conditions? How are they pursued and can they be achieved more effectively? Ultimately, these are questions that must be addressed by the faculty as a whole and by the separate academic units of the University individually. In this section of its report, the Commission offers a discussion of principles, purposes, and goals intended to serve as a basis for wider deliberation among the faculty at large.

A. The Idea of Graduate Education

The University is a community dedicated to the cultivation of intellectual life, and to the transmission of its achievements, norms, and values. It encompasses many different kinds of activity and serves many different purposes, and its health depends upon the creative tensions among these varied activities and goals. It undertakes to create new knowledge, while also preserving and exploring the cultural inheritance of humankind. It strives to advance the power of individual disciplines, while also fostering critical

resistance to exaggerated or particularistic claims on their behalf. It offers technical training in fields of specialization which, at the same time, it seeks constantly to render obsolete. It measures its vigor in the achievements of its individual members, but it draws its strength from a complex web of communal values and collective endeavors.

Graduate education lies at the heart of this web. It constitutes the means by which the academic community perpetuates its existence, maintains its vitality, and defines its future through the training of new generations of teachers, scholars, and researchers. It provides a mechanism by which fundamental knowledge, intellectual creativity, and cultural resources can be preserved and placed at the service of society at large. It offers a context in which individuals can extend their powers of understanding, further their creative abilities, and enhance their capacities to pursue challenging careers and intellectually satisfying goals.

Much of this could, of course, be said of any serious university. But two things have distinguished the University of Chicago ever since its inception: its overriding commitment to the traditions of scholarly research in the pursuit of new knowledge and fuller understanding; and its special preoccupation with issues that transcend—or even call in doubt—the current boundaries of existing academic disciplines and departments. This has been true both of the research activities of this University and of its educational goals. "The work of the student in the future will not be cut off into departments," President Harper insisted in developing his view of a great research university; "on the contrary it will be the study of problems which will lead him into and through many departments of study."² And so long as it maintains this special vision of intellectual life and critical inquiry, the University of Chicago will continue to be an academic resource of national and international significance.

All universities properly so called are concerned with the cultivation of specialized knowledge and the development of technical skills; and by introducing graduate and postdoctoral students to these disciplinary arts, they preserve, transmit, and refine the current body of knowledge in those fields. But while this task is one indispensable component in academic excellence and graduate education alike, it should not be regarded as their essence. Research contributing to the advancement of a particular form of intellectual inquiry marks the completion of graduate education, but does not define its end. This latter lies in the achievement of certain ways of thinking: in the development of analytical independence and conceptual self-consciousness, in the stimulation of creative imagination and critical abilities, in the adoption of habits of disciplined thinking and systematic investigation. It lies in commitment

to the values upon which intellectual endeavor rests: personal honesty and intellectual integrity, the obligation to give full analytical consideration to competing claims and alternative positions, respect for the contributions of others to a common enterprise.

Thus, in contrast to those institutions of higher education whose members are content to work within the accepted divisions of the map of learning, and to transmit to their students the current corpus of disciplinary understanding with refinements and improvements, the University of Chicago has always had its own distinctive view of academic excellence. This view esteems academic disciplines and technical refinements, but not at the expense of idolizing them. It counts mastery of such disciplines and refinements as an essential virtue, but requires that this mastery be matched by, and exposed to, an equally self-critical reflectiveness. By insisting that disciplinary boundaries never be taken for granted at a time when many other universities were turning into so-called multiversities—confederations of departments and divisions with no overriding common purpose or shared intellectual life—this University has sought to retain the quality that President Levi described as "a certain magic of wholeness."³ Staking its claim to exist on the will to remain a single (if at times unwieldy) academic community in which scholarly discourse among colleagues pursuing different paths to knowledge and understanding is constantly open, it has held remarkably close to that ideal.

This distinctive approach to the tasks of the academy has given the University of Chicago its national and international reputation, for good reason. Given the rapidly changing social patterns and technological innovations of the contemporary world, it is not enough to acquire technical excellence in areas of professional expertise alone. There is need also for the capacity to view one's own professional skills with detachment—even, if need be, some irony—since these skills may be in danger of losing their former relevance to the practical and theoretical problems of a new decade. While the "middle managers" in any collective human endeavor or organizational enterprise may often be people of high professional competence in narrowly defined fields, the tasks of leadership in such endeavors thus call equally for the kinds of critical imagination and intelligence that are associated with the traditions of the liberal arts, sciences, and humanities. Given the University of Chicago's longstanding mission to cultivate these traditions, our best graduates have a deserved reputation for combining professional excellence with a healthy capacity to see technical problems in their larger contexts, and to rise above the limitations of "conventional wisdom."

How can these critical attitudes to problem posing

and professional skills be effectively preserved and transmitted? That is one of the central questions we have to face in considering the future direction of graduate education at this University.

The aim of graduate education should from this point of view be to prepare individuals to ask questions and formulate problems critical to our understanding across a broad range of human activities. It will succeed to the extent that it enables its recipients not simply to solve given problems but to identify and create new questions; it will fail to the extent that it is merely training in a narrow specialization. Thus it is our claim for graduate education, properly conceived, that it constitutes a true education, not simply an advanced form of professional training. This kind of education is best accomplished in an environment that combines a broad intellectual discipline with an emphasis upon research as the principal activity. Such an assertion may appear to go against the previous argument. Research (we are told) necessarily means technical specialization, the deliberate narrowing of the focus of attention to more particular objects of investigation; and doctoral dissertation research, in particular, has often been criticized as excessively narrow. The traditional requirement that a doctoral dissertation represent "a contribution to knowledge" has been decried as leading in practice to the legitimation of much busywork contributing neither to the growth of human understanding nor to that of its author. In what respects, we are asked, does this activity constitute an education?

It is doubtless easy to find doctoral research that seems narrow and trivial. Every discipline surely has its equivalent of the thesis in English satirized in words that should haunt all dissertation supervisors:

Is there a minor poet by others missed
Dull sermonizer or maudlin novelist
Some corpse to build a reputation on?
A thesis swallows them and they are gone.⁴

But research is broad or narrow not in relation to the specific object studied, in and of itself, but in the manner in which it is studied. The broadest issues can be treated in a trivial, technical, or merely conventionalized way; the narrowest or most obscure phenomenon can be addressed in a manner that opens up critical questions and transforms our understanding of the nature of the relevant disciplines. Knowledge is not to be conceived as an inert mass to which each researcher must add a new chunk, no matter how tiny. Nor is it a preestablished cosmic crossword puzzle with an ever-diminishing number of blanks left to be filled in by the individual players. Problems do not exist ready-made; nor do they come presorted according to any guaranteed scale of necessary importance. Their formulation involves intellectual risks and requires a

disciplined imagination. They are created in the course of the research activity itself and significant only to the extent that they advance it. The ability to formulate truly significant problems therefore grows with a self-conscious understanding of the nature of the intellectual enterprise involved; with a critical grasp of the way in which it has been elaborated, the assumptions upon which it rests, and the rules by which it proceeds; and with an imaginative sense of its possibilities of development and potential for transformation. In this, as in other domains of creative endeavor, the capacity for excellence flows from a critical, self-conscious understanding of the nature of the activity itself.

There is no easy recipe for this kind of education. But we believe that it is most likely to occur in an institution that has maintained a tradition of intellectual breadth and flexibility in the pursuit of significant problems, a tension between disciplinary and extra-disciplinary impulses, and a research milieu in which the line between teaching and research is deliberately blurred.

The first of these demands—intellectual breadth and flexibility in the pursuit of significant problems—was reaffirmed in 1972, in the *Report of the Committee on the Problems and Scope of Graduate Work*:

The function of a university and its graduate education is not only to bring students to a mastery of available information in a field or to a mastery of the techniques that have been used in solving problems; the function is to join information, method, and attitude together in the recognition that problems do not present themselves ready-made and that inquiry and research depend on finding them and analyzing them into appropriate concepts and procedures which open the way to new discoveries.⁵

In considering our current programs of study at the graduate level, we must be prepared to ask ourselves how effectively we are now implementing that ideal and whether there are ways in which it may be more closely approached in practice.

The second of these characteristics, a creative tension between disciplinary and extra-disciplinary concerns, has been cultivated at the University of Chicago over many decades and with remarkable success. It forms a central feature of what the University stands for in the tradition of American higher education. This kind of tension goes beyond the more or less mechanical efforts to link neighboring disciplines that often passes for "interdisciplinary" work. It involves fostering the urge to advance particular disciplinary claims and methods of inquiry as far and as vigorously as possible—thereby testing them to their theoretical limits—while still maintaining the contrary urge to subvert all disciplinary claims to hegemony by subjecting them to critical supra-disciplinary scrutiny and radical cross-disciplinary challenge. This critical self-

consciousness regarding the nature of the disciplines is not a quality we can afford to lose.

The third of these characteristics, the blurring of the line between the creation of knowledge and its transmission through the active participation of teacher and student in the practice of research, lies at the heart of our tradition as a research university. In graduate education, learning and creating new knowledge are so intertwined that they cannot be separated. It is for this reason that the common characterization of graduate study as a form of apprenticeship remains apt: as in the familiar mechanical arts, an apprentice learns by doing and the relationship between master and novice is all important. A successful program of graduate education recognizes this feature of the educational process and blurs the distinction between faculty member and student for the purpose of creating a collegial spirit. There are, of course, senior and junior colleagues in any such endeavor; but there are also partial and sometimes complete role inversions, as student progresses from novice to master of the art, and teacher learns from student.

It follows that the relationship between student and teacher is most rewarding at the graduate level, and the consequent education most fruitful, in an environment where the student is challenged to pursue a problem that he or she recognizes as significant for the advancement of knowledge; is expected to make a contribution to the study of that problem and encouraged to believe that he or she has the ability to do so; and is intellectually and emotionally supported in a continuous, collegial dialog of inquiry and investigation. The precise structure and organization of this kind of environment will naturally vary among the different parts of the University, according to the different fields of intellectual endeavor that are being cultivated. But the University's success as a center of graduate education depends upon its achievement and continued preservation in every field in which its faculty is engaged.

B. The Ends of Graduate Education

Having stated the idea of graduate education at the University of Chicago as we understand it in general terms, we wish now to review the various ends towards which it may be directed, considering them in the light of current national conditions, the University's own institutional goals, and the needs and interests of its students. We begin with the more traditional activities for which graduate school has been regarded as the preparation—research and teaching at the university and college level—before turning to the question of the relationship between graduate education and non-academic careers.

Advancing the Research Tradition

Graduate education as we know it in the United States

was created to advance the pursuit of knowledge and understanding by training successive generations of scientists and scholars. That goal was never more enthusiastically embraced than by the early members of the faculty assembled by William Rainey Harper at the University of Chicago. The sociologist Albion Small spoke for them with a religious zeal in a characteristic proclamation of 1905:

The prime duty of everyone connected with our graduate schools is daily to renew the vow of allegiance to research ideals. . . . The first commandment with promise for graduate schools is: Remember the research ideal, to keep it holy!⁶

In the seventy-five years since that call, scholarly research in this country has achieved a degree of pre-eminence beyond the dreams of early pioneers of graduate education. Commitment to advancing the research tradition, supported by the resources of a free society, has yielded a rich harvest in the discovery of new knowledge and the creation of new fields of inquiry, in the systematic ways in which we learn from human experience and address the natural universe, in the enlargement of human capacities and understanding in every field of endeavor. The work of the University of Chicago is writ large in the history of these achievements.

As an international center of research and learning, the University of Chicago is founded on the proposition that the free advancement of knowledge and understanding is a fundamental good, in and of itself. As a private institution, it is sustained by the belief that its continued existence under conditions that assure its institutional autonomy and intellectual integrity can be justified only by a claim to outstanding achievement in the pursuit of that goal. As a modern university, it draws upon human energies and social resources in the conviction that it exercises a vital role and responsibility in the process by which cognitive capacities are expanded and placed in the service of society at large. A society like our own cannot maintain its strength and vitality, enhance its creative capacities, or pursue the goals of civilized life, without a vigorous tradition of research and scholarship able to sustain the flow of new ideas, critical thinking, and disciplined intelligence. In this respect, we reiterate the claim of an earlier committee on graduate education at the University of Chicago:

[the] character of the University has a significance which extends beyond the apparently limited questions of graduate education and research, even though the problems of the University appear only as such, because the perception and resolution of the most significant issues of our time depend, in large degree, on the formulation of fresh questions, the acquisition of new knowledge, and the advancement of self-directed education.⁷

It is, of course, true that a substantial portion of the

research conducted in this country no longer occurs within the confines of the universities. Government and corporate laboratories in the natural sciences, institutional research agencies and private research groups in the social sciences, libraries and museums in the humanities, make distinct contributions to the common fund of knowledge and understanding to advance their own goals and purposes. More generally, knowledge plays such a powerful instrumental role in modern society that the activities of inquiry and investigation are necessarily diffused widely throughout the social system. But a research university like our own nevertheless exercises a critical and quite distinctive responsibility. It serves as a principal center of fundamental research in the arts and sciences, dedicated to a pursuit of principles of understanding free of instrumental constraints. In doing so, it prepares the future scholars and researchers whose knowledge, intelligence, and imagination must continue to expand our ability to understand and shape the world in which we live, whether they go on to pursue their research careers within the university context or outside it.

These two activities are intimately related. The advance of knowledge and understanding, as of their potential to enhance human life, rests essentially upon the constant search for conceptual principles and imaginative insights that transcend and transform accepted truths. The continuation of that search requires that research universities attract some of the best minds of each generation to the challenge of research and scholarship, readying them to advance beyond the frontiers before which we now stand. Conversely, the fruitful applications of fundamental knowledge to the more immediate issues upon which it may be brought to bear depend upon an understanding of the relevant principles of knowledge in themselves, and a disciplined ability to identify questions and solve particular problems in the light of them. These are the capacities developed by individuals trained in the practice of scholarly research. For these reasons, graduate education in the arts and sciences remains critical to our human destiny. Unless its vitality can be maintained at the highest level, we face the danger of intellectual stagnation emphasized by Tocqueville many years ago:

If the light by which we are guided is ever extinguished, it will dwindle by degrees, and expire of itself. By dint of close adherence to mere applications, principles would be lost sight of; and when the principles were wholly forgotten, the methods derived from them would be ill pursued. New methods could no longer be invented and men would continue, without intelligence and without art, to apply scientific processes no longer understood.⁸

In the decades following World War II, the ability of this and other leading research universities in the United States to pursue these fundamental goals was fostered by increased public commitment to the funding of basic research, vigorous support for graduate

education from the principal private foundations, and a pattern of demographic growth that brought expansion throughout the system of higher education generally. The greater availability of fellowships for graduate study and improved prospects for academic employment attracted students in unprecedented numbers; research and scholarship were supported in ways that established American leadership across a broad range of academic disciplines.

Since 1970, these conditions have changed. The demographic basis of higher education has shifted radically in the past decade, in ways that have been considered in an earlier chapter of this report. As a result, diminishing academic job prospects have discouraged many able potential students from embarking upon a graduate education in the arts and sciences. At the same time, government funding for basic research has failed to keep pace with inflation. As reported by the Committee on Government Funding of Research and Education (Sachs Committee) in 1980, federal obligations for the support of academic science increased by about 48 percent between 1971 and 1977, as compared with a growth of 114 percent in total federal obligations and of 58 percent in inflation as measured by the GNP deflator. Within the same period, fellowship and training funds for academic science decreased markedly, by almost 52 percent.⁹ This latter figure is only one indication of the serious change in the pattern of fellowship support in the past decade. In 1970, the National Science Foundation awarded 1,198 fellowships to students beginning graduate work in the natural and social sciences; by 1981, the number of new fellowships awarded had fallen to 450. In 1971, as many as a thousand talented students received fellowships to begin doctoral study in the arts and sciences from Woodrow Wilson, Ford Foundation, and Danforth Foundation fellowship programs; today none of those fellowship programs remains in existence.* In a period during which the costs of graduate education have been rising sharply, availability of fellowship support for the preparation of a new generation of scholars and researchers has been sharply curtailed in many fields.

If public support for scholarly research in the arts and sciences has failed to keep pace with inflation in the 1970s there is a considerable danger that it will suffer still further erosion in the fight against inflation in the 1980s. Current reductions in the budget of the National Science Foundation will have serious implications, par-

*The recent announcement of a new five-year program of Mellon Fellowships in the Humanities therefore represents a significant affirmation of the continuing importance of fellowship support for graduate study. This program, supported by the Andrew W. Mellon Foundation and administered by the Woodrow Wilson National Fellowship Foundation, will offer 100 to 125 fellowships per year beginning in 1983-84.

ticularly for the behavioral and social sciences that were designated by budgetary officials for special pruning. The shrinking ability of the National Endowment for the Humanities to support advanced research will have grave consequences in many fields of humanistic scholarship. Diminution in research training funds offered by the National Institutes of Health will threaten the continuity of research training in the biological sciences. Restrictions in the Guaranteed Student Loan Program will place still greater financial burden on those graduate students financing all or part of their education in many fields. Less tangibly, we may be witnessing a shift in the emphasis of government support from basic towards more applied research. Such a shift could be potentially more serious in its long-run implications for the advancement of knowledge than any particular changes in federal support for research and scholarship taken individually.

How should the University of Chicago respond to the challenge of these developments? Clearly, it has a responsibility to keep before the public eye the necessity for continuity in the practice of fundamental research in the arts and sciences, carried out at the highest level of excellence. It should therefore join with other leading research universities whenever possible to insist upon the importance of fundamental research as a national priority, emphasizing that the preservation of outstanding programs of graduate study is a condition of vitality in the sustained search for new knowledge and understanding, and of the translation of the fruits of that search into the service of society at large. At the same time, it should continue its most active efforts to secure the beneficence of corporate, foundation, and individual donors in support of its own distinctive vision of intellectual excellence.

By and large, responsibilities such as these are entrusted to the President and other administrative officers of the University. The faculty has the still graver responsibility of preserving the vitality of the University's special tradition of research and scholarship, insisting upon the achievement of its standards of scholarly excellence in every field of intellectual endeavor in which we are engaged. As faculty members, we must identify the strengths and weaknesses of our current efforts to advance the tradition of research and scholarship, in order to ensure that we are making the most effective use of our intellectual and material resources. We must consider whether the graduate education we now offer is most appropriately conceived and organized to prepare the next generation of scholars and researchers in fields of study that they will be called upon to redefine and reshape in the coming decades. We must ask whether Divisional and departmental structures still correspond to intellectual practices or requirements, whether disciplinary boundaries are

shifting in ways that suggest the need for new institutional arrangements, whether current organizational habits obscure or impede the development of new forms of inquiry and understanding.

In the course of the present report, this Commission will present a number of particular arguments and proposals related to these matters, as we have come to perceive them in the four Divisions. More generally, we regard it as imperative that each faculty body evaluate its present purposes and future goals, its strengths and weaknesses in teaching and research, the opportunities and problems it anticipates in the coming years. To the extent that these considerations are rigorous and realistic, they may be far from easy and will certainly be time-consuming. Nevertheless, we regard this process of self-evaluation as essential now if the University is going to maintain its distinctive intellectual vitality in the uncertain years to come. *We recommend that each department or committee initiate an evaluation of its graduate programs in response to the questions raised and the recommendations offered by this Commission.*

We also note with dismay that earlier procedures providing for the regular evaluation of departments by visiting review committees have been neglected in recent years. We regard systematic visits by such committees—preceded by an appropriate self-study on the part of the department visited, and followed by responsive consideration of the ensuing report both by the department and the University administration—as an indispensable mechanism for the preservation of scholarly excellence, perhaps all the more important in a period of comparative constraint in higher education than in one of relatively steady growth. Accordingly, *we recommend the institution of a regular review procedure providing for the evaluation of each department (or group of departments), at least every ten years, by a visiting committee composed equally of distinguished scholars from outside the University and members of our own faculty drawn from other departments and Divisions within the University. Since visits of this kind have been infrequent in the recent past, we also recommend that they be accomplished, to begin with, according to an accelerated cycle (three to five years).* Departments reviewed early in the process may then expect their response to this report to serve as a point of departure for the review; those visited later on will use it as a reference point to measure progress.

Preparing College and University Teachers

In the course of this century, the Ph.D. has become the customary prerequisite for a career in college and university teaching in this country. Academic research has been combined with college and university teaching rather than confined to specialized research

academies or institutes; undergraduate, as well as graduate, teaching has been largely entrusted to persons with the research training and intellectual formation represented by the Ph.D. degree. This development has not occurred without more or less continuous criticism. Some critics have insisted that the research training associated with the Ph.D. does not prepare its recipients for undergraduate teaching and might even be inimical to their subsequent performance as college teachers. Others have argued that the research ideals which graduate education was established to serve have themselves been perverted by the degeneration of the Ph.D. into vocational training. All have agreed that what William James early characterized as "the Ph.D. octopus" has taken hold as preparation for college teaching without being specifically designed for that purpose.

In the 1950s, as it became clear that the nation faced a rapidly growing demand for college teachers, arguments that the Ph.D. was inadequately conceived to meet this demand became commonplace. Frequently, these arguments issued in proposals for a new degree that would offer a more directly appropriate training for the college teacher, but despite a number of experiments to this effect no such degree has gained wide recognition. Doubtless, academic inertia has played its part in this matter. But the failure to establish a more specifically vocational degree for college teachers also suggests widespread acceptance of the position that the ideal of research training for which the Ph.D. stands remains the most valuable general preparation for an effective teaching career because it develops the habits of mind and scholarly inquiry that alone can keep teaching alive in the long run.

This argument does not represent a defense of all that passes for graduate education as an appropriate preparation for a teaching career: much of it is narrow, unimaginative and merely technical. Nor does it imply that what is regarded as indispensable for such a career—the research training—need not be supplemented in other ways, for example by direct teaching experience. We do claim, however, that the kind of graduate education to which we at the University of Chicago aspire—the kind that opens up the mind to creative, disciplined inquiry, critically conscious of the nature of the endeavor to which it is contributing—must be considered particularly valuable preparation for a teaching career at the college and university level. In this respect, our goal is the "genuinely philosophical" degree so persuasively described by John Passmore as the ideal preparation for the college teacher:

the genuinely philosophical degree should enable and encourage the graduate to look critically at the subject he is going to teach, at its structure, its presumptions, its place in human culture. It should help him to understand it as a

growing subject, to shake himself free from the notion that it must always be as it now is, to prepare him to spend the rest of his life learning more about it, as it progresses or retrogresses. Such a degree should concentrate at once on the frontiers of the chosen subject, as it advances into the darkness, and on its boundaries—its relationships, actual and potential, to other subjects. So it would at once prepare the teacher for future learning, by making it plain to him where the obscurities still lie, and enable him more readily to sympathize with the intellectual problems of his colleagues, to talk with them and with their students about problems which cross subject boundaries.¹⁰

In holding to this ideal of graduate education, we must also recognize that those of our students who plan to enter university and college teaching are likely to face intensive competition for the available positions during the coming decade. Allowing for the possibility of a slight temporary recovery in the late 1980s, the commonly accepted projections suggest that the demand for new faculty will not begin to grow steadily again until the 1990s. The uncertainties inherent in these projections have already been emphasized; and it would be misleading to suggest that there will be no teaching positions available. There will doubtless be considerable variation from field to field. Nevertheless, it is imperative that the faculty of this University ensure that its students are prepared as effectively as possible to pursue those academic jobs that will become available and to occupy them with distinction.

How should this be accomplished? First, we should maintain the highest intellectual standards in any of the graduate programs we offer: excellence will continue to be the rarest commodity in the academic market place. Second, in the course of the process of self-evaluation recommended in the preceding section of this report, we should seek to identify those programs and areas in which the period of academic expansion has fostered a drift towards specialization that is neither intellectually defensible nor competitively advantageous for individual students. In a period of relatively diminished resources, colleges and universities making fewer new appointments to an aging faculty will not be content with narrow competence. They will look for teachers and scholars able to communicate a sense for the shifting boundaries of knowledge, to place their own disciplinary concerns in a broader intellectual context, to pursue ideas and issues that will cut across existing fields and challenge conventional ways of thinking. In some areas of the humanities and social sciences, particularly, we are already beginning to see far broader job descriptions than we have become accustomed to; and the signs of a revival of interest in general education at the undergraduate level suggest that this tendency may continue to grow.

Third, we should seek to provide increased opportunities for our graduate students to obtain teaching experience. Such experience is valuable for a number of

reasons. As teachers, we know that learning and teaching are intimately related. The teacher creates and recreates the subject taught in the act of teaching it: it becomes one's own in the process of being presented to others. A graduate student given the opportunity to teach is obliged to choose what is fundamental and what accidental in the relevant field of study, to decide what problems are most critical for the understanding of the subject at hand and how the issues they raise can be developed most clearly. The result is an enhanced understanding of the field of study as a whole, and a keener awareness of intellectual inquiry as an open activity constantly changed and reshaped by decisions as to what is important. In addition, the opportunity to participate in teaching develops a graduate student's ability to communicate with others, to engage their views without diminishing their personal worth, to foster their concerted efforts in pursuit of a common goal. These are not qualities to be taken for granted. They need development and cultivation in an appropriate context. In providing such a context, we will enhance our students' capacities to communicate their understanding of goals, principles, and values effectively, whether in the classroom or in other domains of human endeavor. We will also be strengthening their claim to compete for teaching positions.

Discussion with faculty and students in many fields suggests that teaching experience is a matter of particular concern in a difficult academic job market, and that failure to provide students with appropriate teaching opportunities may place them at a significant disadvantage in competing for available positions. In some fields, our students are still able to obtain part-time teaching jobs in local colleges and universities; but these are becoming more difficult to find. We must therefore ask what teaching opportunities we are able and willing to provide at our own University.

This Commission recognizes, as did the committee reporting to the Dean of the College in 1979 concerning the use of graduate students in the College, that "any mention of using graduate students as teachers conjures up visions of the large scale TA programs found at many large universities, programs notorious for their shortcomings and abuses."¹¹ We must therefore emphasize that we are not advocating the introduction of such a program at the University of Chicago. Teaching assistantships, as commonly understood, have two principal features: they link the financial support of graduate students systematically to the performance of particular teaching obligations; and in so doing they reduce the involvement of full-time faculty necessary to teach relatively large numbers of undergraduate students. Neither of these features seems necessary or appropriate at this University.

We believe that the general question of graduate stu-

dent teaching should be considered on its educational merits, quite apart from the issue of financial support. Both teaching experience and financial support are desirable, but we do not see any necessary logic that requires the University to link the two in the form usually found in the conventional teaching assistantship. Questions of remuneration are important, but they should be subordinated to consideration of the pedagogical issues involved in graduate student teaching.

Nor does the Commission think that increasing opportunities for graduate students to teach should be approached as a means of reducing the commitment of faculty members to teaching at the undergraduate level. This University has a relatively small college, with a tradition that emphasizes the importance of the opportunities we offer undergraduates to study with members of a distinguished faculty. That tradition has been strengthened in recent years by concerted efforts to establish the norm of joint faculty appointment in the College and the four Divisions. As a result, a greater proportion of the faculty than ever before is now regularly engaged in teaching courses that range from the Common Core to the most advanced graduate seminars. As faculty members, we are therefore in a position to relate elements of our graduate and undergraduate teaching activities in ways that could enhance the intellectual liveliness and quality of both. Thus we should not ask how graduate student teachers might replace faculty members in the classroom, but how they might participate in our teaching efforts in ways that would improve the overall quality of our undergraduate education. Nor should we expect a reduction of faculty teaching responsibilities to accrue from any such participation. On the contrary, the creation of teaching contexts in which graduate students may appropriately contribute to the education of undergraduates, and the responsible supervision of their efforts to do so, will place greater demands on faculty energies rather than less.

Despite the increased burden that this may entail, we think it imperative that faculty bodies consider imaginative new ways to provide teaching opportunities for graduate students that will both add to the stimulation of our graduate programs and enrich the quality of our undergraduate education. In the past, there has been a presumption in the departments that proposals of this kind would founder on hostility in the College towards the idea of graduate student participation in undergraduate teaching. But a faculty that is largely joint between the College and the Divisions should not find it impossible to combine needs and interests at the graduate and undergraduate levels in ways that are fruitful for both. Indeed, a basis for doing so has already been offered in the *Report and Recommendations to the Dean of the College concerning the Use of*

Graduate Students in the College presented by the Hummel Committee in 1979. The committee acknowledged that graduate students do now teach in the College in a variety of capacities and advocated the foundation of clearer guidelines for the programs in which they are used and the procedures by which they are selected. It recognized that there are circumstances in which "carefully selected graduate students with adequate supervision and guidance are particularly well suited to provide instruction of higher quality" than regular faculty members. And it specifically called for faculty consideration of "innovative ways in which graduate students might enhance instruction in the College."¹² In response to the Hummel Committee report, the Dean of the College has already created an advisory committee on the use of graduate students as teachers in the College. *We recommend that a committee of this kind be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creative use of graduate students in undergraduate teaching.*

It would, however, be a failure of imagination to think of opportunities to prepare graduate students for teaching as existing only in the College. There are a number of other contexts in which such opportunities might also be extended or created. Seminars on teaching, of the kind that might review major text books in a disciplinary field or consider more explicitly the pedagogical choices to be made by a teacher presenting various subjects, might provide one way of taking the teaching enterprise more seriously. Teaching in the University's Continuing Education programs might offer further opportunities to engage in it. Teaching at the graduate level might present another such context. The teaching of languages appears to be an obvious example in the latter respect. As the general level of language preparation in the country declines, the University must expect fewer graduate students to enter with an adequate command of the languages they may need; more advanced students could perhaps be more effectively employed than they are now in teaching such languages to beginning graduate students. (We return to this matter in discussing the idea of a Language Institute in Chapter 5.)

Advanced graduate students also develop knowledge and skills in the course of their research that may be more up-to-date in particular respects than that of their teachers, and which could be both valuable and stimulating if conveyed to their less advanced fellow students. Historians at the dissertation stage returning from their research work, or anthropologists returning from their field work—to offer some obvious examples—could well be invited to present a series of lectures on their findings, the presentation of which could aid them in the development of their own work and be

of considerable interest to students and faculty in related fields. One obvious way to foster such activity would be to create prize lectureships to be awarded to outstanding students. These lectureships would offer their recipients the opportunity to present a brief series of lectures on their research under the auspices of their department or Division, thereby providing a measure of distinction to the best students while also offering an opportunity to develop teaching skills. It will, of course, be objected that this arrangement will hardly benefit more than a few students. But it may be more fruitful, and more appropriate to the University's traditions, for faculty in different fields to develop a variety of particular opportunities of this kind than to imagine a general program applicable to all graduate students across the board. *We therefore urge a consideration of arrangements that might also provide opportunities for graduate students to gain teaching experience in other contexts than undergraduate teaching in the College.*

Educating for Non-Academic Careers

In seeking ways to prepare graduate students at this University more effectively to pursue academic teaching careers with distinction, it is important not to lose sight of the fact that a substantial proportion of those graduate students are now entering other kinds of careers and are likely to continue to do so in the future. In those areas of the natural sciences where research careers have traditionally been pursued in non-university as well as university settings, this has always been the case. But in the humanities and many areas of the social sciences, we now see a situation that is very different from the traditional one.

One way of responding to this situation would be to reduce enrollments drastically in those fields in which graduate training has prepared students predominately for academic careers. This would mean adjusting our graduate enrollments to the projected demand for academic positions, admitting only those students we could expect to place in the traditional academic fields, or whose training would give them a skill immediately marketable in the non-academic world. In all probability, it would mean reducing faculty numbers considerably, suspending graduate training completely in some fields, and seeking extraordinary outside support for the maintenance of those in which we can legitimately claim to be unique. Those of our colleagues who favor this choice present it as both the most realistic and the most moral: the most realistic, in that it would preserve the essential character of the University in the face of adverse circumstances; the most moral, in that it avoids the human cost of training students for positions that no longer exist.

But is this realism altogether realistic? Graduate education is a long-term investment, both for the in-

dividual graduate student and for the University. A strategy of planned shrinkage assumes that we can predict the academic market five or ten years from now accurately enough to determine our prospective share in the number of academic jobs in a great variety of fields. Such accuracy is unlikely, and would in any case be a guide only on the assumption that the effects of a reduction in the number of academic jobs should be shared equally among all graduate schools. This is not an assumption we should be willing to accept. It is not simply a matter of self-interest for an institution like our own to make every effort to attract a larger share of a diminishing pool of qualified potential students, or to insist that the education we have to offer is superior to that now provided in many institutions that entered the field of graduate education in the expansionary years of the 1960s. It is not necessarily practical to dismantle valuable resources of scholarly inquiry, which would take many years to rebuild, in response to relatively short-term constraints. Nor is it mere conservatism to argue that the life of a first-rate university depends upon the continued cultivation of vigor and creativity across a broad range of the arts and sciences, not simply upon intensive exploration of critical problems within specialized fields. American intellectual preeminence has been realized in large part by the creation and preservation of such resources.

The strategy of planned shrinkage also assumes that we can identify from the outset those graduate students who will be among the very best scholars and researchers. In most fields, our ability to predict is simply not strong enough to do this. A recent review of efforts to measure the relationship between criteria of selection for graduate school and scholarly achievement, in graduate school and beyond, reaches the conclusion that "above a certain minimum threshold, neither GRE scores or college grades give clear signals about who will be the stars in graduate school or, more importantly, who will be the stars in academic careers five or ten years out."¹³ Such considerations suggest that a policy of drastically reducing graduate enrollment might well exclude some of the potentially most able students, without necessarily ensuring eventual academic employment for those admitted.

The alternative to the strategy of planned shrinkage is to consider bold initiatives that reconceptualize graduate education more generally. Our situation is not unique. There is no reason why imaginative formulations should speak only to our own condition rather than that of graduate education nationally. Other leading universities face similar problems. Why can we not use the occasion of crisis to imagine initiatives that the comforts of the old normalcy did not inspire? If we regard our doctoral programs in many fields as being

exclusively a vocational preparation for prospective college teachers and academic researchers, we cannot reasonably expect that we shall continue to attract more than a fraction of the present graduate student population in many fields, or succeed in holding them until the completion of the Ph.D. degree. Alternatively, we can ask ourselves whether the education we offer is appropriate for students entering non-academic careers, and in what ways it can be made more effective for such purposes. We can then seek to create the conditions under which we can justifiably claim to educate students appropriately for non-academic careers and encourage them to approach those careers as appropriate opportunities for the fulfillment of their intellectual aspirations and individual goals. In that case, we can reasonably hope to make graduate work in the four Divisions initially more attractive, and also provide graduate students with stronger reasons to complete their graduate work.

In considering the relationship between graduate education and non-academic careers, it might be useful once again to recall that the Ph.D. was developed as training in research. It was not conceived in essence as vocational training for academic teaching, even though that has become one of its principal functions in the course of the century. In arguing for the importance of the research training for which the Ph.D. stands as the most valuable general preparation for an effective teaching career, we need not forget that the link between research and teaching careers was forged historically at least in part as a result of the production of more Ph.D. graduates than could be supported by the activity of research alone. The suggestion that we at the University of Chicago might argue for a broader conception of graduate education—a conception that would combine the preparation of future academic teachers and researchers with the education of those who will find intellectual challenge and satisfying use of their abilities and skills in non-academic fields of endeavor—does not therefore imply watering down the Ph.D. by making it a more vocational or professional qualification. Rather it implies making it less exclusively a vocational degree for academic teachers, and more explicitly a training in the analytical methods of different disciplines of a kind that is relevant either to an academic or a non-academic career.

What can a well-educated Ph.D. graduate offer potential employers in the non-academic world? What is it that such employers most need and value? One corporate manager surely pointed to the essential consideration in acknowledging that "being able clearly to identify the problem is probably the most difficult task.... It involves knowing what the right questions are."¹⁴ The graduate student is trained above all to see

the problems that are most significant for the advancement of the enterprise upon which he or she is engaged; to look beyond everyday experience and conventional wisdom to discern more basic patterns and more general concerns; to evaluate accepted techniques and practices in the light of their fundamental purposes. Along with the ability to "see" the problem in a complex human endeavor, Ph.D. training also develops skills that translate this ability into effective performance. The ability to frame and carry out sustained investigation and to analyze what is relevant in the findings; the ability to present the results of that investigation clearly and convincingly in written form; the ability to communicate with others in a way that relates particular concerns effectively to a more general enterprise: these are the foundations of a disciplined competence that will remain a scarce resource in many domains of human activity. In developing abilities of this kind, graduate education also inculcates certain fundamental attitudes and values. Pride in individual achievement, and the confidence justifiably earned in the completion of a demanding intellectual task, rest on conditions of respect for the contributions of others in a common enterprise, on canons of personal honesty and intellectual integrity, on the obligation to give full analytical consideration to competing claims and positions. These values are not relevant to scholarly life alone.

If this conception of graduate education can be justified in principle, then we must ask further how it might be more effectively implemented in practice at the University of Chicago. This Commission has considered several alternative ways of proceeding towards such a goal, but we do not regard them as equally appropriate to the goals and purposes we consider essential.

Alternative 1: Post Ph.D. Training. Perhaps the most obvious way of proceeding would be to establish a program at the University of Chicago designed specifically to supplement the training of graduate students who are unable upon completion of their degree program to secure traditional academic positions. Programs of this kind have been created at a number of institutions, often in conjunction with a Business School. They usually offer a relatively brief introduction to particular skills of value in the corporate world, combined with professional advice on job seeking and a placement service that helps them make contact with potential employers. The most successful of these programs are highly selective in their choice of Ph.D. graduates: we suspect that their success owes more to the high quality of the individuals they recruit and draw to the attention of potential employers than to any added training they offer in the process. *Without denying the utility of such*

programs in a period of crisis in academic employment, we recommend against creating one at the University of Chicago. We do not think that students should be encouraged to wait until the completion of their graduate careers to consider and prepare for the possibility of non-academic employment.

On the contrary, the University should foster more open discussion of the relationship between academic and non-academic career possibilities from the very beginning, encouraging students to consider the variety of career goals that may be open to them, and establishing clear points in the organization of academic programs at which they can evaluate their progress and review their options. It is not necessary to diminish the value and importance of the academic careers to which many of our students remain firmly committed, or to belittle their aspirations, in order to suggest that non-academic career outcomes need not be a cause for grief, or that intellectual life does not stop at the walls of the academy. We should not allow a student to think that he or she is the one who will get an academic job whatever the odds, only to feel betrayed at the moment of graduation if such a job fails to materialize.

Multiple career options therefore need to be made more clearly visible from the very beginning of students' programs of study. They need to be kept visible during students' progress in graduate school, by counseling and career workshops that will encourage students to define alternative career goals and develop a flexible range of intellectual capabilities; by opportunities for internships in non-academic settings that will allow for exploration of potential career possibilities and the acquisition of experiences and capabilities appropriate to them; through departmental and Divisional networks and contacts with alumni in non-academic fields who can provide advice and help. *We regard an expanded role for the Career Counseling and Placement Office, sensitive to the differing needs and interests in the four Divisions, as imperative in this respect.* We also believe that several of the activities now carried out by the Center for Continuing Education may offer fuller opportunities than have yet been realized for graduate students to develop their capacity to bring their knowledge and training to bear upon issues and problems presented in a non-academic context.

Alternative 2: "Double-Track" Arrangements. A second way of proceeding, which has the virtue of bringing the possibility of non-academic careers to students' attention from the beginning of their graduate education, would be to establish a "two-track" (or "forking track") system of graduate education. One track would concentrate on equipping the prospective Ph.D. for academic teaching and research; the other

would offer a training suitable for students planning to enter non-academic careers. Provided there were broad common introductory training, and plenty of opportunities for students to move between the strictly vocational (academic) track and the more broadly educational (liberal) track, such an arrangement would have the great merit of postponing the moment at which the graduate student had to choose finally between the academic and the non-academic route.

The difficulty in developing this kind of program lies in defining precisely the difference that would obtain between the academic and non-academic "track." Would the non-academic track be more general in its approach to the field of study and less narrowly specialized in the scope of the topics chosen for the dissertation? We have already argued that, even from the point of view of training teachers, scholars, and researchers, we should broaden the graduate training we offer; that whether a dissertation topic is "narrow" or "broad" lies less in the specific nature of the topic *per se* than in the conception of the problem which makes it worthwhile. In this respect, there seems little basis for distinguishing between the two possible tracks in graduate education at the University of Chicago. Would the non-academic track, on the other hand, be more "technical" in developing particular skills that are more immediately applicable in the non-academic contexts, while the academic track remained more "theoretical" in its orientation? This kind of distinction might well support a clearer demarcation between an initial M.A. level training, which would teach technical disciplinary concepts and skills necessary for the academic and non-academic practice of that discipline, and a more theoretically advanced doctoral training. But it does not seem an adequate basis for distinguishing between programs at the doctoral level. *We do not recommend the creation of such "double-track" programs.*

Alternative 3: Breadth and Flexibility in Graduate Programs. A third way of proceeding would be to recognize that a more general conception of graduate education—for which we have already argued as the most appropriate preparation for future academic teachers and researchers—is also likely to provide the most fitting preparation for students entering non-academic careers. The University's traditions of breadth and flexibility can surely serve it well in this respect.

Opportunities for broad, flexible intellectual training already exist within a number of degree programs. But there may well be areas in which such opportunities need to be more explicitly developed and set forth. If European politics and institutions were studied alongside European languages and literature, for example,

the resulting program of study could prepare not only scholars and teachers of greater breadth and sophistication, but better diplomats and journalists and more effective executives in international organizations, businesses, or banks with European interests. If graduate students in English were invited to consider the rhetoric of politics, of economics, of business, or of the law—to offer another example—they would find the challenge of opening up a new intellectual domain no less stimulating than it would be valuable in developing abilities and capabilities important in teaching and in many non-academic endeavors. It is not our intention to recommend a proliferation of special-purpose graduate programs geared to specific non-academic careers. On the contrary, we believe that such an approach would quickly become counterproductive and runs contrary to our conception of the nature of graduate education at the University of Chicago. *However, we urge faculty to identify opportunities to create more general programs of graduate study linking particular fields and disciplines in ways that would offer a broad preparation for academic and non-academic careers alike.*

It would also be desirable to offer students in such programs—and in others—the opportunity to pursue courses in the professional Schools, thereby allowing them to acquire in the course of their doctoral training the knowledge and capabilities helpful to the realization of its full potential in a variety of non-academic contexts. We think it more appropriate to enable and encourage interested students to do such work during their graduate studies than to expect them to seek it in the post-Ph.D. training considered as the first alternative above. *We recommend that individual students be allowed greater flexibility to cross the lines between the graduate Divisions and the professional Schools as their interests and sense of career options develop.*

Alternative 4: Joint Graduate/Professional School Programs. A fourth way of proceeding would be to reconsider the relationship between graduate education and professional education more systematically. Such reconsideration might begin by recognizing the common condition of professional education and graduate education in the arts and sciences: a tendency toward excessive narrowness in both. Professional education has grown dramatically in recent years. Graduate business schools have multiplied. Law school enrollments are swollen. Medical schools are overflowing. As a result of this expansion, it is probable that professional education now attracts a much more differentiated student body than it did ten years ago. It is not self-evident that professional education has yet adapted to the goals and interests that the most broadly gauged of these students may bring with them, or that faculty primarily

engaged in graduate education in the arts and sciences have no contributions to make in this respect.

There are many areas of law and business in which advanced training in one or another of the disciplines of the social sciences, the humanities, and even the natural sciences, would be of particular value to the future professional—to say nothing of the more general attractions the opportunity to continue their liberal education might have to students now enrolling in professional schools. Conversely, there are many traditional areas of the humanities and social sciences which would offer a firmer basis for non-academic careers if they were combined with elements of a professional school training. A doctoral program in Law and Social Policy, for example, might combine a legal education with training in one or more social-scientific disciplines. A doctoral program in International Studies might, in its turn, combine aspects of the study of European (or Asian) languages, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and/or business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other studies of language structure and use; between law and history, as social matrix and form of discourse; between law and anthropology as the study of cultural systems; between law and philosophy, both analytic and normative.

In a University as integrated as our own, mutual interests and obvious lines of intellectual intersection could make joint graduate and professional school programs of this kind attractive and important for faculty and students alike. *We urge the appointment of a committee, including appropriate Deans, to create the arrangements necessary to establish such programs.*

C. Some Further Recommendations

With these considerations in mind, it is important to ask whether our programs of graduate study are now organized in a way that approaches as closely as possible the ends of graduate education at the University of Chicago as we have sought to define them. This is not the place to review in detail the organization of every graduate program in the University: the obligation to do so rests with the faculty bodies whose responsibility these programs remain. In what follows, the Commission seeks to foster a broad reassessment of programs and courses of study by raising issues and offering further recommendations regarding structure, organization, and curriculum in general terms.

Avoiding Premature Specialization

Graduate education rests upon the cultivation of intellectual breadth and disciplined competence. In pursuit of the latter, our programs of study appropriately begin with an introduction to well-defined bodies of knowledge, the principles upon which they rest, and the procedures by which they are extended. In the initial phase, however, it is essential that the student's training not be prematurely narrowed. Work in any field requires a broad understanding of the nature of the field as a whole, its structure, assumptions, and conditions of existence as an object of scholarly inquiry. *The Commission believes that introductory work in some departments has become too narrow in recent years as a result of the specialization fostered by a period of academic expansion. Each department should consider its requirements and offerings with this concern in mind. Such a consideration should form part of the procedure of self-evaluation recommended previously in this report.*

Achieving Intellectual Breadth

Understanding one discipline or field of intellectual interest also implies an informed awareness of others that may share common methods and assumptions, or compete for the same terrain with entirely different cognitive tools. It is important for students to recognize that disciplinary approaches are not given but created, that they exist in a constantly shifting relationship to others that is never more than provisional, that intellectual confraternities are at constant risk of degeneration into outmoded sovereignties. Since intellectual creativity does not respect parochial boundaries, we should not allow our students to be constrained by them. This postulate has both negative and positive implications. Negatively, it means that departmental degree requirements should not be drawn so narrowly as to prevent or discourage students from exploring the broader cognitive terrain within which their own intellectual interests are defined. Positively, it means that creation of elements of broader common curricula than now exist should be considered at the Divisional (and perhaps even the inter-Divisional) level. The nature and appropriateness of such common curricula may vary from Division to Division and we do not presume to know them in advance. We think it important, however, that institutional means be found to consider these questions, where they do not now exist. Development of these means should be the responsibility of the Divisional Deans. In a period of academic expansion, their principal responsibility tends to become that of maintaining the quality of the faculty by insisting upon the highest standards in the appointments process. In a period of relative constraint, curricular matters become

would offer a training suitable for students planning to enter non-academic careers. Provided there were broad common introductory training, and plenty of opportunities for students to move between the strictly vocational (academic) track and the more broadly educational (liberal) track, such an arrangement would have the great merit of postponing the moment at which the graduate student had to choose finally between the academic and the non-academic route.

The difficulty in developing this kind of program lies in defining precisely the difference that would obtain between the academic and non-academic "track." Would the non-academic track be more general in its approach to the field of study and less narrowly specialized in the scope of the topics chosen for the dissertation? We have already argued that, even from the point of view of training teachers, scholars, and researchers, we should broaden the graduate training we offer; that whether a dissertation topic is "narrow" or "broad" lies less in the specific nature of the topic *per se* than in the conception of the problem which makes it worthwhile. In this respect, there seems little basis for distinguishing between the two possible tracks in graduate education at the University of Chicago. Would the non-academic track, on the other hand, be more "technical" in developing particular skills that are more immediately applicable in the non-academic contexts, while the academic track remained more "theoretical" in its orientation? This kind of distinction might well support a clearer demarcation between an initial M.A. level training, which would teach technical disciplinary concepts and skills necessary for the academic and non-academic practice of that discipline, and a more theoretically advanced doctoral training. But it does not seem an adequate basis for distinguishing between programs at the doctoral level. *We do not recommend the creation of such "double-track" programs.*

Alternative 3: Breadth and Flexibility in Graduate Programs. A third way of proceeding would be to recognize that a more general conception of graduate education—for which we have already argued as the most appropriate preparation for future academic teachers and researchers—is also likely to provide the most fitting preparation for students entering non-academic careers. The University's traditions of breadth and flexibility can surely serve it well in this respect.

Opportunities for broad, flexible intellectual training already exist within a number of degree programs. But there may well be areas in which such opportunities need to be more explicitly developed and set forth. If European politics and institutions were studied alongside European languages and literature, for example,

the resulting program of study could prepare not only scholars and teachers of greater breadth and sophistication, but better diplomats and journalists and more effective executives in international organizations, businesses, or banks with European interests. If graduate students in English were invited to consider the rhetoric of politics, of economics, of business, or of the law—to offer another example—they would find the challenge of opening up a new intellectual domain no less stimulating than it would be valuable in developing abilities and capabilities important in teaching and in many non-academic endeavors. It is not our intention to recommend a proliferation of special-purpose graduate programs geared to specific non-academic careers. On the contrary, we believe that such an approach would quickly become counterproductive and runs contrary to our conception of the nature of graduate education at the University of Chicago. *However, we urge faculty to identify opportunities to create more general programs of graduate study linking particular fields and disciplines in ways that would offer a broad preparation for academic and non-academic careers alike.*

It would also be desirable to offer students in such programs—and in others—the opportunity to pursue courses in the professional Schools, thereby allowing them to acquire in the course of their doctoral training the knowledge and capabilities helpful to the realization of its full potential in a variety of non-academic contexts. We think it more appropriate to enable and encourage interested students to do such work during their graduate studies than to expect them to seek it in the post-Ph.D. training considered as the first alternative above. *We recommend that individual students be allowed greater flexibility to cross the lines between the graduate Divisions and the professional Schools as their interests and sense of career options develop.*

Alternative 4: Joint Graduate/Professional School Programs. A fourth way of proceeding would be to reconsider the relationship between graduate education and professional education more systematically. Such reconsideration might begin by recognizing the common condition of professional education and graduate education in the arts and sciences: a tendency toward excessive narrowness in both. Professional education has grown dramatically in recent years. Graduate business schools have multiplied. Law school enrollments are swollen. Medical schools are overflowing. As a result of this expansion, it is probable that professional education now attracts a much more differentiated student body than it did ten years ago. It is not self-evident that professional education has yet adapted to the goals and interests that the most broadly gauged of these students may bring with them, or that faculty primarily

engaged in graduate education in the arts and sciences have no contributions to make in this respect.

There are many areas of law and business in which advanced training in one or another of the disciplines of the social sciences, the humanities, and even the natural sciences, would be of particular value to the future professional—to say nothing of the more general attractions the opportunity to continue their liberal education might have to students now enrolling in professional schools. Conversely, there are many traditional areas of the humanities and social sciences which would offer a firmer basis for non-academic careers if they were combined with elements of a professional school training. A doctoral program in Law and Social Policy, for example, might combine a legal education with training in one or more social-scientific disciplines. A doctoral program in International Studies might, in its turn, combine aspects of the study of European (or Asian) languages, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and/or business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other studies of language structure and use; between law and history, as social matrix and form of discourse; between law and anthropology as the study of cultural systems; between law and philosophy, both analytic and normative.

In a University as integrated as our own, mutual interests and obvious lines of intellectual intersection could make joint graduate and professional school programs of this kind attractive and important for faculty and students alike. *We urge the appointment of a committee, including appropriate Deans, to create the arrangements necessary to establish such programs.*

C. Some Further Recommendations

With these considerations in mind, it is important to ask whether our programs of graduate study are now organized in a way that approaches as closely as possible the ends of graduate education at the University of Chicago as we have sought to define them. This is not the place to review in detail the organization of every graduate program in the University: the obligation to do so rests with the faculty bodies whose responsibility these programs remain. In what follows, the Commission seeks to foster a broad reassessment of programs and courses of study by raising issues and offering further recommendations regarding structure, organization, and curriculum in general terms.

Avoiding Premature Specialization

Graduate education rests upon the cultivation of intellectual breadth and disciplined competence. In pursuit of the latter, our programs of study appropriately begin with an introduction to well-defined bodies of knowledge, the principles upon which they rest, and the procedures by which they are extended. In the initial phase, however, it is essential that the student's training not be prematurely narrowed. Work in any field requires a broad understanding of the nature of the field as a whole, its structure, assumptions, and conditions of existence as an object of scholarly inquiry. *The Commission believes that introductory work in some departments has become too narrow in recent years as a result of the specialization fostered by a period of academic expansion. Each department should consider its requirements and offerings with this concern in mind. Such a consideration should form part of the procedure of self-evaluation recommended previously in this report.*

Achieving Intellectual Breadth

Understanding one discipline or field of intellectual interest also implies an informed awareness of others that may share common methods and assumptions, or compete for the same terrain with entirely different cognitive tools. It is important for students to recognize that disciplinary approaches are not given but created, that they exist in a constantly shifting relationship to others that is never more than provisional, that intellectual confraternities are at constant risk of degeneration into outmoded sovereignties. Since intellectual creativity does not respect parochial boundaries, we should not allow our students to be constrained by them. This postulate has both negative and positive implications. Negatively, it means that departmental degree requirements should not be drawn so narrowly as to prevent or discourage students from exploring the broader cognitive terrain within which their own intellectual interests are defined. Positively, it means that creation of elements of broader common curricula than now exist should be considered at the Divisional (and perhaps even the inter-Divisional) level. The nature and appropriateness of such common curricula may vary from Division to Division and we do not presume to know them in advance. We think it important, however, that institutional means be found to consider these questions, where they do not now exist. Development of these means should be the responsibility of the Divisional Deans. In a period of academic expansion, their principal responsibility tends to become that of maintaining the quality of the faculty by insisting upon the highest standards in the appointments process. In a period of relative constraint, curricular matters become

no less essential. *We urge Deans to assume greater responsibility for common curricular matters at the Divisional level.*

Clarifying Master's Degree Programs

Appropriately broadened, the initial phase of graduate education may be pursued as a necessary basis for further academic work, a valuable preparation for many non-academic endeavors, a desirable means of general intellectual development. Whatever the case, its completion should be clearly defined and measured by the requirements of an M.A. degree, providing faculty members with a formal opportunity to encourage (or discourage) a student to proceed further, and allowing students an appropriate moment to consider their options and commitments. Graduate education is costly: it demands the investment of valuable institutional and personal resources. Given the nature of the personal and professional choices involved, we should make sure that this initial phase of our training is rigorous and demanding enough that those students who choose to discontinue their graduate education at this point can do so with a sense of accomplishment and enhanced capacities, while those students who continue to more advanced graduate work are clearly qualified to do so. In the headier days of the 1960s and 1970s, there was a tendency in some departments to relax the emphasis on the M.A. degree and minimize its importance in relationship to the Ph.D. The Commission believes that this tendency, where it exists, should be reversed. The M.A. should not be thought of as a consolation prize or a mere exit ticket on the one hand, or as a simple formality on the way to the Ph.D. on the other hand, *M.A. programs should be clarified, where necessary, to represent rigorous and demanding courses of study, completion of which should provide clear evidence regarding a student's potential for advanced research. M.A. programs should be completed within a maximum of six quarters of full-time study (or its part-time equivalent).*

Creating Broader M.A. Programs

While clarifying the structure of existing M.A. programs, the faculty should also seek to identify opportunities to create new ones that might provide a broad context for intellectual training appropriate for non-academic as well as academic careers, in ways that are consistent with its talents and preferences and with the traditions of the University. We believe that M.A. programs of this kind, given a significant intellectual content and adequate resources, could attract both new students and faculty enthusiasm. Such programs could draw not only on departmental strengths but on the

cross-disciplinary traditions of the University. They could provide exit degrees for those who wish to utilize them as liberal preparation for non-academic careers and qualifying degrees for those who wish to continue towards advanced graduate research. They could be systematically paired with professional degrees in law and business.

Revising Course Requirements for the Ph.D.

The Ph.D. is a research degree. We should therefore advance towards that degree only those students who show genuine promise of research ability, clearly demonstrated in the course of demanding work at the M.A. level. And we should do so in an environment that leads the student to engage in the activity of research as quickly, as clearly, and as self-consciously as possible. This is best achieved where formal course requirements are reduced to a minimum and course work is subordinated to the essential business of choosing a field of research and identifying a significant problem. Course work is a means to an end: its continuation beyond a certain point delays commitment to a research problem without enhancing the imaginative ability to define one. The University would make this much clearer to its students by abandoning the formal twenty-seven course requirement now in effect as a prerequisite for the Ph.D. degree. In the natural sciences, that requirement has no real meaning in terms of the actual practice of graduate research training beyond the first year. In the humanities and social sciences, it too often encourages students to delay their definition of their own research interests. *The Commission recommends the replacement of the current twenty-seven course requirement with an equivalent residency requirement of nine quarters. We also recommend that formal course work required for the Ph.D. (including M.A. requirements) normally not extend beyond a period equivalent to six quarters full-time residency at a normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability. Unless explicit permission is granted to the contrary, students denied formal admission to doctoral research will be expected to terminate their graduate study at this point.*

Improving the Context for Graduate Research in the Humanities and Social Sciences

The research phase of graduate education should not, however, be defined in terms of the mere cessation of course work. Noble though it be, the Humboldtian ideal of "loneliness and freedom" is not an adequate

basis for the organization of graduate work at this critical stage. Students challenged to pursue significant problems need a continuous and collegial context of research activity, in which topics for dissertation research can be formulated and defended as advancing important intellectual concerns at critical points. Students engaged for the first time on the difficult and often frustrating conduct of an extended research project need a sustained, structured environment which offers intellectual and emotional support from faculty and student colleagues. Students expected to develop a self-conscious understanding of the intellectual activity in which they are engaged need an opportunity to participate in its definition through dialog with other scholars.

In the natural sciences, this kind of systematic and sustained environment for graduate research is typically provided by the laboratory and research institute, which students enter relatively early in their careers. In the humanities and social sciences, on the other hand, such contexts rarely exist outside a few fields. In the absence of regular, continuing seminars for dissertation research, students have relatively little formal contact with faculty members and frequently find themselves isolated from one another. Extensive course requirements before students actually engage in research, a tuition structure that discourages formal registration when course work is completed, and the absence of adequate fellowship support at the dissertation-writing stage, serve further to create the institutional limbo in which students are expected to fulfill the most difficult and demanding task of their entire graduate career. This situation is surely one of the most serious weaknesses in our graduate education.

The Commission recommends the creation, in the Humanities and Social Sciences Divisions, of a clearer context for the dissertation writing and research that constitute the essence of Ph.D. training at the University of Chicago. In chapter 6, we consider a proposal for a Research Institute structure in the Humanities and Social Sciences, conceived as a means of creating a context of this kind.

Notes

1. Murphy and Bruckner, *The Idea of the University of Chicago*, p. 67.
2. Richard J. Storr, *Harper's University. The Beginnings* (Chicago, 1966), p. 94.
3. *The Idea of the University of Chicago*, p. 65.
4. A. D. Hope, *Dunciad Minor III* (Melbourne, 1970), as quoted by John Passmore, "The Philosophy of Graduate Education," in William K. Frankena, ed., *The Philosophy and Future of Graduate Education* (Ann Arbor, 1980), p. 53.
5. "Report of the Committee on the Problems and Scope of Graduate Work," *The University of Chicago Record*, 7, no. 1 (15 January 1973), p. 4.

6. *Harper's University*, p. 159.

7. "Report of the Committee on the Problems and Scope of Graduate Work," p. 2.

8. Alexis de Tocqueville, *Democracy in America*, tr. Henry Reeve, 2 vols. (New York, 1904), vol. 2, p. 53.

9. "Report of the Ad Hoc Committee on Government Funding of Research and Education," *The University of Chicago Record*, 14, no. 4 (10 October 1980), p. 117 and Table 2.

10. Passmore, "The Philosophy of Graduate Education," p. 51.

11. "Report and Recommendations to the Dean of The College concerning the Use of Graduate Students in the College," *The University of Chicago Record*, 13, no. 3 (29 June 1979), p. 111.

12. *Ibid.*, pp. 116, 118.

13. Robert E. Klitgaard, "The Decline of the Best: An Analysis of the Relationships Between Declining Enrollments, Ph.D. Production, and Research" (Kennedy School of Government, Harvard University, Discussion Paper no. 65D, May 1979), p. 54.

14. Quoted in Rita Jacobs, "The Useful Humanists: Alternative Careers for Ph.D.s in the Humanities" (Rockefeller Foundation Working Papers, August 1977), p. 22.

Chapter 4: The Graduate Student Body

The University is the entire body of men and women, faculty and students . . . who are here for the common purpose of attainment in a high intellectual life, with the common purpose of adding to knowledge by research.

President Judson, speaking to the Harper Memorial Student Body Meeting, 15 January 1906.¹

In the preceding chapter of this report, we have discussed the idea of graduate education at the University of Chicago in relatively general terms. We wish now to consider its current state more closely. In this chapter, we address questions relating directly to the recruitment, financial support, and institutional needs of the graduate student body. In the following chapter, we turn to the principal issues facing each of the four Divisions.

One aim of the Commission's work has been to gather reliable data regarding the character, needs, and interests of our graduate student body. For that purpose, we surveyed three groups: prospective students who declined admission to the University to begin graduate study in the Fall of 1980; students who accepted admission to the University to begin graduate study in the Fall of 1980; a sample of all graduate students registered in the Winter of 1981. A fuller description of these surveys, and of the results obtained, is presented in some detail in Appendix B. This chapter draws on those results and on other information gathered in the course of our inquiry.

A. Recruitment

Our discussion of recruitment is based on a study of

some 2,026 applicants to whom the University offered admission for graduate work in the four Divisions in the academic year 1980-81. Of this group of 2,026 admittees, 107 (6 percent) were offered admission to the Biological Sciences Division, 300 (14 percent) to the Physical Sciences Division, 611 (30 percent) to the Humanities Division, and 1,008 (50 percent) to the Social Sciences Division. As illustrated in Figure 1, 44 percent of those offered admission to the Biological Sciences Division accepted this offer and entered the University, as compared with 32 percent in the Physical Sciences, 28 percent in the Humanities, and 34 percent in the Social Sciences. In order to evaluate the University's ability to recruit a strong graduate student body, we set out to ask how those students who accepted admission to graduate study here differed from those who declined, on what grounds they made their respective decisions regarding graduate study at the University of Chicago, and whether there were actions to be taken that would improve the attractiveness of the University to prospective graduate students of high academic promise.

Our general conclusions are the following. First, since prospective graduate students are attracted to the University of Chicago principally for its academic excellence, it is imperative—if the University is to continue to recruit a strong graduate student body—to maintain the intellectual strength it now enjoys and to extend that strength wherever possible. Second, while the overall academic quality of the students we recruit remains relatively high, we need to improve our ability to attract the very best prospective students in the diminishing national pool. Third, inadequate financial aid remains an important obstacle to attending the

University, particularly in the Humanities and Social Sciences Divisions; but increased financial aid will not attract the best students in the absence of academic quality and effectively organized programs of graduate education, both of which need to be improved in some areas of the University. Fourth, recruitment procedures need to be scrutinized for ways in which the University might more effectively attract promising students.

In what follows, we review some of the evidence that leads us to these conclusions. Our recommendations regarding graduate student recruitment them begin on page 119.

Applying to the University of Chicago

As Figure 2 makes clear, prospective graduate students who were offered admission to the University of Chicago in 1980-81 stated that they applied principally on the basis of its academic reputation in their particular field of interest, its overall reputation, and the encouragement of former teachers (in that order of importance).^{*} Relatively few of these prospective students stated they applied because their choice of graduate school was restricted geographically, though not surprisingly the proportion of applicants who gave

^{*}It should be noted that when we refer in this discussion to the 1980-81 applicants, we mean only those actually offered admission. Our respondents within that group, especially among those declining admission, were also more likely to have higher GRE scores and a higher offer of aid than non-respondents (see Appendix B, Tables 2 and 3). To the extent that these characteristics represent academic quality, the better admittees are therefore somewhat overrepresented in our survey: this is a potential source of bias, but one in the direction of the applicants most interesting to the University. However, students declining admission who were resident outside the United States and Canada were also excluded by the mechanics of this survey.

Figure 1
OFFERS OF ADMISSION TO GRADUATE STUDY
MADE AND ACCEPTED (1980-81), BY DIVISION

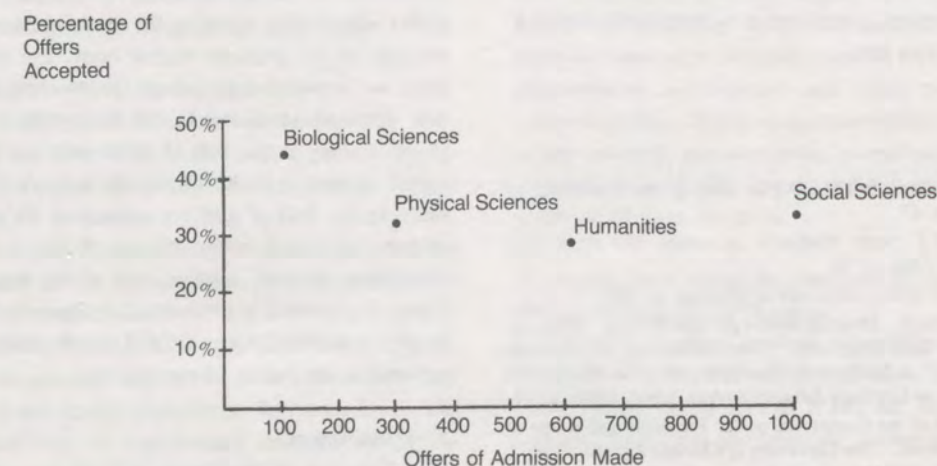
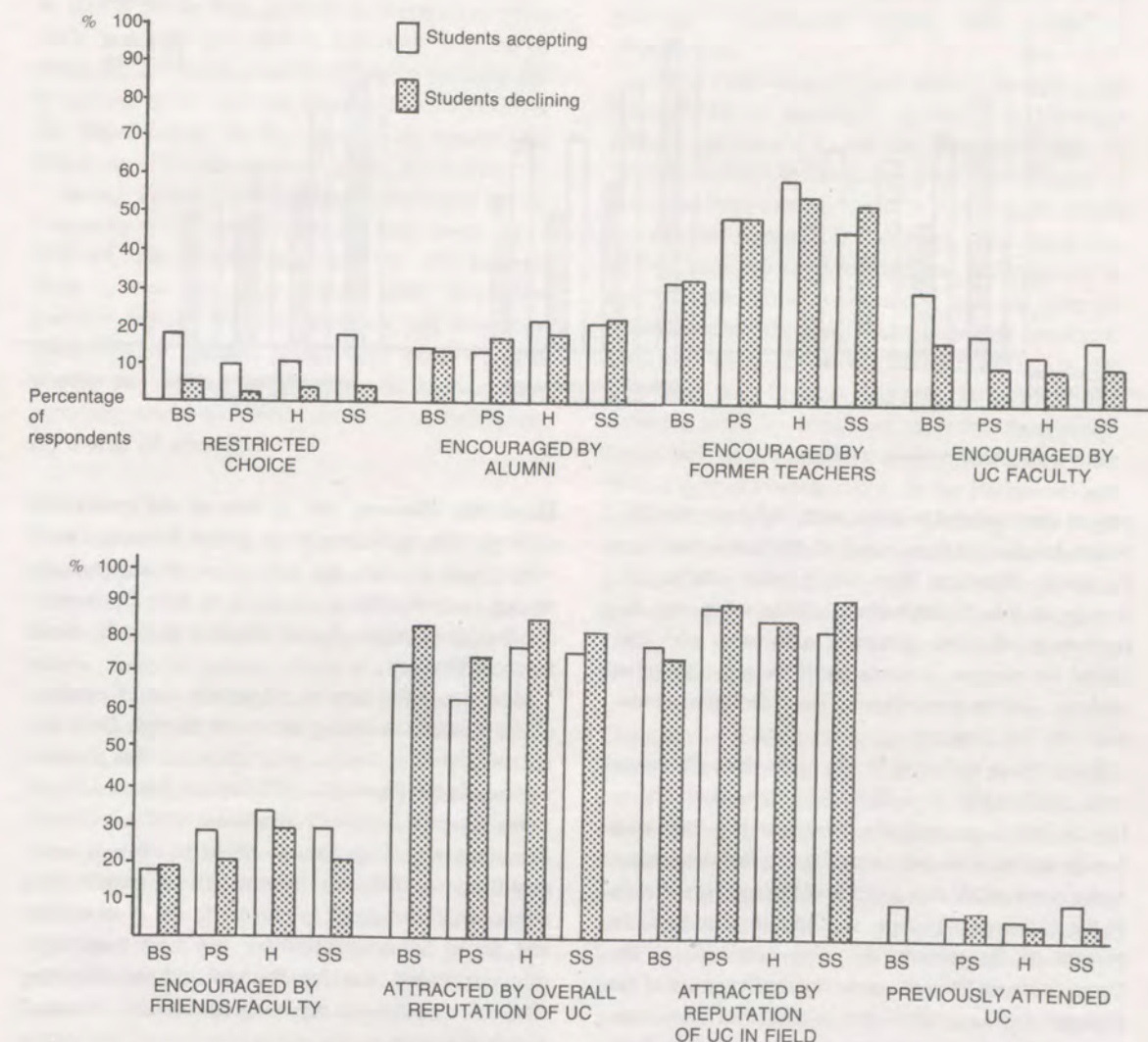


FIGURE 2: Respondents' Reasons for Applying to the University (1980-81), by Division



Based on Appendix B, Table 13

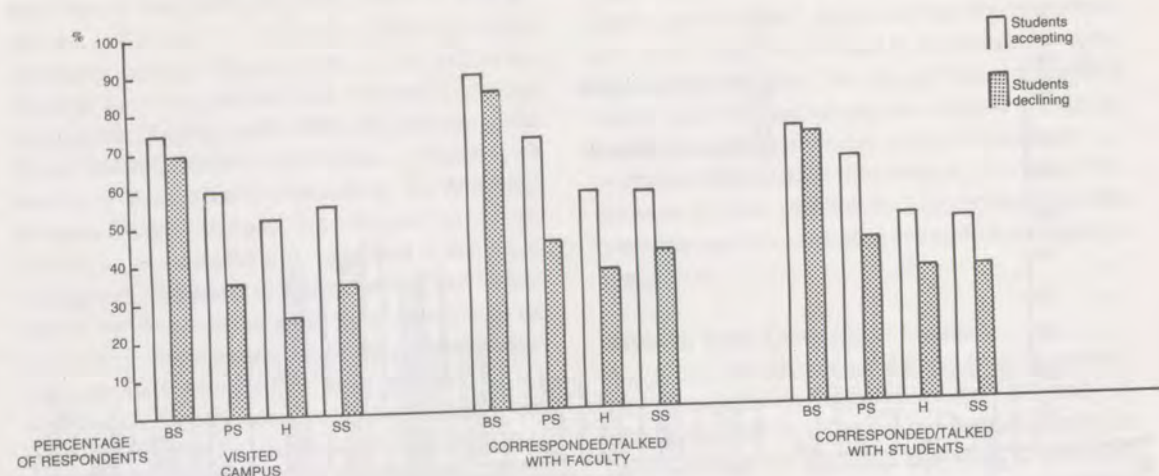
this as a reason was higher among those who accepted admission than among those who declined, particularly in the Biological and Social Sciences Divisions. By and large, then, prospective graduate students gave reasons for applying for admission to the University consistent with its stature as a major research institution.

There were, of course, some differences among the four Divisions in this respect. Applicants to the Biological Sciences Division were less likely than those to other Divisions to report encouragement from their former teachers; and those who declined admission to this Division were more likely to list the University's overall reputation than its strength in their particular field of interest as a reason for applying. The numbers

are relatively small in the Biological Sciences Division, and these data must therefore be treated with appropriate caution, but they suggest perceptions of the quality of that Division with which the University must be concerned. On the other hand, students who accepted admission to the Biological Sciences Division were more likely than other applicants to report that they had been encouraged to apply by a member of the University faculty. A relatively small proportion of applicants to other Divisions reported that they had been encouraged to apply by University faculty or alumni.

Whether or not they accepted an offer of admission, applicants to the Biological Sciences Division were also far more likely than others to have visited the cam-

FIGURE 3: Nature of Applicants' Contact with the University after Offer of Admission, by Division



Based on Appendix B, Table 15

pus, or corresponded or talked with University faculty, before deciding on their choice of graduate school (see Figure 3). However, there was a much smaller difference in this Division than in others between the percentage of those accepting admission who had visited the campus, or contacted University faculty or students, and the percentage of those declining admission who had done so.

While those accepting in the other three Divisions were significantly more likely than those declining to have visited the campus or to have been in contact with faculty and students, we cannot be sure that this contact was a cause rather than a result of their greater interest in the University. In fact, as Figure 5 illustrates, 24 percent of the students declining admission to the Social Sciences Division, and roughly 18 percent of the students declining admission to the other Divisions, reported that discouragement as a result of their dealings with the University had been a factor in their negative decision. In corroboration of this response, a number of prospective students declining admission to the Social Sciences Division—as many as 31 percent in the case of one department—added *spontaneous* comments about unpleasant experiences, including unsatisfactory correspondence, appointments with faculty members that were not kept, and discouraging conversations with current students (see Appendix B, Section IX).

It should nevertheless be a matter of concern that campus visits and contact with faculty were lowest among the students declining admission to the Humanities Division, which also had the lowest proportion of acceptances. Appropriate efforts to develop fuller personal contacts with applicants to the

Humanities Division, and to enhance the quality of dealings with applicants to the Social Sciences Division, could increase the proportion of acceptances among students offered admission to these Divisions. Similar efforts might also be effective in the Physical Sciences Division.

More generally, between 12 percent and 16 percent of the students declining admission in each Division reported that they needed information that they did not receive. In the Physical and Biological Sciences Divisions, the most frequently mentioned need was for information regarding faculty research interests and qualifications, followed by answers to specific inquiries addressed to departments. In the Humanities and Social Sciences Divisions, the most frequently mentioned need was for financial aid information, followed by materials regarding curriculum, courses, and programs of study.

Choosing a Graduate School

Students who accepted admission to the University of Chicago in 1980–81 were not notably different, in terms of nationality, sex, or ethnicity, from those who declined. But it is important to note that they were slightly older on average, and rather more likely to have a master's degree. A quarter of the students who accepted admission to the Social Sciences Division, a fifth of those who accepted admission to the Humanities and Biological Sciences, and a sixth of those who accepted admission to the Physical Sciences Division, already held their master's degree. Asked why they had come to the University of Chicago, entering students who had previously attended another graduate school most frequently responded that the

University had a better program in their field (a particularly strong response in the Biological and Physical Sciences Divisions). This attractiveness of the University to more advanced graduate students who expect to be able to pursue their academic interests more effectively here than elsewhere is important. It could be enhanced, and the expectations it implies yet more fully realized, by the steps this Commission advocates for the improvement of the institutional context the University offers for advanced graduate research.

Among students who declined admission to the University of Chicago for graduate study beginning in 1980–81, the overwhelming majority (83 percent) chose to enter the same field of study at another graduate school. We must therefore ask why they found another graduate school more attractive, and whether they differed in their criteria for deciding upon a graduate school from those who accepted the University's offer of admission.

Academic Criteria

If we set considerations of financial aid aside for the moment, it seems clear that those who accepted the University's offer of admission and those who declined based their decision on broadly similar academic criteria. Asked to indicate which of a number of considerations was most important to their decision regarding graduate school, our respondents (whether they accepted or declined admission) most frequently selected the reputation of the University's program in the relevant field, followed by the quality of the faculty (see Appendix B, Table 10). Program reputation was substantially more important among those accepting admission to the Humanities Division than among those declining, and substantially more important among those declining admission to the Biological Sciences Division than among those accepting. Faculty quality was more important among those declining admission than among those accepting, particularly in the Biological Sciences and Humanities Divisions. Among those accepting admission, the overall quality of the University was the third most important consideration. But among those declining, the opportunity for close contact with faculty was regarded as more important. In every Division except the Biological Sciences (but most particularly in the Social Sciences), those declining admission regarded this latter consideration as more important than those accepting.

Among the remaining considerations offered as most important in their decision, those students accepting admission were more likely to indicate the primary importance of opportunities to carry out their own research or to engage in interdisciplinary study, while those declining were somewhat more likely to em-

phasize availability of teaching experience and quality of the neighborhood. Matters of housing, the neighborhood, and recreational, social, and cultural opportunities, appeared relatively infrequently as the principal consideration among both groups of respondents.

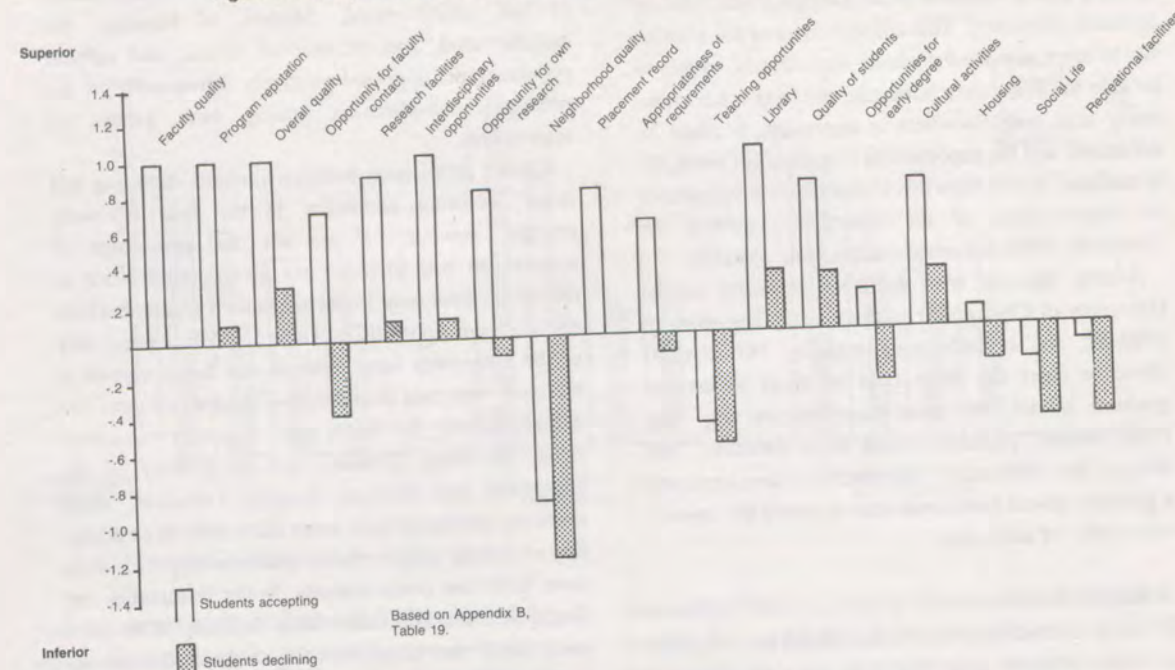
Clearer differences between students declining and those accepting admission in the four Divisions emerge, however, if we ask the percentage of respondents who included any given consideration as one of the three most important in their graduate school decision (see Appendix B, Table 11). While the quality of the University neighborhood was rarely chosen as the most important consideration, it appeared more frequently among the three most important considerations. In every Division, but particularly in the Biological and Physical Sciences Divisions, those declining admission were more likely than those accepting to include neighborhood quality among their three most important considerations. In the Humanities and Social Sciences Divisions, those declining were much more likely than those accepting to emphasize the importance of opportunities to gain teaching experience (particularly in the Humanities Division) and opportunities for close contact with faculty (particularly in the Social Sciences Division).

Comparative Evaluations of the University

Perceptions regarding opportunity for close contact with the faculty also emerged as an important factor differentiating between students accepting and students declining admission when the former were asked to compare the University of Chicago with the institution that was their second choice of graduate school and the latter were asked to compare it with the institution they were planning to attend. Figures 4A–4E illustrate these comparative evaluations of the University by students accepting and students declining admission for graduate study, in the four Divisions as a whole and in each Division separately. In analyzing these figures, it is important to notice that the institutional characteristics evaluated are presented from left to right in each figure in the order of the ranking of their importance in the relevant respondents' choice of graduate school. Thus these figures offer a general summary of the judgments that entered into that choice, insofar as our study can reveal them.

As illustrated in Figure 4A, students accepting admission to the four Divisions rated the University of Chicago as superior to their alternative graduate school on most of the criteria considered. In their view, it was most clearly superior on the academic criteria they considered most important—reputation of the program in the field, faculty quality, overall quality of the institu-

Figure 4A: Comparison of the University with an Alternative Graduate School: Four Divisions



tion, and opportunities for interdisciplinary study—as well as on library and research facilities. They rated the University most clearly inferior on quality of neighborhood and on availability of opportunities to gain teaching experience, and less clearly inferior on quality of social life and recreational facilities. Students declining admission agreed with these inferior ratings, to which they added inferior ratings on the more important criterion of opportunities for close contact with faculty, as well as on opportunities to do one's own research, opportunities for early degree, and availability of housing. They rated the University as equal in terms of faculty quality, and only slightly superior on most other academic criteria.

Within these overall comparative ratings, there are some important differences among the four Divisions. Students declining admission to the Biological and Physical Sciences Divisions rated the University as inferior to the graduate school they planned to attend on the important criteria of faculty quality, program reputation, and opportunity for close contact with faculty, as well as on quality of research facilities and several other criteria. Students declining admission to the Humanities Division rated the University as inferior on faculty quality, opportunities for close contact with faculty, and opportunities to do one's own research; they agreed with those accepting admission that it was clearly inferior on availability of teaching opportunities. Students declining admission to the Social Sciences Division rated the University as superior to the graduate school they planned to attend on most

academic criteria, including faculty quality and program reputation, but regarded it as inferior on the most important criterion of opportunities for close contact with faculty. They agreed with those accepting admission that the University was clearly inferior on availability of teaching opportunities, but disagreed with them in regarding it as also inferior on opportunities to earn an early degree.

Obstacles to Attending the University

As Figures 4A—4E suggest, however, it is possible to regard the University as superior to an alternative graduate school in a number of respects while still declining an offer of admission. Prospective students who chose not to enter one of the four Divisions were therefore asked to identify which of a number of possible factors were an obstacle to their accepting admission to the University. The responses are illustrated in Figure 5.

Among these obstacles, factors clearly beyond the University's ability to affect (geographical restrictions and family or personal considerations) were relatively unimportant. Discouragement as a result of dealing with the University can surely be alleviated by improved contacts with applicants who have been offered admission. Better information might well reduce the proportion of applicants believing that the University lacks the program they desire. The perception of the University as offering an excessively competitive environment (especially high in the Social Sciences Division) could be modified by policies that would make financial aid

more predictable and by institutional changes designed to provide more supportive contexts for graduate work, without compromising our proper standards of excellence.

It is important to note, however, that the most frequently cited obstacles to attending the University were financial. Seventy-five percent or more of those declining admission to the Humanities and Social Sciences Division, as compared with roughly 30 percent of those declining admission to the Biological and Physical Sciences Divisions, reported that financial obstacles of some kind were a factor in their negative decision. Of prospective students declining admission to the Humanities and Social Sciences Divisions who specified the nature of the financial obstacles they encountered, over 75 percent indicated inadequate tuition support or concern about meeting other expenses, over 65 percent indicated concern about incurring debts, over 55 percent indicated concern about receiving aid in future years, and over 40 percent indicated inadequate opportunities for teaching or research assistantships (see Appendix B, Table 18).

If we compare the financial aid offered to students who declined admission to the University with the aid they expected to receive at the graduate school of their choice, the same general pattern emerges. There are difficulties in comparing the overall values of financial aid awards at institutions that may have different tuition rates and different ways of assembling financial aid packages, as we are here obliged to do. For this reason, our data must be treated with caution. Nevertheless,

they suggest that, among students who declined admission to the Humanities and Social Sciences Divisions, a higher proportion received smaller awards here than elsewhere and a lower proportion received larger awards here than elsewhere (see Appendix B, Table 23). Among students who declined admission to the Biological and Physical Sciences Divisions, on the other hand, a lower proportion received medium awards here than elsewhere, and a higher proportion received larger awards here than elsewhere. Within the limitations of our data, then, there is evidence to suggest that students declining admission to the Humanities and Social Sciences Divisions tended to receive more substantial aid elsewhere. This does not appear to be the case for the Biological and Physical Sciences Divisions.

Academic Quality of Applicants

This Commission has already stated its conviction that the academic quality of the graduate student body is a more crucial issue for the future of the University than its overall size. Since this is a subject upon which the members of the Commission have been offered much contradictory impressionistic evidence, we have been particularly interested in using our survey of prospective graduate students to arrive at some more systematic information about the academic quality of our applicants. This is difficult, since no altogether satisfactory measure of academic quality exists. We have used GRE scores, college grade point average, the amount of aid offered, and admission to other distinguished

FIGURE 4B: Comparison of the University with an Alternative Graduate School: Biological Sciences Division

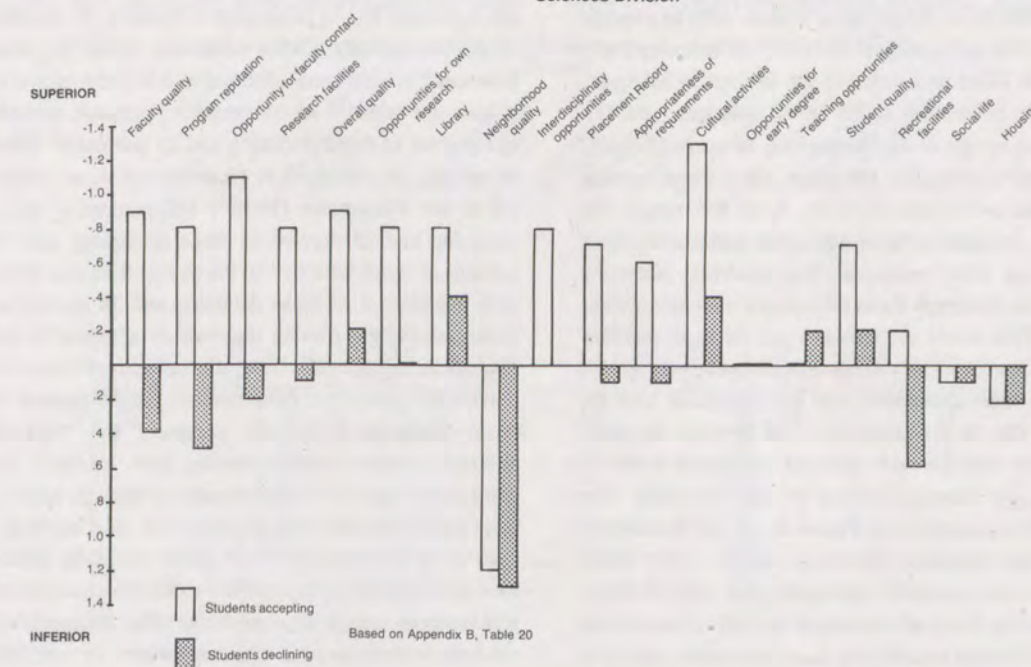
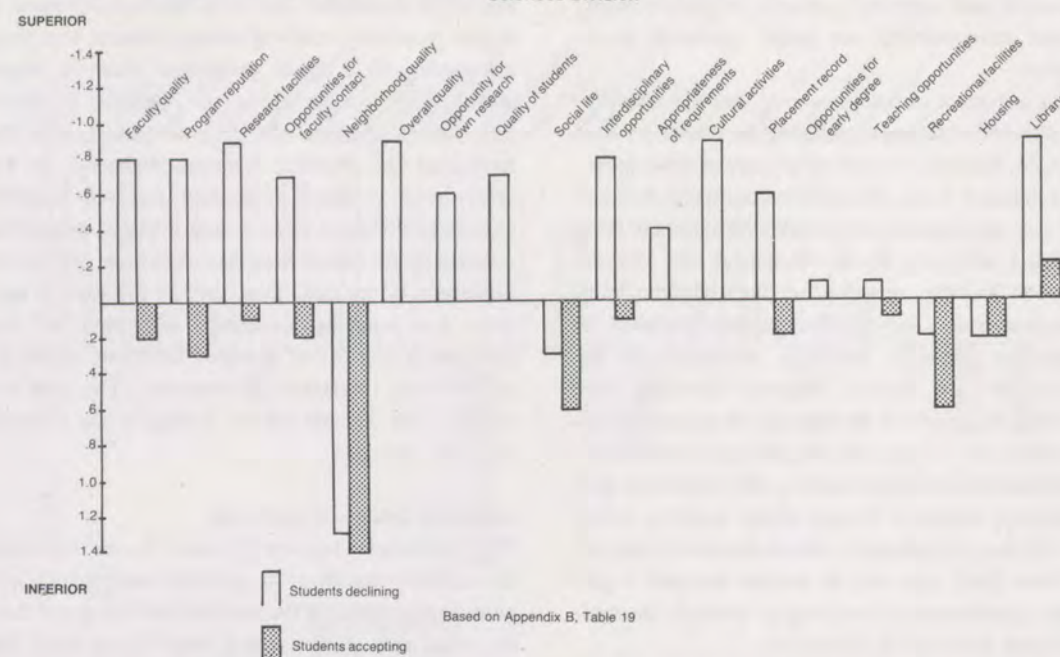


FIGURE 4C: Comparison of the University with an Alternative Graduate School: Physical Sciences Division



graduate schools. The limitations of our data in this respect are discussed in Appendix B.

As Figure 6 illustrates, the mean level of GRE scores and grade point averages among the prospective students surveyed was relatively high. Mean GRE Verbal scores for all applicants offered admission ranged from an average of 647 (in the 88th percentile of seniors and nonenrolled college graduates tested, 1977-80) in the Humanities Division, to 603 (80th percentile) in the Biological Sciences Division. Mean GRE Math scores ranged more widely, with an average of 740 (94th percentile) in the Physical Sciences Division, 666 (83rd percentile) in the Biological Sciences, 600 (69th percentile) in the Social Sciences, and 573 (62nd percentile) in the Humanities. In every Division, as Figure 7 indicates, the mean grade point average was close to 3.5 (that is, in the A- to B+ range). On average, students declining admission tend to score more highly on these measures than students, accepting admission (although these differences were not always large). This is not surprising, since the best qualified students are also likely to be most competitively sought after by other institutions; and it is consistent with the finding that in the Biological and Physical Sciences Divisions students who declined admission were offered larger financial awards by the University than those who accepted (see Figure 8). In the Humanities and Social Sciences Divisions, on the other hand, students who accepted admission were offered larger awards than those who declined; an indication that the size of financial awards may have been more critical in

attracting the better qualified students to these Divisions.

Since the quality of the other graduate schools to which an applicant is admitted may also be a rough indicator of his or her academic quality, we also examined the pool of respondents who were given a choice between the University of Chicago and one or more of the seven other distinguished graduate schools which seemed to represent the strongest overall competition for each Division (for further discussion of this choice, see Appendix B). As illustrated in Figure 9, 47 percent of the respondents offered admission to the Physical Sciences Division were admitted to this University and at least one other of seven competing graduate schools (65 percent of those declining and 24 percent of those accepting), as compared to 46 percent of those admitted to the Humanities Division (60 percent of those declining and 25 percent of those accepting) and 45 percent of those admitted to the Social Sciences Division (60 percent of those declining and 28 percent of those accepting). Among respondents admitted to the Biological Sciences Division, this percentage fell to 29 percent (47 percent of those declining and 9 percent of those accepting.) By this measure, the Physical Sciences Division was competing most intensely for prospective students of high academic quality, and the Biological Sciences Division competing least intensely.

In every Division, however, those accepting admission were significantly less likely than those declining to have been admitted to one of the other distinguished graduate schools used in this comparison. In part, this

is explained by the fact that a larger proportion of applicants accepting admission than of those declining applied only to the University of Chicago: in Biological Sciences, 20 percent as compared to 2 percent; in Physical Sciences, 8 percent compared to 0 percent; in Humanities, 24 percent as compared to 4 percent; and in Social Sciences, 26 percent as compared to 3 percent. In part, it is explained by the greater competition among distinguished universities for the best-qualified students. But we can make a rough assessment of how effectively this University was able to compete for these applicants by asking what proportion of the prospective students also admitted to one or more distinguished competing graduate schools chose to attend the University of Chicago, as compared with the proportion we might reasonably expect. On the assumption that the University is competing equally, we should expect it to recruit at least half of those applicants who chose between the University of Chicago and another distinguished graduate school, at least a third of those who chose among the University of Chicago and two other distinguished graduate schools, and so on. By this admittedly tentative measure, the University was somewhat less competitive for the most attractive prospective students than we might reasonably have expected in every Division except the Social Sciences Division. (See Table 1; the relevant data for each Division are presented more fully in Appendix B, Tables 9A and 9D.

The data on financial aid awards offered to these students and on the obstacles to attending the University they indicated (see Appendix B, Tables 9B and 9C) suggest that inadequate financial awards may have

been the most important factor in this situation, particularly in the Humanities and Social Sciences Divisions. Of the students offered admission to this University who chose to attend one of the other seven distinguished graduate schools used for comparison in their Division, over 60 percent of those declining admission to the Humanities and Social Sciences Divisions stated that financial obstacles were important in their decision, as compared with fewer than 15 percent of those declining admission to the Biological and Physical Sciences Divisions. In addition, among the same group, almost 20 percent of those declining admission to the Humanities and Social Sciences Divisions referred to discouragement as a result of their dealings with the University, while 39 percent of those declining admission to the Social Sciences Division cited a perception of the University environment as too competitive. The proportion of those who felt the University lacked the program they desired ranged from 31 percent of those declining admission to the Social Sciences Division to 57 percent of those declining admission to the Biological Sciences Division.

In summary, while the overall quality of the students admitted to the University for graduate study in 1980-81 may not have been as high as the faculty might wish, it appears to have been fairly high. However, our study suggests that the University needs to make a stronger effort to improve its ability to recruit the best qualified applicants in the national pool.

Recruitment Strategies

The ability to attract an outstanding graduate student body is of critical importance in advancing the scholar-

Figure 4D: Comparison of the University with an Alternative Graduate School: Humanities Division

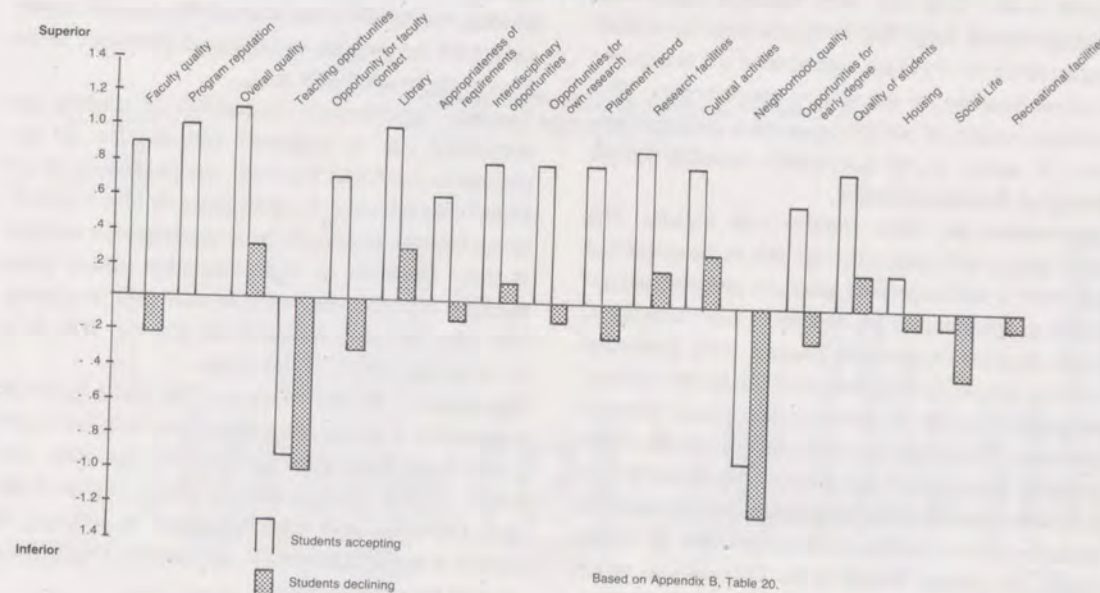
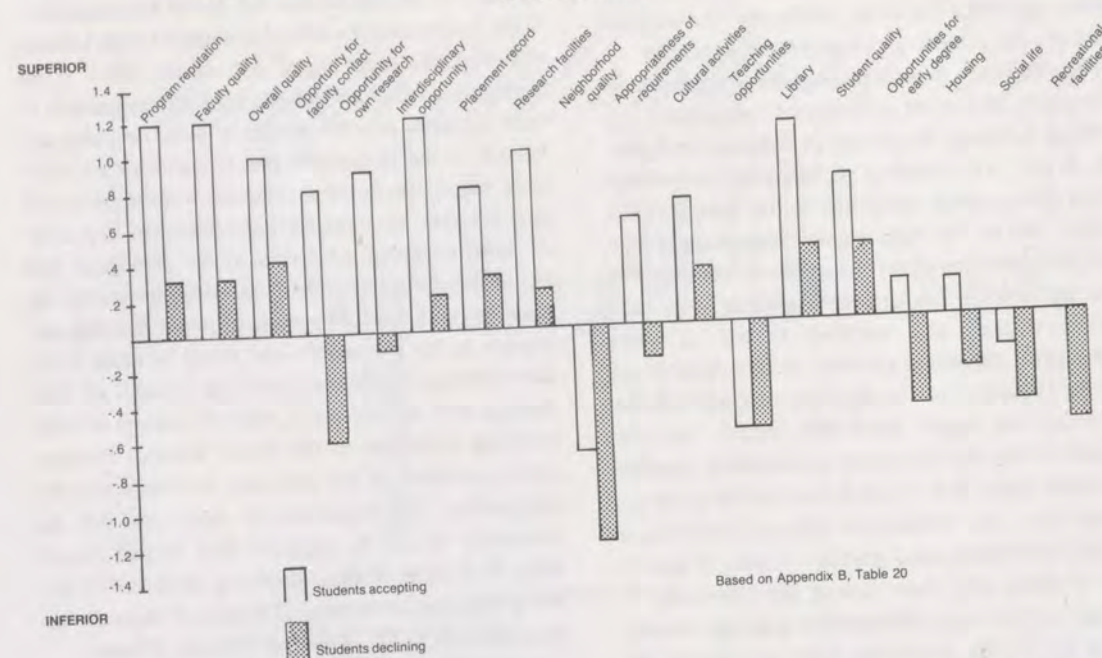


FIGURE 4E: Comparison of the University with an Alternative Graduate School: Social Sciences Division



ly traditions to which the University stands committed. It is therefore essential to ask whether there are recruitment strategies that will strengthen that ability in a period that is likely to see intensified competition for the best qualified candidates for graduate study in a smaller national pool. The following considerations are suggested by our study of the recruitment patterns among 1980-81 applicants.

Faculty Quality. The University's ability to recruit the most promising students depends in large part on the quality of the faculty and their reputation in their particular fields. Thus the most essential recruitment strategy, in the long run, is to maintain the overall quality of the faculty at the highest level and to improve it where possible by strong new appointments. This must be a matter of continuing concern in every Division. It seems to be particularly pressing in the Biological Sciences Division.

Opportunities for Close Contact with Faculty. The finest faculty will attract students only to the extent that they offer a well conceived academic program and appropriate opportunities for students to work with them. Many prospective graduate students were concerned with this question of opportunities for faculty contact, particularly in the Humanities and Social Sciences Divisions. Those who declined admission to the Social Sciences Division with this consideration in mind may not have been entirely misguided: the in-residence students surveyed in this Division also rated the opportunities for faculty contact at the University as worse than they expected. We urge all departments, especially in the Social Sciences, to consider this issue serious-

ly in reviewing the organization of their programs of study.

While the matter of improving opportunities for faculty contact goes beyond recruitment procedures narrowly construed, a practice followed in the Physics Department may provide a model in this respect. Each year a small admissions committee is appointed in that department, with the responsibility not only for admitting the year's group of students but for advising them personally throughout their first year of graduate study until they find individual faculty sponsors for their own research. An arrangement such as this, which gives individual faculty members a sense of personal responsibility for the progress of individual admittees, seems to us to be an admirable one.

Teaching Opportunities. Availability of teaching opportunities was an important consideration for applicants to the Social Sciences, and particularly to the Humanities Division. It seems likely that the University can improve its attractiveness to prospective students in these Divisions by explaining more clearly those teaching opportunities that now exist and developing new ones. We have discussed this question more fully in an earlier section of this report.

Opportunities for Early Degree. This was a matter of concern for a number of students declining admission to the Social Sciences and Humanities Divisions. The length of time taken to earn the Ph.D. degree in the four Divisions, and steps that might be followed to reduce it where appropriate, are discussed more fully later in the present chapter.

Admissions Procedures. Admissions procedures at this

University are decentralized, not only by Division but within Divisions. Such an arrangement has the advantage of providing departments with the flexibility to deal with recruitment in ways most appropriate to their particular competitive situation, but it makes overall evaluation of the admissions process difficult and it compounds the problems of ensuring that admittees receive the information and encouragement they may need to enter the University. There are considerable variations in recruitment activities among departments, not all of which seem to result from explicit or deliberate policy decisions. *We recommend a thorough review of recruitment procedures at the level of the four Divisions.*

Such a review should concern itself with each of the two broad goals of recruitment: encouraging applications from the widest possible pool of potential applicants; encouraging acceptances from the most promising admittees. We shall consider each of these goals briefly, offering suggestions for further discussion at the Divisional and departmental levels.

(i). Encouraging Applications

Department Publications. Many departments now have brochures or flyers that are sent to institutions from which applicants might be attracted. Some are convinced of the utility of these publications; others are skeptical about their effectiveness, given a situation in which potential applicants may be inundated by publications broadcast from competing institutions. It would be worth considering whether there are more effective means of attracting student interest, perhaps by announcing particular areas of current research interest in a more direct way. One faculty member in the natural sciences told us of his surprise when he advertised for a research assistant for a particular project and received many more applicants for that job than his

department usually receives for Ph.D. training in the same field. This experience may have some useful implications for graduate student recruitment. A circular describing opportunities for current research in a particular field or group of fields might be far more effective in attracting the most ambitious students than a general departmental brochure.

Alumni Contacts. Most departments have not maintained a formal network of contacts with alumni now teaching at undergraduate colleges who might encourage potential applicants to apply to the University. Alumni newsletters, now circulated by some departments, might be more generally useful in this respect.

Faculty Recruitment Activities. Faculty traveling to give papers at other universities may have a valuable opportunity to meet with potential applicants for graduate study. They might be particularly encouraged to do so by help with travel expenses in Divisions where help is scarce.

Summer Research Programs. Special summer research programs for undergraduates in some fields could provide an important introduction to the University and its neighborhood for promising potential applicants for graduate study. Such programs may be expensive if considered solely in terms of the yield of graduate students recruited. However, the students so attracted are often among the very best in their cohort; and there are indirect effects that are more difficult to measure.

New Degree Programs. The development of more general degree programs that might be attractive to some potential applicants has been discussed elsewhere in this report. Here we wish to suggest consideration of two degree program options that might be of particular relevance to some departments.

The first involves the possibility of admitting particularly talented students to a combined bach-

FIGURE 5: Obstacles to Attending the University Cited by Applicants Declining Admission, By Division

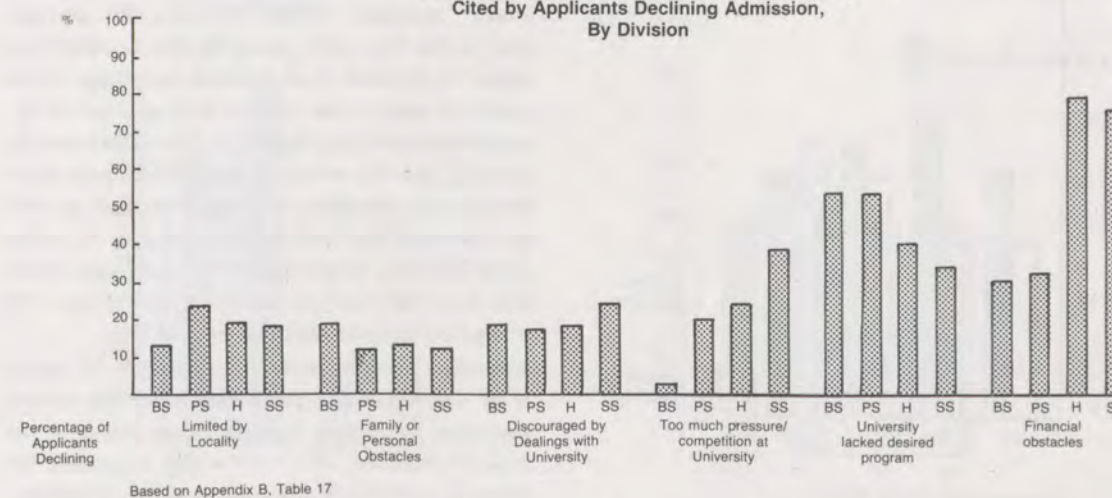
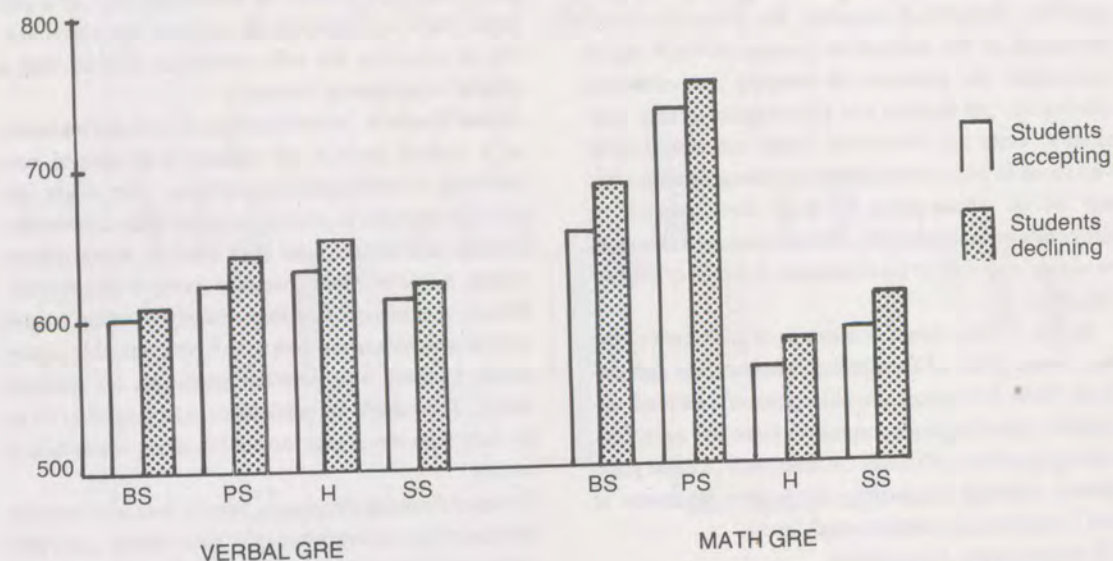


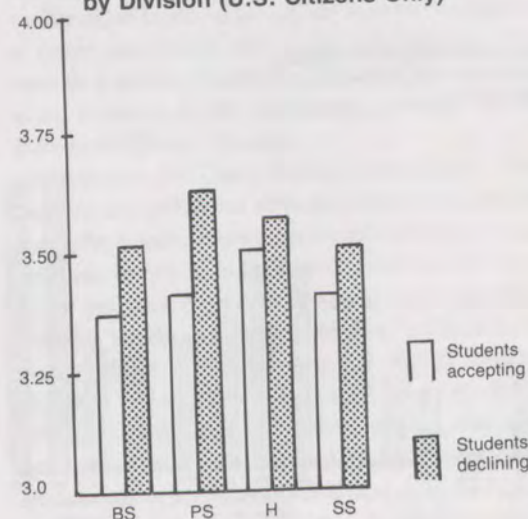
FIGURE 6: Mean GRE Scores of Applicants Offered Admission (1980-81), by Division (U.S. Citizens Only)



Based on Appendix B, Table 8

elors/doctoral program beginning in the third or fourth year of undergraduate study. Such programs are likely to be appropriate only in fields where promising early candidates for doctoral work can be identified with a high degree of confidence. But they could well attract excellent transfer students, as well as appealing to the best of our own undergraduates.

FIGURE 7: Mean College GPA Scores of Applicants Offered Admission (1980-81), by Division (U.S. Citizens Only)



Based on Appendix B, Table 8

The second involves the possibility of developing programs for individuals currently employed, whose employers might recognize an interest in sponsoring their more advanced training at the Ph.D. or M.A./M.S. level. There may be a growing interest in such opportunities in a decade in which the nation's prosperity is likely to require considerable reinvestment in scientific and technological resources. Such a program is unlikely to be feasible in many fields. But we can offer the example of the Statistics Department, which is entering into a program of this kind with Bell Laboratories.

(ii). Encouraging Acceptances

Ideally, applicants offered admission for graduate study at the University should be able to make their choice on the basis of an informed knowledge of the nature and quality of its graduate programs, and the appropriateness of these programs in light of their own intellectual interests, not on the basis of inadequate information, discouragement resulting from dealings with the University, and outdated perceptions of the nature of the University neighborhood. Our study suggests the need to consider several aspects of our dealings with prospective students from this point of view.

Information Available to Admittees. Roughly 15 percent of the students declining admission felt they had received inadequate information regarding some aspect of our graduate programs. This is not a large proportion, but neither is it one the University can afford to neglect.

Nor can the University afford to neglect the much

larger proportion of students declining admission who regarded the quality of its neighborhood as a negative factor in their decision. *We recommend the publication of an up-to-date pamphlet describing Hyde Park—its advantages and disadvantages as a University neighborhood and the attractions of its location in the city of Chicago—to be included with every offer of admission to the University.*

Personal Contacts with Admittees. We are concerned by the proportion of students declining admission who reported that they were discouraged by their dealings with the University. This response was stronger in the Social Sciences Division than elsewhere, and in some departments rather than others. We propose to send the relevant data directly to those departments for which this seems to be a particular issue.

Campus Visits. In some departments, a systematic effort is made to bring the best qualified applicants to the campus each year. Effectively organized, visits of this kind can answer many questions and improve our acceptance rate among the students most competitively sought after by other universities. But they require enthusiastic commitment of faculty time and effort, and could well be counterproductive without it. *We recommend energetic experimentation with such visits in departments where they do not now occur.*

Financial Aid. Inadequate financial aid appears to have been a principal obstacle to attending the University, among the whole group of those declining admission to the University as among the smaller group of those who were also offered admission to other distinguished universities. Moreover, this appears to have been particularly an obstacle for applicants offered admission to the Humanities and Social Sciences Divisions. It would be naive to think that financial aid alone is the key to

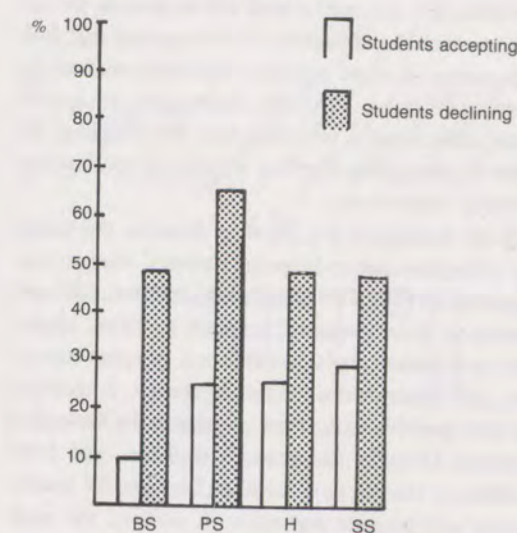
graduate recruitment: our study makes it clear that there are many other factors that enter into an applicant's choice of graduate school. Nevertheless, the University is far from the ideal situation in which every applicant it wishes to attract is able to make a decision regarding the University of Chicago on academic grounds alone. Financial aid policy is discussed more fully in a later section of this chapter.

Better Statistical Information. At several stages of this inquiry we have been confronted with the problems of determining if any changes in student quality have taken place, in individual departments, in Divisions, in the University. We have been frustrated by the lack of any uniformly available objective measure of quality, even one so open to problems of interpretation as the scores on past Graduate Record Examinations. *To ameliorate this situation for the future, we recommend that the statistical function of the office of the Dean of Students be enlarged to include the maintenance of records of whatever indicators of student quality regularly arrive at the University, including department averages of standardized test scores for both applicants and newly matriculated students. We further recommend the biennial repetition of a survey of applicants to the University, modeled after that performed by this Commission (but involving only a subset of the questions we used and a random sample of applicants).*

B. Progress Toward the Ph.D.

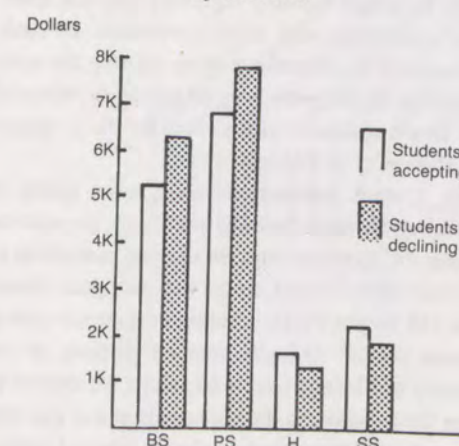
In addition to its study of applicants admitted to the University for graduate work beginning in 1980-81,

FIGURE 9: Proportion of Respondents Also Admitted to One or More of Seven Graduate Schools Selected for Comparison in Each Division, by Division



Based on Appendix B

FIGURE 8: Mean Financial Aid Offered to Applicants (1980-81) by Division



Based on Appendix B, Table 8

TABLE 1: PERCENT SELECTING THE UNIVERSITY OF CHICAGO AMONG RESPONDENTS ADMITTED TO ONE OR MORE OF EIGHT GRADUATE SCHOOLS: THE UNIVERSITY OF CHICAGO AND SEVEN OTHER DISTINGUISHED GRADUATE SCHOOLS SELECTED FOR COMPARISON, BY DIVISION (1980-81)

Percent Selecting U.C.*	Number of Distinguished Graduate Schools Admitting Respondents in Addition to the University of Chicago			
	One	Two	Three	Four
Biological Sciences Div.	17	25	0	—
Physical Sciences Div.	36	23	18	25
Humanities Div.	39	30	0	0
Social Sciences Div.	50	24	35	20
Criterion Value	50	33	25	20

*Percent of those choosing to attend either The University of Chicago or one of the seven other distinguished graduate schools. Some percents are based on relatively small numbers. See Appendix B, Table 9A.

this Commission also surveyed a sample of all in-resident students registered in the Winter Quarter of 1981. The results of that survey are briefly considered here. They are presented in more detail in Appendix B.

Student Satisfaction with the University

Though there were some Divisional differences, the registered students who responded to our survey were largely satisfied with the University's research facilities, academic programs, faculty quality, opportunities for interdisciplinary study, quality of students, and opportunities for contact with other students (see Appendix B, Tables 27-29). However, at least 20 percent stated that they were not satisfied with the quality of departmental communications (in every Division except the Physical Sciences Division), with the quality of classroom teaching (in the Physical Sciences Division), with opportunities for contact with faculty and the level of faculty interest in students (in the Social Sciences Division), and with the quality of academic advising (in the Humanities and Social Sciences Divisions).

The registered students in our sample were also asked to identify the characteristics they considered most important in a graduate school and to indicate the extent to which the University of Chicago had met their expectations in these respects. Their responses are illustrated in Figures 10A-10D. Once again, the institutional characteristics are listed from left to right in the order of importance ascribed to them by the relevant group of respondents.

In the Biological and Physical Sciences Divisions, the University met or exceeded students' expectations regarding all five of the characteristics considered most important: faculty quality, research facilities, opportunities to pursue one's own research, program reputation, and opportunities for faculty contact. It received the most positive rating from students in the Biological Sciences Division for research facilities, and from students in the Physical Sciences Division for faculty quality and program reputation; it received the most negative rating from students in both these Divisions for the quality of social life on campus.

In the Humanities Division, the University met or

exceeded students' expectations regarding only three of the five characteristics considered most important: faculty quality, opportunities to pursue one's own research, and opportunities for faculty contact. It failed to meet expectations regarding program reputation and financial aid. It received its most positive rating for the quality of library facilities and its most negative rating for opportunities to obtain teaching experience.

In the Social Sciences Division, the University also met or exceeded students' expectations regarding only three of the five characteristics they considered most important: faculty quality, opportunities to do one's own research, and program reputation. It failed to meet expectations regarding opportunities for contact with faculty and financial aid. As in the Humanities Division, it received its most positive rating for the quality of library facilities and its most negative for opportunities to obtain teaching experience.

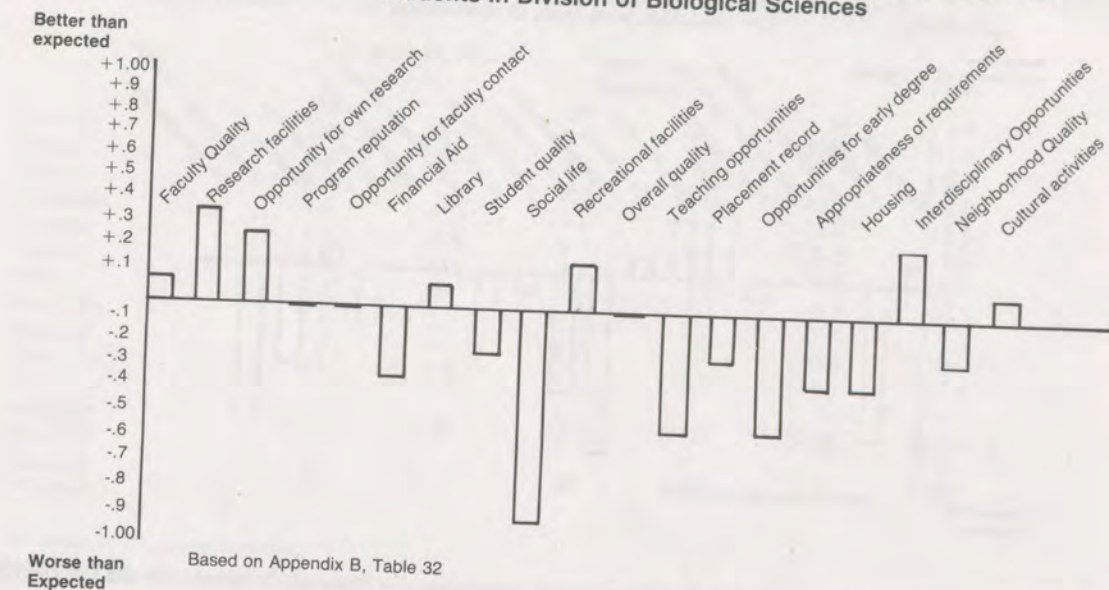
We urge faculty in the four Divisions to consider these matters with some care in the course of the process of self-evaluation recommended earlier in Chapter 2 of this report.

Advancing toward the Degree

Our survey of currently registered students had one serious limitation. It did not include the many graduate students no longer formally registered who are nevertheless continuing with their dissertation research. Some sense of the importance of considering the needs and interests of this group may be gained by reflecting on the length of time it takes to earn the Ph.D. degree at the University of Chicago.

Table 2 offers information on the mean length of time elapsed between the B.A. and Ph.D. for students receiving the doctorate from ten selected institutions in the period 1958-74, and on the national mean (based on the 145 largest Ph.D. granting institutions) during the same period. Overall, doctoral students at the University of Chicago tend to be among the slowest to receive their degree. In the mathematical and physical sciences the differences among the ten selected institutions are not great, though one or two institutions (Princeton and MIT) do have a shorter mean time to degree than the others. In the humanities, Chicago has

FIGURE 10A: Evaluation of the University as Compared with Expectations, Students in Division of Biological Sciences



one of the longest times to degree: only Columbia's is longer; Berkeley's is slightly shorter. In the biological and behavioral sciences, there are clear sex differences: for male students, Chicago belongs in a moderately slow group of institutions; for female students, it is among the very slowest.

These data offer no more than a crude basis for comparison, since they are based only on the average time elapsed between the bachelor's and doctoral degrees without controlling for possible variations in the average length of time intervening between college graduation and the commencement of graduate study, or in the proportion of part-time students. They offer no

precise evidence regarding the actual time it may take to receive a degree at any particular institution. In order to establish more exact data for the University of Chicago, we have gathered information regarding students who received the Ph.D. in three selected years: 1970-71, 1975-76, 1980-81. The resulting statistics are presented in Table 3.

Because the distribution of time to degree is highly skewed—particularly in the Humanities and Social Sciences Divisions, where there is a wide range between the shortest and the longest time taken to degree—the median is a sensible measure to consider in this table. Figure 11 illustrates the median length of

FIGURE 10B: Evaluation of the University as Compared with Expectations, Students in Division of Physical Sciences

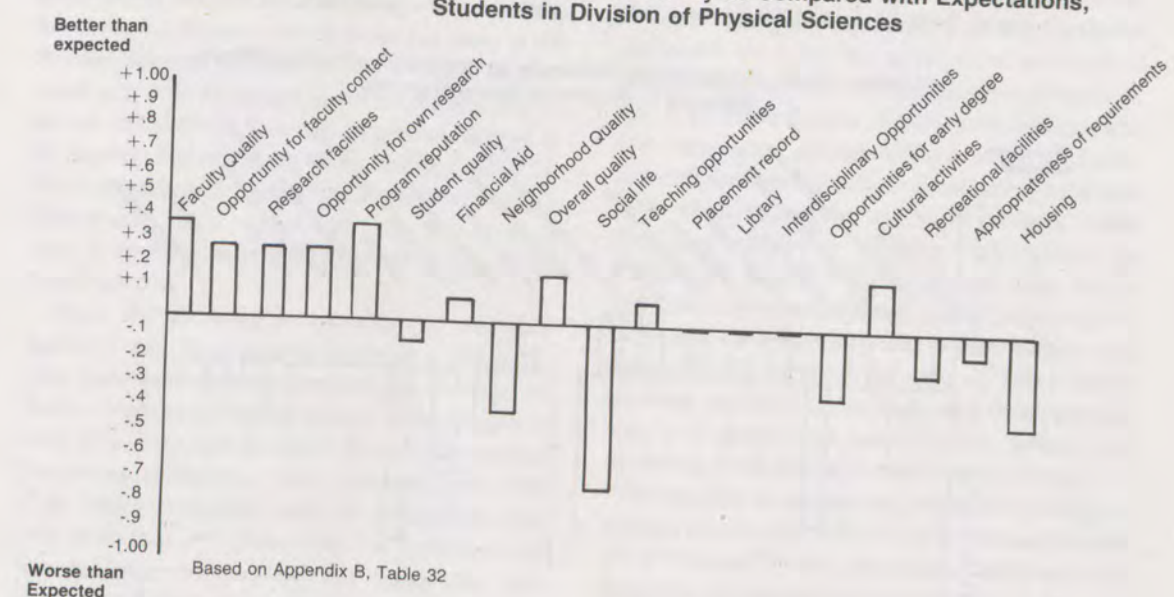
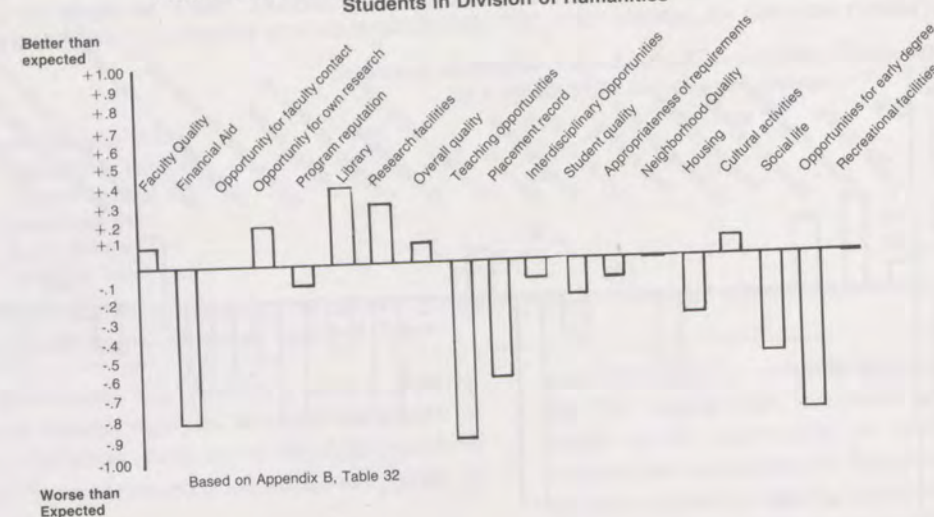


FIGURE 10C: Evaluation of the University as Compared with Expectations, Students in Division of Humanities



time from matriculation to graduation for students who received the Ph.D. in each of the three selected years. Its most dramatic aspect is the substantial increase in the length of time to degree in Humanities and Social Sciences in the last decade. Half of the students who received their Ph.D. in the Humanities Division in 1980-81 had taken longer than 8.2 years, as compared with eight years in 1975-76 and 6.3 years in 1970-71. Half of those who received the Ph.D. in the Social Sciences Division in the same year had taken longer than 7.7 years, as compared with 6.5 years in 1975-76 and 5.8 years in 1970-71.

The median length of time to degree was substantially shorter in the Biological and Physical Sciences Divisions, and after increasing quite dramatically between 1970-71 and 1975-76 it leveled off in Biological Sciences between 1975-76 and 1980-81 and fell

somewhat in Physical Sciences. In the Biological Sciences Division, half of the students who received their Ph.D. in 1980-81 had taken less than 5.5 years, as compared with 5.5 years in 1975-76 and 4.8 years in 1970-71. In the Physical Sciences Division, half of the students who received the Ph.D. in 1980-81 had taken less than 5.4 years, as compared with 6.1 years in 1975-76 and 4.9 years in 1970-71.

These figures include all students receiving the Ph.D. in the three selected years, whether or not they had begun their graduate work at the University with a master's degree. Students who had entered with a master's degree did tend to take a shorter time to degree than those who had not (most notably in the Humanities Division), but the median length of time to degree for those students who had entered with a master's degree also increased between 1970-71 and

FIGURE 10D: Evaluation of the University as Compared with Expectations, Students in Division of Social Sciences

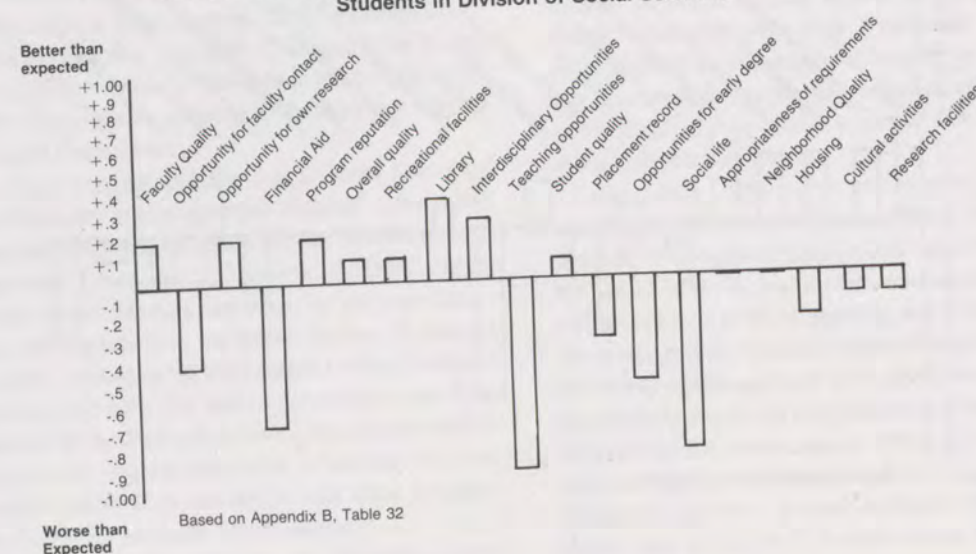


TABLE 2: MEAN NUMBER OF YEARS FROM BACHELORS DEGREE TO DOCTORATE PH.D. GRADUATES FROM TEN SELECTED UNIVERSITIES (1958-74)

	Eng/Math/Phys Sciences		Bio/Beh Sciences		Humanities	
	M	F	M	F	M	F
Berkeley	7.0	6.6	8.9	10.0	10.2	11.3
Brown	6.8	7.9	7.4	7.7	8.7	9.9
Chicago	6.9	7.2	8.6	10.4	10.7	12.0
Columbia	7.8	8.0	10.8	11.1	12.0	12.6
Cornell	6.7	6.8	8.3	9.1	8.6	9.0
Harvard	6.8	8.3	8.3	8.8	9.4	9.9
MIT	6.2	5.9	7.1	7.1	6.3	6.5
Princeton	5.8	5.5	7.3	7.5	7.8	7.1
Stanford	7.6	6.5	8.2	7.7	9.8	10.8
Yale	6.4	6.8	7.2	8.0	7.9	7.8
National Average*	8.03	7.98	8.67	10.07	10.66	12.26
Standard Deviation	1.23	1.37	1.42	2.05	1.74	2.02

*145 largest Ph.D. granting institutions

SOURCE: *A Century of Doctorates* (National Academy of Sciences, Washington, 1978, Tables 42-43).

1980-81 by about the same amount as those who had entered without a master's degree (see Table 4).

The reasons for these increases are not immediately clear, though we may assume that they are related to the disruption of the patterns of financial support and academic placement that had come to be regarded as normal in the 1950s and 1960s. But their effect has been to open even wider the gap between the time taken to earn a Ph.D. in the Biological and Physical Sciences Divisions on the one hand, and in the Humanities and Social Sciences Division on the other. As Table 5 shows, of the students who received the doctorate in 1980-81, 82 percent of those earning their degree in the Biological Sciences and 69 percent of those in the Physical Sciences had taken six years or less, as compared with only 34 percent in the Humanities and 27 percent in the Social Sciences; 94 percent of those in the Biological Sciences and 90 percent of those in the Physical Sciences had taken no more than eight and a quarter years, as compared with only 56 percent of those in the Humanities and 57 percent of those in the Social Sciences.

These are disturbing comparisons, all the more serious in the light of the data illustrated in Figure 12. This figure shows the mean length of time to degree for doctoral students graduating in each of the four Divisions in the three selected years, divided into the mean proportions of that time spent registered, with FTC (Full Time Certification) status, or unregistered. Not only do students in the Humanities and Social Sciences take far longer to complete their degree than their peers in the Biological and Physical Sciences, but they

spend far greater proportions of that time without any formal link with the University. On average, students graduating in 1980-81 in the Humanities and Social Sciences had spent less than four years with a formal registration of some kind; but they had spent almost five additional years without any registration.

In the years of academic expansion, doctoral candidates in the Humanities and Social Sciences who had finished their course requirements and were working on their dissertation were often able to find academic positions. The obligations of such positions may have slowed progress toward the degree, but they tended in exchange to provide doctoral candidates with the financial means, the intellectual and moral support, and the institutional incentive, to complete their dissertation. This is no longer the case. The doctoral candidate who finds an academic position before he or she has a completed dissertation is a rarity in an increasing number of fields in the Humanities and Social Sciences. Many must now attempt to complete their research as unregistered students with no formal status in the University and in an ill-defined position on its margins. They may have relatively little regular contact with their professors and peers, and relatively little of the intellectual and moral support that comes from such contact. It is perhaps not surprising that difficult and demanding work may lag under these conditions.

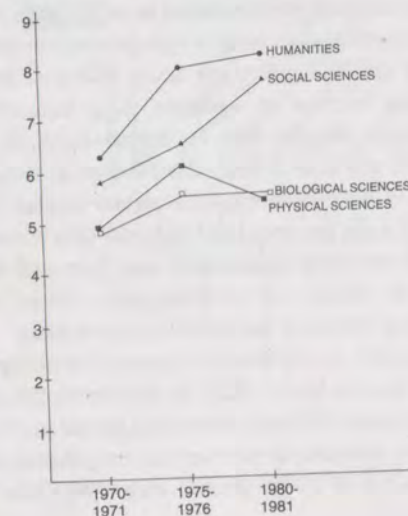
We regard it as essential, as a means of reducing the average time to earn a Ph.D. in the Humanities and Social Sciences Division, to provide a clearer and more supportive institutional environment for graduate student research at the dissertation stage. We offer the

TABLE 3: YEARS FROM MATRICULATION TO GRADUATION, PH.D. GRADUATES, UNIVERSITY OF CHICAGO, IN THREE SELECTED YEARS

	1970-71	1975-76	1980-81
Biological Sciences			
(Number of Ph.D.s)	(46)	(41)	(49)
Mean	4.9	6.0	5.4
(Standard Deviation)	(1.5)	(2.1)	(1.6)
Median	4.8	5.5	5.5
Mode	3.8	4.5	5.5
Range	6.5	10.5	7.8
Physical Sciences			
(Number of Ph.D.s)	(87)	(46)	(61)
Mean	5.2	6.2	5.8
(Standard Deviation)	(1.6)	(2.0)	(2.0)
Median	4.9	6.1	5.4
Mode	4.7	6.2	4.2
Range	8.2	10.5	10.5
Humanities			
(Number of Ph.D.s)	(77)	(65)	(60)
Mean	7.8	7.8	8.4
(Standard Deviation)	(4.1)	(3.0)	(4.2)
Median	6.3	8.0	8.2
Mode	5.8	5.0	5.8
Range	19.0	14.8	26.0
Social Sciences			
(Number of Ph.D.s)	(173)	(175)	(144)
Mean	7.1	7.7	8.4
(Standard Deviation)	(4.1)	(4.0)	(3.9)
Median	5.8	6.5	7.7
Mode	4.0	5.8	6.2
Range	23.5	28.0	23.0

following recommendations with these ends in view. Revised Tuition and Residency Requirements We have already suggested the desirability of reducing course requirements for the Ph.D. as a means of encouraging students to engage in their doctoral research as quickly, as clearly, and as self-consciously as possible. We believe that this change would lead to a healthier emphasis on the research stage of graduate

FIGURE 11
MEDIAN NUMBER OF YEARS FROM MATRICULATION TO GRADUATION, PH.D. GRADUATES IN FOUR DIVISIONS, IN THREE SELECTED YEARS



student work, and could be an important factor in shortening the average length of time of degree.

The effects of such a change would be enhanced by a tuition structure more sensitive to the actual rhythm of doctoral study than our current twenty-seven course requirement. Earlier in this report, we suggested the desirability of substituting a residency requirement for a course requirement as the basis of tuition calculations, in order to encourage students to proceed more directly to their dissertation research. We wish now to elaborate on that recommendation by suggesting an arrangement that would also encourage students to remain in residence longer than the three years usually implied by the current twenty-seven course requirement, thereby benefitting more fully from the institutional and intellectual resources of the University at the crucial research stage of their graduate careers.

The arrangement we recommend is as follows:

- Candidates for the Ph.D. will be required to register for the equivalent of nine quarters in residence at full tuition. This residency requirement will, as recommended earlier, replace the current twenty-seven course requirement as the basis for calculating tuition costs. Payment of full tuition in any given quarter will entitle a student to take as many courses as he or she wishes, subject only to such restrictions as departments feel it necessary to establish on educational grounds.

TABLE 4: MEDIAN NUMBER OF YEARS FROM MATRICULATION TO GRADUATION, PH.D. GRADUATES IN FOUR DIVISIONS, ENTERING WITH AND WITHOUT MASTERS DEGREES, IN THREE SELECTED YEARS

A. By Year of Graduation	1970-71	1975-76	1980-81
Entered with Master's	5.0	6.0	5.8
(Number of Ph.D.s)	(91)	(79)	(85)
Entered without Master's	5.7	6.5	6.6
(Number of Ph.D.s)	(292)	(252)	(229)
B. By Division			
(over three selected yrs.)			
Entered with Master's	B.S. 4.6	P.S. 4.6	H. 5.9
(Number of Ph.D.s)	(37)	(30)	(40)
Entered without Master's	5.4	5.4	7.6
(Number of Ph.D.s)	(99)	(164)	(166)

- Students who have satisfactorily completed six quarters in residence—and who have been formally admitted to doctoral research—may substitute a further six quarters of residency at half tuition for their remaining three quarters of residency at full tuition. Assuming a normal pattern of three quarters in residence per year, students opting for this arrangement will therefore have two years of residency at “high tuition” (roughly corresponding to two years of initial course work and/or the completion of the M.A.), followed by two years of residency at “low tuition” (in which they will be engaged in research for the dissertation).*
- Students who have completed payment of full tuition for nine quarters of residency (or its equivalent under the option described in the preceding paragraph may continue formal residency until the Ph.D. is conferred by maintaining FTC (Full Time Certification) status at a reduced fee.
- Students no longer in residence who remain active candidates for the degree will be expected to maintain their official status as such by a form of continuous registration (at a nominal fee) and by regular quarterly reports on the progress of their dissertation. Unless explicit permission is granted to the contrary, students who have not submitted an acceptable dissertation within five years of their formal admission to doctoral research will be dropped from active candidacy for the degree.

*There would, of course, be a one-time cost to the University involved in introducing such an arrangement. We have secured a preliminary estimate of this cost, based on the following assumptions:

- Only third-year graduate students without financial aid or those receiving less than full tuition awards would be eligible to spread their tuition payments over the third and fourth years;
- Seventy-five percent of those eligible would choose this option;
- Students choosing this option who have partial tuition awards would be able to apply one-half of the award each year. On the basis of 1981-82 data, the net cost to the University of introducing this change would be \$102,000.

The foregoing provisions assume that graduate students are engaged in full-time study. However, it would be relatively easy to adapt them to meet the needs and purposes of part-time students, who now represent a substantial percentage of the graduate students registered. One way of doing this would be to allow part-time students to pay a set tuition fee per course until they had paid the equivalent of six quarters of residency at full tuition, after which the provisions suggested above in paragraphs (ii) and (iv) would come into effect for them as for full-time students. Another way would be to regard payment of tuition for a full quarter's residency as entitling a student either to take as many courses as he or she wished in a given quarter, or to take up to a designated number of courses in successive quarters. Again, choice of this latter option could continue until a part-time student had paid the equivalent of six quarters of residency at full tuition, after which the same provisions would apply as for full-time students.

A Context for Advanced Graduate Research

The possibility of extending their period of residence in the University while working on their dissertation is likely to be attractive to advanced graduate students, and to enhance their progress toward the Ph.D., to the extent that they are also offered a supportive and stimulating institutional context for their continued research. The need for such a context has been emphasized earlier as one of the principal weaknesses of the current organization of graduate education in the Humanities and Social Sciences Divisions, and the proposal to create a Research Institute structure to meet this need is elaborated more fully in a later chapter of this report.

Physical environment is also important in this respect. Graduate students in the Humanities and Social Sciences with whom we talked frequently complained of the lack of suitable work space for advanced research. Unlike students in the Biological and Physical Sciences, few of them have assigned office or study space of any kind; and they have no equivalent of the laboratory to provide

TABLE 5: YEARS FROM MATRICULATION TO GRADUATION, BY YEAR OF GRADUATION, PH.D. GRADUATES IN FOUR DIVISIONS, IN THREE SELECTED YEARS

	1970-71	1975-76	1980-81
Biological Sciences			
Fewer than 5 years	52%	37%	39%
5 to 6 years	30	24	43
6 1/4 to 8 1/4 years	15	27	12
8 1/2 years	2	8	6
(Number of Ph.D.s)	(46)	(41)	(49)
Physical Sciences			
Fewer than 5 years	48%	30%	36%
5 to 6 years	28	20	33
6 1/4 to 8 1/4 years	20	39	21
8 1/4 or more years	5	11	10
(Number of Ph.D.s)	(87)	(46)	(61)
Humanities			
Fewer than 5 years	14%	20%	12%
5 to 6 years	32	14	22
6 1/4 to 8 1/4 years	27	22	22
8 1/2 or more years	26	44	45
(Number of Ph.D.s)	(77)	(69)	(60)
Social Sciences			
Fewer than 5 years	31%	23%	12%
5 to 6 years	24	23	15
6 1/4 to 8 1/4 years	20	21	30
8 1/2 or more years	24	33	42
(Number of Ph.D.s)	(173)	(175)	(144)

a physical, as well as a social and intellectual, context for regular interchange among advanced students working in common fields. Unlike some other universities, our library does not provide carrells or specially designated room for students in particular disciplines—an arrangement which serves important intellectual and social functions—and advanced graduate students are left to compete with undergraduates (and an increasing number of Laboratory School students) for often crowded resources in Regenstein Library.

One means of ameliorating this situation would be to provide assigned carrells in Regenstein Library stacks, or in some other areas of the library, for graduate students at the dissertation stage. These would be no more difficult to police in terms of circulation control than the present locked shelves, and could themselves be provided with locked shelves for security purposes. Another means would be to designate particular rooms in the library for research in particular fields, providing them with desks and the appropriate reference works for ready consultation by those utilizing the room for research purposes. We realize that this proposal runs counter to the philosophy that guided the original planning of Regenstein Library, which was to maximize general accessibility of materials for all users by avoiding special purpose collections. But we are not convinced that such a policy best serves the actual needs and interests of researchers, and we urge the Library's Facul-

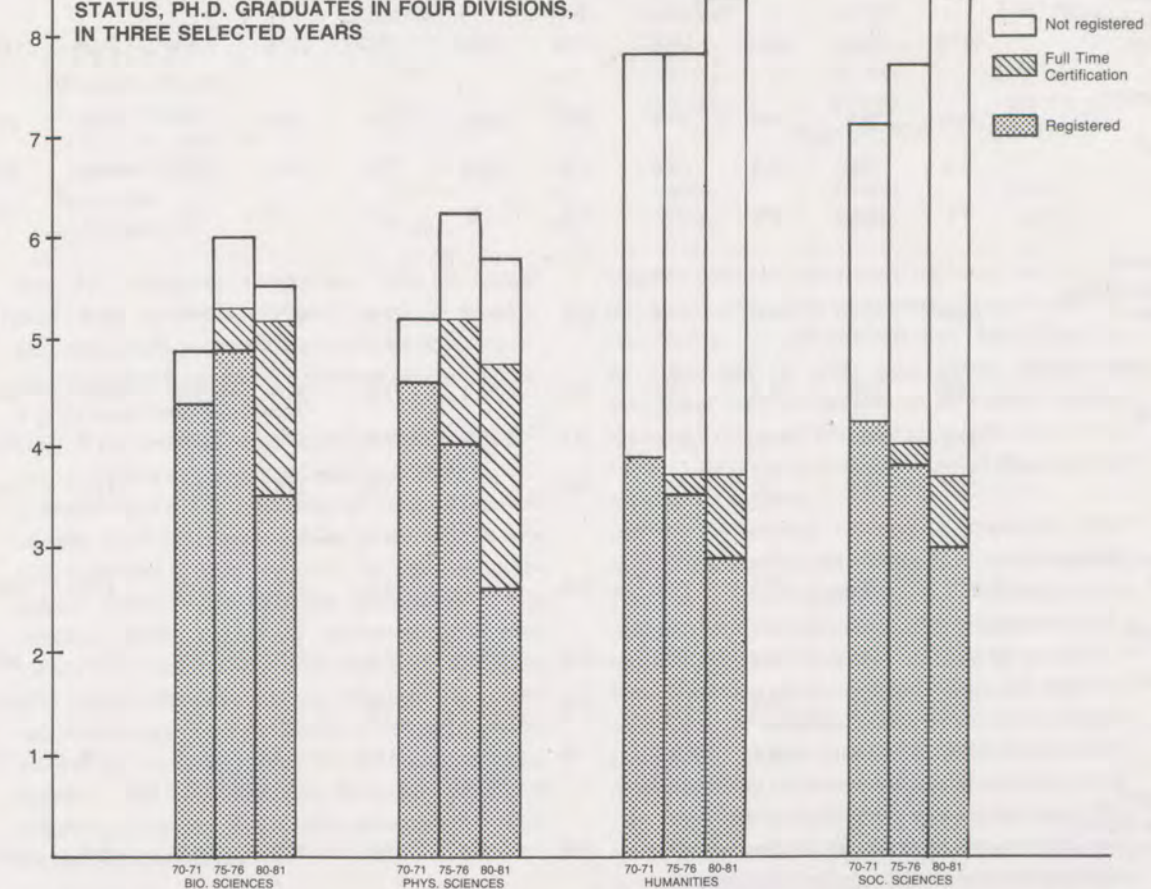
ty Advisory Board to consider this question more fully and to make recommendations to the Director of the Library. Since the building of the new Crerar Library will shortly be opening up space in Regenstein Library for other uses, this would seem to be a propitious time to consider changes.

However, the problem of providing better space for graduate student research should not be considered only in terms of the library. An alternative or complementary approach would be to find space elsewhere on campus that could be used to create studies and common rooms for students in particular fields. Such configurations would provide a natural context for intellectual and social interaction among students with common academic interests, and could be an important factor in reducing the sense of isolation expressed by many graduate students in the Humanities and Social Sciences. There may now be some space on campus that could be adapted for this purpose (the old library stacks in Wieboldt Hall have been mentioned in this regard) and more may become available as a result of the new building that is now planned or underway. *We urge that a high priority be placed on the utilization of space on campus, as it becomes available, to provide more adequate facilities for graduate student research.*

A Graduate Student Center

When we asked a sample of in-residence students to

Figure 12: MEAN NUMBER OF YEARS FROM MATRICULATION TO GRADUATION, DIVIDED BY REGISTRATION STATUS, PH.D. GRADUATES IN FOUR DIVISIONS, IN THREE SELECTED YEARS



compare their experience of the University with their expectations, the quality of social life on campus shared the most negative rating of all the factors the respondents were asked to consider. We expect the planned renovation of Ida Noyes Hall to provide considerably improved social and recreational facilities on campus, from which graduate students will benefit among others. However, there is—and current plans for Ida Noyes envisage—no clearly defined center for graduate student life on campus, and it seems appropriate to consider the desirability of creating one.

It is, of course, possible to argue that graduate students as a group have relatively little need for a common social center. It can be pointed out that they are older and more mature; many of them are married; some have families: as a result, they are less likely to need the kind of common center of social activity that may be appropriate for undergraduates. It can be argued that social interaction among graduate students emerges naturally from shared intellectual concerns, and varies naturally according to the differing intellectual needs and styles of work in the different fields or disciplines, in such a way that a graduate student center would have relatively little function. According to this view, University resources would

therefore be much better spent on improving the institutional contexts for graduate student research in particular fields and disciplines than on a more general Graduate Student Center.

While agreeing that improvement of the contexts for graduate student research should receive the higher priority, however, we do not wish to lose sight of the benefits that might be expected to accrue from the creation of a Graduate Student Center, particularly at the current time. In the present circumstances, graduate students in the arts and sciences must maintain a commitment to difficult and demanding work in a relatively discouraging national environment. They face difficult career decisions in a relatively uncertain climate. They need opportunities to consider intellectual issues that embrace many fields and disciplines. They need occasions to explore common problems of graduate student life formally and informally. They need a place to meet, to relax, to pursue common cultural and social interests. One way of serving these needs would be to designate a residence hall as a Graduate Student Center in which the dining and other facilities would be open to all registered graduate students and their families. An imaginative Resident Master with a modest budget could create an

TABLE 6: FELLOWSHIP AID BY DIVISION (1970-1982)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Biological Sciences												
Aid per student enrolled as % of tuition	197%	181%	185%	156%	139%	118%	138%	122%	124%	115%	132%	137%
Total aid												
% from University sources	19%	21%	20%	29%	24%	22%	22%	25%	17%	15%	17%	20%
% from Federal sources	75%	71%	71%	66%	70%	76%	77%	75%	82%	84%	80%	76%
% from Other sources	7%	8%	9%	5%	7%	1%	1%		1%	1%	3%	4%
Physical Sciences*												
Aid per student enrolled as % of tuition	100%	72%	91%	83%	62%	63%	68%	61%	70%	71%	71%	67%
Total aid												
% from University sources	56%	51%	73%	77%	72%	74%	73%	62%	60%	60%	69%	80%
% from Federal sources	34%	37%	20%	17%	18%	16%	16%	17%	22%	21%	16%	8%
% from Other sources	10%	12%	6%	6%	10%	11%	12%	21%	19%	19%	15%	12%
Humanities												
Aid per student enrolled as % of tuition	91%	69%	65%	54%	41%	36%	45%	37%	41%	45%	50%	48%
Total aid												
% from University sources	40%	45%	52%	58%	69%	70%	76%	72%	74%	69%	60%	76%
% from Federal sources	29%	27%	20%	19%	14%	14%	20%	16%	15%	16%	13%	11%
% from Other sources	31%	29%	27%	22%	17%	7%	4%	12%	11%	15%	27%	14%
Social Sciences**												
Aid per student enrolled as % of tuition	113%	101%	86%	68%	52%	48%	45%	39%	41%	45%	48%	52%
Total aid												
% from University sources	23%	30%	29%	36%	40%	46%	48%	48%	55%	59%	65%	66%
% from Federal sources	54%	43%	37%	32%	37%	36%	39%	38%	34%	31%	23%	23%
% from Other sources	23%	27%	34%	32%	23%	18%	14%	14%	12%	10%	12%	11%

*At least half the students in the Physical Sciences Division are supported by research assistantships funded by federal research grants awarded to their faculty sponsors. These assistantships are not included in these figures. As a result, the average support of students in the Division of Physical Sciences, and the proportion they received in support from federal sources, is seriously understated (see Table 7).

**Figures in the Division of Social Sciences through 1974-75 include the then existing School of Education.

Notes: Figures available since 1979-80 include funds received via "agency billings" not previously included in these data. For purposes of comparison with previous years, these amounts have been excluded from calculations of the percentages of aid received from various sources in 1979-80 and the following years.

Beginning in 1981-82, a new method of charging tuition payments of research assistant against research grants was introduced. Figures presented have been adjusted for purposes of comparison with previous years.

environment in such a center, and arrange a schedule of events both formal and informal, that could be both stimulating and supportive. We recommend further exploration of the feasibility of such an arrangement.

C. Financial Aid

The essential problem in considering financial aid policy stems from the fact that it may be used to serve a variety of conflicting goals, each of which suggests a different financial aid strategy. It might therefore be useful to begin our discussion of financial aid by reviewing each of these possible goals in turn and asking

how effectively the University has been able to fulfill them. Our recommendations regarding financial aid then begins on page 48.

Goals of Financial Aid Policy Recruitment

Goal 1: Recruiting the best applicants. Financial aid is critical in our competition with other universities for the very best applicants. Since size and assurance of continuation of the award are both important considerations for prospective students, the most effective way to attract the best applicants would be to offer guaranteed multi-year awards at least equal to those of-

TABLE 7: SUMMARY OF AID IN THE FOUR DIVISIONS (1981-82)

DIVISION	3rd Week Enrollment	No. Aided	(Percentage of Enrolled)	Average Award	(Percentage of Tuition)
Biological Sciences	272	263	(97%)	\$9,365	(149%)
Physical Sciences (including research assistantships)	351	351	(100%)	\$5,870 (app. \$9,500)	(93%) (app. 151%)
Humanities	539	325	(60%)	\$5,040	(80%)
Social Sciences	1,016	653	(64%)	\$5,080	(81%)

ferred by comparable universities. Thus the logical strategy in pursuit of this goal would be to offer guaranteed multi-year awards to every applicant we admit, and to admit no applicant to whom we cannot offer a guaranteed multi-year award.

Goal 2: Recruiting the most good applicants. One difficulty in pursuing the strategy implied in Goal 1 is that it would deprive the University of necessary tuition income. Another is that our ability to identify the very best applicants in many fields is far from being absolutely reliable. Concentrating financial aid in a relatively small number of guaranteed multi-year awards may therefore lead to the exclusion of students with greater potential than those admitted. These considerations suggest the desirability of offering a greater number of smaller awards to incoming students, together with the prospect of more substantial fellowship aid for those who subsequently prove themselves most capable.

Support of in-residence students

Goal 3: Supporting the best students in residence. The most promising applicants do not always turn out to be the best students. Thus there is a clear conflict between the need to commit funds in order to attract the most promising applicants and the need to maintain flexibility in the subsequent disposition of fellowship funds in order to reward and encourage those who prove themselves to be the most capable students. This latter goal, consistently pursued, would require that in-residence students compete each year for fellowship funds allocated according to merit. Such a policy was favored by a substantial minority of the students surveyed in the Humanities (31 percent) and Social Sciences (38 percent) Divisions.

Goal 4: Supporting the most good students in residence. The argument here is that we should support as many as possible of those students who have committed themselves to graduate study and demonstrated their capacity to carry it out. Such a policy was favored by almost half of the students surveyed in the Humanities (41 percent) and Social Sciences (47 percent) Divisions, who agreed with the view that there should be many partial tuition awards rather than a few full tuition awards. Logically pursued, this goal would

suggest a policy of a guaranteed minimum level of support for all needy students in good academic standing. Like Goal 3, this goal conflicts with Goals 1 and 2 to the extent that the latter place greater priority on recruitment than on support of in-resident students beyond the first year. This goal also conflicts with Goal 3 to the extent that it makes need rather than merit the criterion for support.

Goal 5: Advancing dissertation research. Since dissertation research and writing lie at the heart of the Ph.D. as a research degree, it is therefore important to support students at this stage of their graduate work in a way that will allow them to concentrate the greater part of their attention on research and writing and maximize their ability to complete a dissertation of the highest quality. The students surveyed in every Division were overwhelmingly in favor of a policy of providing financial support for students at the dissertation stage. This goal clearly conflicts with those previously discussed, to the extent that it implies a shift of financial resources from support of student at an earlier stage of graduate work to support of those at a later stage. But support to students early in their careers is valuable only to the degree that they are able to bring their work to fruition in a completed dissertation of high quality.

Goal 6: Predictability. Whatever the purposes of financial aid, they are most likely to be achieved if our policies are stated clearly in such a way that their results are predictable. Financial aid serves educational goals to the extent that students can understand the basis upon which it is disbursed and can count on predictable consequences of their academic performance. A relatively large proportion of the students surveyed (between 30 percent and 53 percent, depending on Division) felt that they did not understand the basis upon which financial aid is awarded.

Patterns of Financial Aid

Not surprisingly, current financial aid policies represent an effort to combine and balance the claims and implications of all the foregoing goals. Thus one way of considering current policies is to ask how effectively the University has been able to meet each of these goals in turn. Before doing that, however, it will be useful to review some general characteristics of fellowship sup-

port at this University compared with others, and to consider some of the important trends that have occurred over the past decade.

We can begin with comparative data for the year 1979-80, recently gathered from seventeen institutions participating in a study of the financing of graduate education, under the auspices of the Consortium on the Financing of Higher Education (COFHE). According to this study, the University of Chicago is the sixth highest among these seventeen institutions in average cost of attendance and the sixth lowest in the proportion of average financial requirements covered by fellowship or other institutional support (excluding loans). In each of the five universities lower than Chicago in this latter category, average financial requirements are significantly smaller than our own. Graduate students at Chicago pay a larger proportion of average financial requirements from personal and loan funds than do graduate students at most other private universities participating in the COFHE study*. However, The University of Chicago may suffer in this comparison as a result of the way average tuition requirements are calculated: since students here are not required to maintain a continuous registration status until completion of their degree, average tuition requirements (the average tuition paid by all students registered, whatever their status) may appear higher than elsewhere.

We can consider some of the principal trends in financial aid at the University of Chicago by turning to Table 6, which shows fellowship support by Division from 1970 to 1981. In analyzing this table it is important to note that it has some serious limitations owing to the nature of the data. First, it does not include research assistantship salaries paid to students from federal research grants to their faculty sponsors: since this is a major source of support in the Physical Sciences Division, the level of support in that Division (and the proportion of support from federal funds) is seriously understated. Second, figures available since 1979-80 include funds received via "agency billings" not previously recorded in this form. To standardize the basis of comparison with earlier years, these sums have been omitted: as a result, there is a slight tendency to overstate the proportion of fellowship aid contributed from University sources.

Despite these difficulties in interpreting the available data, Table 6 indicates some fairly clear long-term trends in financial aid patterns since 1970. It is first important to recognize that the structure of financial support in the natural sciences at the national level, and the terms of competition for the best students in these sci-

*In addition to the University of Chicago, other participating institutions included Berkeley, Brown, Cornell, Duke, Harvard, Illinois, MIT, Michigan, North Carolina, Northwestern, Ohio State, Princeton, Stanford, Washington, Wisconsin, Yale.

ences, are such that the patterns of financial aid in the Biological and Physical Sciences Divisions are quite different from those in the Humanities and Social Sciences Divisions. For most purposes, we must regard the University as operating with two quite different financial aid policies rather than one. The summary of aid in the Divisions for 1981-82 (Table 7) makes this quite clear. Virtually all (97 percent) of the students in the Biological Sciences Division, and all of the students in the Physical Sciences Division, receive financial aid, with the average aid package (including research assistantship salaries) amounting to about 150 percent of current tuition. The national conditions of graduate study in the biological and physical sciences on the one hand, and the humanities and social sciences on the other, seem to make this disparity unavoidable.

Nevertheless, Table 6 suggests a decline for all Divisions in the average amount of fellowship aid per student enrolled (expressed as a percentage of the cost of tuition) which reached its nadir in 1979-80. Since that date, there has been a recovery largely attributable to increased allocation of University resources to financial aid, but the average amount in 1981-82 is still significantly lower in proportion to tuition than it was in 1970-71. The pattern is particularly clear in the Humanities and Social Sciences Divisions, where the average fellowship awards are lower and there are few federal funds for research assistantships to supplement them. In the Humanities Division, average fellowship aid per student enrolled expressed as a percentage of tuition fell from 91 percent in 1970-71 to 48 percent in 1981-82. In the Social Sciences Division, it fell from 113 percent in 1970-71 to 52 percent in 1980-81.

The data showing the percentage of fellowship aid in these Divisions received from various sources must be a matter of no less serious concern to the University. In both the Humanities and Social Sciences Division, the proportion of financial aid received from external sources has declined since 1970, and the proportion assumed by the University has risen accordingly. Much of the decline in the proportion of external fellowship support results from a reduction in the relative amount received from federal sources. In the Humanities Division, fellowship aid from federal sources fell from 29 percent in 1970-71 to 11 percent in 1981-82, while aid from other external sources fell from 31 percent to 27 percent (reaching a low of 4 percent in 1976-77). Support from University resources accordingly increased from 40 percent to 76 percent. In the Social Sciences Division, the proportion of fellowship aid from University resources also increased substantially, from 23 percent in 1970-71 to 66 percent in 1981-82; support from federal sources fell from 54 percent to 23 percent in the same period, while support from other external sources fell from 23 percent to 11 percent. There is a

TABLE 8: GRADUATE STUDENT LOANS (1975-81)¹
BY DIVISION

	1975-76	1976-77	1977-78 ²	1978-79 ³	1979-80	1980-81
Biological Sciences						
% of eligible borrowers	10%	9%	14%	5%	22%	16%
Average loan amount (\$)	2,001	2,443	2,645	2,247	2,467	3,391
(As % of tuition)	(59%)	(67%)	(67%)	(52%)	(52%)	(63%)
Physical Sciences						
% of eligible borrowers	7%	4%	5%	4%	5%	6%
Average loan amount (\$)	2,188	1,622	2,128	1,683	2,966	3,312
(As % of tuition)	(64%)	(45%)	(54%)	(39%)	(63%)	(61%)
Humanities						
% of eligible borrowers	47%	40%	40%	44%	44%	49%
Average loan amount (\$)	2,430	2,300	2,839	2,925	3,489	3,717
(As % of tuition)	(71%)	(63%)	(72%)	(68%)	(74%)	(69%)
Social Sciences						
% of eligible borrowers	38%	36%	39%	40%	42%	47%
Average loan amount (\$)	2,418	2,477	2,859	2,973	3,751	3,577
(As % of tuition)	(71%)	(68%)	(73%)	(69%)	(79%)	(66%)

1. Includes borrowing under federal and state programs, from the University, and from private sources known to the Office of Student Loan Counseling. The number of students borrowing, and the average amount borrowed, are subject to the restrictions established by individual loan programs, which have varied over time.

2. Basis for calculating the percentage of eligible borrowers is slightly smaller than in other years.

3. As of this date, short-term emergency loans were no longer included in the available data. Their omission reduces the percentage of borrowers and increases the average loan amount somewhat in comparison with previous years.

similar trend in fellowship aid in the Physical Sciences Division, though it should be reiterated that Table 6 does not include the federally funded research assistantships in this Division.

Costs of graduate education not met by fellowship or assistantship support must, of course, be assumed by individual students either from personal funds or from loans. Table 8 presents data on student borrowing from federal, state, and University loan programs for the period 1975-76 to 1980-81, as known to the office of Student Loan Counseling. While the level of borrowing in the Biological and Physical Sciences Divisions is relatively low, that in the Humanities and Social Sciences Divisions is already substantial. In 1980-81, 49 percent of the students eligible in the Humanities Division and 47 percent of those eligible in the Social Sciences Division borrowed amounts averaging over \$3500 (65 percent of tuition for that academic year). We have no reliable evidence regarding cumulative loan totals among graduate students.

Most of these loan funds were made available under federal and state loan programs, the future conditions of which are now uncertain.

In summary, the University has been obliged to assume an increasingly large share of the burden of fellowship support in the Humanities and Social Sciences from its own resources, in order to compensate for the decline in support from external sources. Despite its ef-

forts, the amount of fellowship support expressed as a percentage of tuition has fallen substantially in these Divisions; and graduate students are borrowing relatively large amounts from governmental loan programs that may now be in jeopardy. Reductions in the federal budget threaten the possibility of a similar pattern emerging in the Biological and Physical Sciences Divisions. There is an urgent need for the University to find renewed sources of fellowship aid to support graduate study.

Current Financial Aid Policies Considered

(i). *The Biological and Physical Sciences Divisions*

In what follows, we shall be largely concerned with financial aid policies as they relate to the Humanities and Social Sciences Divisions. This is not because we regard financial aid in the Biological and Physical Sciences Divisions as any less important, but because the policy issues in these two Divisions seem less problematic. The University is, in effect, already committed to a policy of ensuring full support for students in the natural sciences and draws on a variety of methods and sources of support to do so. We see two principal concerns relating to financial aid in these Divisions.

The first concern is that the University must continue to make financial awards as competitive as possible in order to attract the very best students. Without trying to "buy" the best students in the natural sciences, it should be the aim to make awards that will ensure that their

**TABLE 9: OFFERS AND ACCEPTANCES OF FINANCIAL AWARDS TO INCOMING STUDENTS
HUMANITIES AND SOCIAL SCIENCES (1979-80, 1980-81, 1981-82)**

	Awards Offered	1979-80 Awards Accepted	%	Awards Offered	1980-81 Awards Accepted	%	Awards Offered	1981-82 Awards Accepted	%
Humanities									
Tuition & Stipend	15	6	(40%)	31	9	(29%)	26	15	(58%)
Full Tuition	59	21	(36%)	44	12	(27%)	73	30	(41%)
Partial Tuition	80	37	(46%)	73	24	(33%)	57	24	(42%)
Social Sciences									
Tuition & Stipend	41	7	(17%)	66	20	(31%)	77	24	(31%)
Full Tuition	113	34	(30%)	106	38	(36%)	115	47	(41%)
Partial Tuition	126	60	(48%)	82	30	(37%)	63	28	(44%)

decision regarding the University of Chicago is made on academic rather than financial grounds. The second concern is that the University is dependent for much of the financial support of its students in the Biological and Physical Sciences Divisions on federal funds that may be threatened by current trends in national policy. It is imperative to work with other Universities in emphasizing the importance of public support for scientific research as a matter of the highest national priority, and to seek funds from other sources that will mitigate as far as possible the effects of any sudden changes in federal policy.

(ii). The Humanities and Social Sciences Recruitment

In 1981, the University made an important change in financial aid policy for the Humanities and Social Sciences Divisions by guaranteeing continuation of the support offered to incoming students for three years at the same level, subject to satisfactory academic performance. That decision seems to have been a major factor in the increase in students matriculating in the academic year 1981-82 as compared with the previous year, particularly in the Humanities Division.

Table 9 gives a comparison of offers and acceptances of financial support for students applying to enter the Humanities and Social Sciences Divisions in the academic years 1979-80, 1980-81, and 1981-82. In the Humanities Division, where the overall number of new students increased by 18 percent between 1980-81 and 1981-82, acceptances of tuition plus stipend awards increased from 29 percent in 1980-81 to 58 percent in 1981-82; acceptances of full tuition awards from 27 percent to 42 percent; acceptances of partial tuition awards from 33 percent to 42 percent. These substantial increases make an interesting contrast with the decreases in acceptance rates that occurred in 1980-81, as compared with 1979-80. In 1980-81, an additional allocation of fellowship funds for incoming students in the Humanities Division went unused because admission with aid was nevertheless declined by a larger proportion of the students to whom awards were offered. The very dif-

ferent pattern of acceptances in 1981-82 suggests that assurance of continued aid for successive years of graduate study may be a very significant factor in recruiting the most promising students in the Humanities Division.

In the Social Sciences Division, where the number of new students increased overall between 1980-81 and 1982-83 by 14 percent, the effect of guaranteeing financial aid for three years is also clear, though somewhat less strong. While acceptances of the most substantial awards (tuition plus stipend) remained constant at 31 percent in 1981-82 as compared with 1980-81, despite the new assurance of continued aid for three years, acceptances of full tuition awards increased from 36 percent to 41 percent and acceptances of partial tuition awards increased from 37 percent to 44 percent. In contrast, increasing the amount of aid without assurance of renewal for successive years (as was done in 1980-81) seems to have had some effect on acceptances of tuition and stipend awards (which increased from 17 percent in 1979-80 to 31 percent in 1980-81) but no effect on acceptances of full tuition awards (which remained constant) or partial tuition awards (which fell from 48 percent to 37 percent). These data suggest that while the level of the award may be crucial in competing with other universities for the top students in the social sciences, assurance of continued aid may be no less important in enhancing our ability to recruit those students to whom we offer partial support (some of whom often turn out to be outstanding).

While we should perhaps be wary of placing too much emphasis on a single year's experience, the experimental policy of guaranteeing continuation of the support offered to incoming students for three years, subject to satisfactory performance, seems to have been a substantial success in the Humanities and Social Sciences Divisions. A policy of making our top awards clearly competitive with those of other universities and guaranteeing continuation of as many lesser awards as the University is able to offer appears to be the most effective way for us to recruit promising students. To

maximize its effectiveness in recruitment, however, any financial aid policy must be clearly stated and consistently maintained over a number of years.

Support of in-residence students

Once in effect for a period of time, a policy of guaranteeing financial support to incoming students at the same level for three years, subject to satisfactory performance, will naturally tend to distribute support evenly among in-residence and incoming students. The principal difficulty in this policy as it applies to in-residence students, however, is that it may provide less flexibility to reward and encourage those students admitted with less or no aid who prove themselves to be among the most capable students once in residence. This difficulty can be avoided (i) by reserving a certain amount of new financial aid (some of which would be provided as a result of attrition among first-year students receiving awards) to be awarded to in-residence students on the basis of academic performance; (ii) by maintaining a reasonably strict definition of what constitutes "satisfactory" performance as the criterion of continued aid. Students admitted with an assurance of continued aid (subject to satisfactory progress) should not be required to compete with other students each year for the continuation of their aid; but it is reasonable to expect them to do better than merely acceptable work. This consideration draws attention to the fact that the current grading system offers relatively little possibility of differentiation among passing performances. A grading system that offered a clearer scale of evaluation might be desirable from this point of view.

A policy of guaranteeing financial aid for three years would also have unfortunate implications if it meant a reduction in the relative amount of aid available to support dissertation research, which already appears to be inadequate. Allowing students an option to spread their third-year's tuition over two years, and providing them with fellowship aid to maintain FTC registration for a further period, as proposed in this report, should encourage them to remain in residence and complete their dissertation more expeditiously. This goal should be advanced by increasing the financial support available to students at the dissertation-writing stage. Since these students have reached a point in their academic careers at which the faculty is best able to judge their intellectual capacities and scholarly potential, and at which the fruits of a long-term investment by the students and the University remain to be harvested, dissertation fellowships supporting the most able represent a particularly important and effective use of financial aid.

Recommendations regarding Financial Aid Policy

(i.) *We recommend continuation of the policy of guaranteeing financial aid offered to incoming students*

in the Humanities and Social Sciences Divisions at the same level for three years, subject to appropriate performance. In doing so, we wish to emphasize the importance of maintaining sufficient flexibility in financial aid policy to allow individual departments to determine the strategy in making initial award offers that seems most appropriate to their competitive situation.

(ii.) *We recommend that "appropriate performance" be defined in advance in a way that will make clear that students receiving fellowship aid are expected to meet standards of superior rather than minimally satisfactory work. These standards should be established in absolute terms, not as the result of a process of competition between students with aid and without.*

(iii.) *We regard it as particularly appropriate to insist on clearly superior performance as a condition of continued financial aid after completion of the second year of graduate study, by which time a student's potential for outstanding work at the research stage can be more reliably assessed.*

(iv.) *We emphasize the importance of sufficient flexibility in financial aid policy to allow for the awarding of new (or increased) fellowship support to students entering with none (or with relatively little) who achieve the standards of superior work established for this purpose.*

(v.) *We reiterate in this context our recommendation that students who have satisfactorily completed six quarters of residency at full tuition—and who have been formally admitted to doctoral research—be permitted to substitute a further six quarters of residency at half-tuition for their remaining three quarters of residence at full tuition. Students awarded fellowship aid of less than full tuition who opt for this arrangement would then be required to spread their receipt of financial aid over two years in the same manner.*

(vi.) *We also recommend that, where the cost of FTC registration is not borne by financial aid from external sources, the University make available tuition support to defray this cost for students who have not completed more than fifteen quarters residency.*

(vii.) *We recommend that particular emphasis be placed on the importance of providing adequate financial support for students at the dissertation stage of their graduate work. We urge that the creation of dissertation fellowships be given a high priority in the forthcoming campaign for financial support of the arts and sciences.*

(viii.) *We recommend that appropriate steps be taken to prevent students from accumulating an impossibly large debt. Students who are not fully supported by grants and fellowships should be expected to work part-time during the academic year and full-time during the summer. The University should provide an aggressive job service to help students find part-time work, which*

might often be combined with the internships discussed earlier in another context. *Registration requirements for work-study positions should also be revised in a way that would allow students who have completed their period of full registration to be eligible for research assistantships funded in this way.* More advanced students are likely to benefit most from this kind of work experience (which can often be closely related to their own intellectual interests) while also offering the most valuable research assistance to faculty members.

(ix). The University must consider alternatives to existing loan arrangements, in the event that current federal loan programs are modified in ways reducing or eliminating the eligibility of graduate students at a time when commercial loan rates are prohibitive. *We recommend consideration of the feasibility of offering deferred partial tuition loans to students meeting strict criteria of need.*

(x). *Post-Doctoral Fellowships.* The period immediately following completion of the dissertation is often crucial in translating promising ideas into mature, significant scholarship. We cannot afford to see the potential contributions of the most accomplished young scholars in difficult fields of inquiry lost at this stage. It is important for an institution of our international standing to make every effort to support young scholars whose doctoral research shows unusual promise of shaping their field of inquiry in fundamental ways. *We therefore recommend that the University seek foundation support for a program of post-doctoral fellowships for outstanding young scholars in the arts and sciences.*

D. A Note on Foreign Students

It has been one of the traditional strengths of this University that it has attracted graduate students from throughout the world. Its continuing ability to do so is both an expression and a source of its intellectual leadership. The recruitment of foreign students, and the maintenance of an environment responsive to their particular needs, presents special issues to which this Commission has been unable to devote systematic attention. *We recommend the creation of a committee for that purpose.*

CHAPTER 5: THE FOUR DIVISIONS

The Divisional structure has been one of the most distinctive features of the organization of graduate education and scholarly research at the University of Chicago since its introduction some fifty years ago. Every organizational arrangement has its own particular rigidities, and this one has proved no exception. In this chapter of our report, we offer a brief review of

problems and issues now facing the faculty in each Division, as we have come to perceive them. We have not attempted a systematic evaluation of individual departments or committees, believing such a task to be beyond our powers and more profitably carried out by others, either in the process of departmental self-evaluation, or through the procedures providing for the regular evaluation of departments by visiting review committees, which we wish to see reinstated. We have attempted instead to define the principal issues that seem now to be facing each Division as a whole. The discussions that follow represent a series of reflections upon the conversations held by members of the Commission with faculty in the Divisions during the academic year, 1980-81. As explained in Chapter 1, they are based on reports prepared by internal committees of the Commission charged to identify the problems bearing on the quality of graduate education in each Division. Accordingly, they vary in scope and character, as do the issues that presented themselves in the course of our conversations with members of each Division.

A. The Division of Biological Sciences

Biological Sciences is the smallest and least "departmentalized" of the graduate Divisions at the University of Chicago, and it is unique among major graduate programs in the country in the integration of the basic science departments with the clinical departments that make up the Pritzker School of Medicine. Our concern here is with the basic sciences, but we cannot avoid discussing the entire Division in many matters. Moreover, some departments include both basic and clinical research and teaching, and several of the most important interdepartmental committees are made up of faculty members from both areas of scientific investigation.

Divisional Organization

The present organization of the biological sciences throughout the world is largely a result of the disappearance of old disciplinary boundaries since the advent of molecular biology. The distinction between zoology and botany was resolved at the level of the cell, while the distinction between physiology and anatomy was resolved at the level of biochemistry. The present departmental organization of the biological sciences at this University was created in 1973 after an extensive study and report by the "Uretz Committee." The basic science departments are Anatomy, Biochemistry, Biology, Biophysics and Theoretical Biology, Microbiology, Pathology, and Pharmacological and Physiological Sciences. Most members of the Divisional faculty who spoke of this matter said that while there were other obvious ways in

which lines might be drawn between departmental areas, there would be no significant advantage from drawing them differently at present. However, a periodic review and, when suitable, reorganization of departments might be a regular procedure. A merger of all the basic science departments would be possible but administratively cumbersome. Chairmen generally felt that a core faculty of about twelve to fifteen persons was desirable; the chairman could continue scientific work despite the responsibility of departmental administration. The Department of Biology, with about twenty-one faculty members centrally involved, approaches the upper limit of size. The Department of Pathology has a still larger faculty, but it serves as both a basic and clinical department, with some faculty members specializing in one or the other.

Most graduate education in the basic biological sciences at this University is supported by National Research Services Awards (still better known, and hereafter referred to, as "training grants") from the National Institutes of Health. The areas of study supported by training grants, such as molecular and cell biology, genetics and regulatory biology, and developmental biology, do not usually correspond to particular departments in the Division. There are in some cases interdepartmental committees that bring together faculty members who share concern in an area defined by the National Institutes of Health as eligible for a training grant. Students supported by a single training grant are likely to be enrolled in different departments and degree-recommending committees, and the departmental affiliation of the director of a training grant is not relevant to the operation of the grant. Such arrangements are reflective of the generally healthy attitude toward departments and departmental boundaries that prevails in the Biological Sciences Division. Patterns of joint appointment, of crosslisting courses, and of teaching students outside the departments in which they are enrolled, all reveal an admirable absence of parochialism. While we think well of our colleagues for their breadth of vision, it is important to recognize that the contemporary unity of biology is a product of particular scientific developments in the last quarter century and that it has been in part obtained by narrowing the focus of the field.

The center of gravity in contemporary biology, both at this University and internationally, is expressed in the research and graduate training that go on in the Cummings Life Sciences Center. Speaking very generally, cell and molecular biology are at the center of attention in modern biology, and are the preoccupation of most of the members of the Departments of Biochemistry, Biophysics, and Microbiology, which have their offices and laboratories in Cummings. A graduate student might apply to any of these depart-

ments, or to the Department of Biology, and end up pursuing a very similar course of study, doing the same research supervised by the same faculty member and supported by the same training grant. The number of courses taught in this central area of biology is in fact very small and most of them presuppose biochemistry training. For example, Genetics 337, "Graduate Genetics," during the Winter Quarter 1981, was jointly taught by two faculty members, one from Microbiology, the other from Biophysics, and cross-listed under six different departments and committees; the prerequisite is Biochemistry 310. A few courses that span many traditionally separate areas of biological research are clearly the best pattern of instruction for students entering the field today. Once this basic education is completed, instruction becomes very largely a matter of apprenticeship in the laboratory of the student's faculty supervisor.

As cell and molecular biology, or "biochemical biology," has come to have a place of such centrality in the definition of modern biology, some other spheres of inquiry have been eclipsed. What is sometimes called "organismal biology," including such morphological studies as are done typically in Anatomy, much of the innovative work in plant sciences (formerly known as botany), evolution, and field studies of animal behavior and ecosystems, remains a major concern among some members of the faculty who have reputations for excellence in research which lies outside the biochemically based areas. This University has made many fundamental contributions to evolutionary studies, and the field of population genetics was given its contemporary shape here. The Committee on Evolutionary Biology, although damaged by the loss of eminent faculty members during the last decade, has been strengthened by recent appointments in the Departments of Biology, Biophysics and Theoretical Biology, and Anatomy. It remains a source of great strength for the biological sciences at Chicago; to some extent it supports the reputation of the Division in a period when the luster of the more central departments has dimmed. Applications for graduate study in evolutionary biology remain high in both numbers and quality. There is little doubt that the perennial biological problems of evolution and adaptation will continue to attract adventuresome scientific curiosities, despite the lack of N.I.H. training grant support in these unfashionable areas. Evolutionary biology is a field of exceptional accomplishment at the University of Chicago and should receive continued support.

The encompassment of the Pritzker School of Medicine within the Division is another source of strength for the biological sciences. A good many students who might have found themselves attracted to careers in biological research a decade ago are now

entering medical school with the objective of insuring themselves against uncertain and unexciting prospects for academic employment. The University of Chicago enjoys a particular advantage in relation to this group of students through the integration of the clinical and the basic science departments in the Division. There are currently seventy-three students pursuing joint M.D. and Ph.D. degrees at this University, more than at any other American institution. There are special six-year traineeships under the Medical Sciences Training Program that support students in joint degree programs through both clinical and research training. There are only eight vacancies each year under this particular program, for a total of fifty students in the Division, so it cannot enroll all of the joint degree students. A similar but smaller program in Child Development is operated through the Pediatrics Department. It is generally thought that trainees selected under these programs are the most uniformly promising scientific investigators among graduate students in the Division.

It will be obvious that there are differences between basic and clinical science departments, and these appear most striking in the area of graduate instruction. There are very few courses offered at an advanced graduate level anywhere in the Division, yet those that are offered seem to be given at times when senior medical students cannot take them because of schedule conflicts. Scheduling a small number of advanced courses at times when they can be taken by the largest number of students throughout the Division does not seem insuperably difficult. Requests for the offering of additional advanced courses that appear to be mainly service courses provoke irritation between the basic science departments and "the medical school." Since relations between the two sections of the Division are basically so good, represented in many joint appointments that span the difference, and since they are mutually strengthening in most respects, proposals that might provoke a deterioration in those relations must be approached with circumspection. It is with this caution in mind that we suggest that the Division give some attention to improving the coordination of graduate teaching.

The Faculty

Important as it is, teaching is not the foremost problem of the Biological Sciences Division. There is a general sense throughout the Division that the faculty is not uniformly distinguished, that whatever measures of excellence are applied to many departments, they will emerge as second-rank, outside the ten best departments in their respective fields, and that Chicago is a second choice for the best prospective graduate students. The overall excellence of its faculty is the main strength of this University, and it will lose its

distinction quickly if the quality of the faculty is permitted to erode. Therefore, if the biological sciences faculty is declining in quality it is a matter of the greatest urgency for the University as a whole.

There are some members of the faculty of the Division whose research has earned them international renown and whose laboratories continue to attract outstanding graduate students and post-doctoral fellows to the University. There are some members of the faculty who are in, roughly, the first ten years of their research careers and whose work has already brought them excellent reputations. Despite these strengths, however, most departmental chairmen acknowledge that the best graduate students are drawn to institutions on the coasts. Harvard, M.I.T., Yale, Stanford, and Berkeley are heard commonly in all of the Divisions of this University as leading competitors. In the biological sciences, leading positions are also occupied by the small and specialized programs at Caltech and Rockefeller University, where research on recombinant DNA and cloning attract graduate students of the highest caliber. But when graduate programs at Chicago are ranked below those at Duke, the University of Wisconsin, and the University of Illinois, it becomes painfully clear that it is more than the guarantee of full financial support that draws good graduate students to these other institutions.

The faculty of the basic sciences departments in the Division is not large, and, even if the universe were large, statistical measures would not be very revealing of the subtleties of quality. However, in gross terms, the experience of the last decade has been one of resignations by senior faculty members and appointments of beginning assistant professors. Most departments report that their attempts to attract senior scientists from elsewhere have been declined so early in discussions that no formal offer was ever made. The usual reasons given for abrupt expressions of lack of interest concern the difficulty of moving a laboratory and a major research operation, the unattractiveness of Hyde Park, and the Chicago winter. Obviously, such factors figure in any decision to move, but the experience of departments in other Divisions of the University suggests that they do not figure as heavily as does the intellectual and research excellence of the department. In other words, a faculty member will move to Chicago if he or she regards it as a move "up" in the profession.

Most departments have not tried to make senior appointments, but most of them are very pleased with the excellence of the junior appointments they have been able to make recently. Chicago is particularly attractive to an assistant professor because it offers the prospect of indefinite tenure rather than the "revolving door" of some other prominent institutions. Eighty-two percent

of the tenure appointments made in the Biological Sciences Division in the period 1972-80 were made from within, a proportion higher than that in any other Division (See Table 1). In fact, if there is a grapevine in such matters, it might carry the gossip that tenure is rather easy to get in the Division of Biological Sciences. It is surely the case that great care has been exercised in the selection of every junior appointment in the Division, so that the number of persons found unsuitable for tenure at the time of review would be expected to be very small. However, review procedures seem to be conceived to provide only positive outcomes. The candidate's department usually votes on the question of tenure on the basis of recommendations made by external referees without a formal internal report or evaluation of the candidate's research. In one department, even untenured members of the faculty have a vote in tenure recommendations. After the vote is taken, the department chairman writes a memorandum reporting the vote and his recommendation to the Divisional Tenure Committee.

Unlike the practice in the other Divisions, the Dean of Biological Sciences does not take personal responsibility for the assessment of each recommendation for the granting of tenure, a procedure widely regarded as this University's foremost method of insuring continued faculty quality. Moreover, the Tenure Committee, because of its own composition, must normally appoint ad hoc committee members to review cases of candidates for tenure from the basic sciences. Thus the difficulty of maintaining a uniform standard of research achievement as a minimum prerequisite for promotion to tenure is exacerbated.

Realistic and, where it is necessary, critical appraisals of the faculties of the departments and principal interdepartmental committees of the Division seem essential. Without the sting of peer evaluation, there is a perpetual danger that faculties will settle into a complacent acceptance of mediocrity, will cease to be genuinely aggressive in recruiting the most excellent faculty, and will accept "the best possible under the circumstances" in its place. Most of the departments and committees in the Division are capable of providing self-evaluations that would likely be in close accord with opinions in the field at large. However, as a check on internal perceptions, and as a guard against inertia, *periodic evaluations of departments and committees should be made by visiting committees consisting of respected research scientists in the appropriate fields.*

Faculty recruitment in the biological sciences requires major expenditures for establishing new laboratories. There must be laboratory space for the faculty members as well as graduate students and post-doctoral research fellows. In the Hull Court biology

TABLE 1: PROPORTION OF TENURE APPOINTMENTS MADE FROM WITHIN, BY DIVISION AND DEPARTMENT (1972-80)

BIOLOGICAL SCIENCES DIVISION: 82%	
67%-100%:	Anatomy, Biochemistry, Biology, Theoretical Biology, Microbiology
33%-66%:	Pharmacology/Physiological Sciences
PHYSICAL SCIENCES DIVISION: 70%	
67%-100%:	Astronomy/Astrophysics, Chemistry, Geophysical Sciences, Physics
33%-66%:	Mathematics, Statistics
HUMANITIES DIVISION: 62%	
67%-100%:	German, Linguistics, NELC, Romance Languages, Slavic, SALC
33%-66%:	Art, Art Design, Classics, English, Music, Philosophy
0%-32%:	FELC
SOCIAL SCIENCES DIVISION: 42%	
67%-100%:	Behavioral Sciences
33%-66%:	Anthropology, Economics, Education, History
0%-32%:	Geography, Political Science, Sociology, Social Thought

buildings and Abbott Laboratory, much space suitable for the creation of laboratories requires very extensive renovation before it can be used. The laboratories in the Cummings Life Sciences Center are in good condition and are very attractive places to work, but they are also mostly occupied and cannot be offered as enticements to prospective faculty members. The Dean of the Division has met requests for the rehabilitation of space and the equipping of laboratories—sometimes very expensive undertakings—with an effectiveness that is envied elsewhere in the University.

It is clear that the Dean achieves a great deal of budgetary flexibility through simultaneous responsibility for the basic science departments, the clinical departments, and the hospitals. But the cost of this pattern of organization is very high. The administrative burden on a single person is enormous, especially where fundraising is a regular part of the task and at a time when major new hospital construction is underway. It is not surprising that the Dean has little time to consider recommendations for tenure, or to carry out the persistent, thoughtful scrutiny of the faculty that is necessary to ensure its continued excellence. It is not surprising that administrative procedures have become cumbersome, making it difficult to act quickly when a rare opportunity to make a major faculty appointment suddenly arises. These are characteristics of large organizations that are accepted in return for economies of scale.

However, they are not characteristics of the University of Chicago, and they distinguished the Division of Biological Sciences from the other graduate Divisions.

In the recent past, the Division has had an office of Associate Dean for the Basic Sciences, which was in some respects comparable to that of Dean in the other Divisions. That office was not filled when the present administrative organization was created, apparently in large part due to the absence of an obvious candidate for the position. An Associate Dean for Academic Affairs has been named, but it is not certain that, in the context of this University, any office less than Dean is perceived as carrying sufficient authority to provide critical oversight of faculty excellence. Since our report appears while the search for the next Dean is underway, the time is especially propitious for an administrative arrangement attuned to the improvement of the quality of basic research in the biological sciences.

It is not now clear what administrative organization might most effectively focus on the problems of the basic sciences, and it may be impossible to define it until the particular background and interests of the new Dean are known. Any organization that fosters a cleavage between the clinical and basic science departments is contrary to the best interests of both the branches. However, a pattern that includes an Associate Dean for Basic Sciences who lacks wide authority, and has no budgetary autonomy, has proved itself ineffective in building a strong basic faculty at the University of Chicago. It is our view that the present low stature of the basic science departments of the Biological Sciences Division is one of the most pressing problems facing the entire University and should receive its urgent attention.

B. The Division of Physical Sciences

The Division of Physical Sciences is a strong Division, proud of a history of distinguished achievements. Its faculty is slightly larger than the basic sciences component of the Biological Sciences Division and its departmental structure is far more clearly defined. In all, the Division is comprised of six departments. Mathematics and Physics are the largest, with about forty faculty members; Chemistry and Geophysical Sciences are moderately large, with approximately twenty-five; Astronomy/Astrophysics and Statistics are relatively small, with about a dozen. The rigidities that might otherwise result from a strongly defined departmental structure are mitigated by the central role played in the research activity of the Division by the James Franck Institute and the Enrico Fermi Institute, soon to be joined by a proposed third Institute for Bio-Organic and Bio-Inorganic Chemistry (to be shared with the Division of Biological Sciences). The interdisciplinary flex-

ibilities offered by the Research Institutes have been fundamental for the intellectual creativity of the Division. In addition to the Research Institutes, the University also maintains the Yerkes Observatory in Williams Bay, Wisconsin, which has been its center for observational astronomy since 1897. It makes extensive use of the McDonald Observatory of the University of Texas, which observatory it helped to found.

Although there is no overwhelming sense of crisis in the Division of Physical Sciences, there is apprehension about the future. Among the concerns our committee heard most frequently voiced are the fear that the decline in number of graduate students will continue to a point below the critical mass necessary for research purposes in certain fields; the tendency for scientific research to become increasingly dependent on the existence of national facilities, a factor which makes the University of Chicago more attractive to outstanding faculty in some fields but less attractive in others; the escalation of laboratory start-up costs, which increases the difficulty of recruiting leading researchers, especially at the senior level; the erosion of salary levels within the University and the enhanced appeal of research positions in industry as a result.

There is also a common perception in the Physical Sciences Division that it has in the past been expected to "pay its own way" to an extent that has resulted in consistent underbudgeting of University resources for essential support services. Whether or not this perception is accurate, grants and contracts for scientific research depend so heavily on federal funding that a significant shift in science policy in Washington could seriously affect the Division. There is fear that the Division will be unable to remain competitive at the highest intellectual level without the infusion of University venture capital in significant amounts. This money is particularly needed in two areas: the renovation of existing space for teaching and research; and the provision of an "opportunity fund" to support important research needs. Considerable progress toward these goals is now being made. But there remains a perception that competing universities have gained an edge in recruiting faculty, and perhaps in securing national science facilities, because of a greater ability to commit university funds.

But the most important problem facing the Division is a perennial one in the pursuit of scientific excellence, though it is made more acute by the budgetary restrictions that must be anticipated in the coming years. The Division has commanding strength in a number of fields of scientific inquiry; in some, its traditional leadership is in danger of erosion; in a few others, it has become weak. It must be prepared to make difficult choices about priorities: allocating resources to strengthen those key fields now threatened by erosion,

without risking the leadership already achieved in areas where the Division is outstanding; distinguishing, among the fields now weak, those that can reasonably be left uncultivated (at least for some period of time), those that are essential to the scientific enterprise of the Division and must be improved as soon as possible, those that offer particular strengths and potentialities that might be developed by new faculty groupings. The future of the Physical Sciences Division as a center of scientific research and teaching will depend critically upon the decisions made in this decade regarding such priorities, and upon the judgment and determination exercised in translating those decisions into strong faculty appointments.

Graduate Student Recruitment

As we have already seen, there has been a dramatic decline in graduate student enrollment in the Physical Sciences Division in the past decade. In the Division as a whole, total enrollment is now fifty-four percent of what it was in 1968-69. Among the larger departments, Mathematics has declined to forty-three percent of its 1968-69 enrollment, Physics to fifty percent, and Chemistry to sixty percent. Among the smaller departments, Geophysical Sciences has declined to seventy-five percent of its 1968-69 enrollment; Statistics to fifty-four percent; Astronomy/Astrophysics, after almost doubling its small enrollment in mid-decade, has now returned to approximately its 1968-69 size. This overall decline in the number of graduate students in the physical sciences is not, of course, unique to the University of Chicago. We are participating in a general trend which has serious implications for the nation's future intellectual life and productivity.

Nevertheless, there is a concern that the decline in graduate student numbers at this University may be reaching a critical point in Mathematics, in some experimental areas of Chemistry, and perhaps in some fields of Physics. Statistics and Astronomy/Astrophysics have fewer students than they regard as desirable. The Division appears to be approaching a situation in which the vitality of teaching and research in the physical sciences will be seriously affected unless the decline in the number of students can be halted or reversed.

Since the Division faces intense competition at the national level for the best students, it will need to make particularly energetic efforts to secure well qualified students in adequate numbers. We have considered graduate student recruitment procedures from this point of view at some length in the preceding chapter of this report. Our colleagues in the Physical Sciences Division may well be able to add to the recruitment strategies suggested there.

Stipends awarded to the best graduate students in the

TABLE 2: NATIONAL RANKING OF PHYSICAL SCIENCES DEPARTMENTS AT THE UNIVERSITY OF CHICAGO*

Department	1925	1957	1964	1969	1979	1980
Astronomy	2	2	3	4	NA	8
Chemistry	4	4	10	8	10	5
Geology	1	10	17	10	NA	9
Mathematics	1	2	4	4	5	5
Physics	1	5	10	9	9	12
Statistics	NA	NA	NA	NA	5	3

NA: Not applicable

*SOURCES: 1925, 1957 and 1964 are from Allen M. Carter, *An Assessment of Quality in Graduate Education*, Washington, ACE, 1966; 1969 is from Kenneth D. Roose and Charles J. Anderson, *A Rating of Graduate Programs*, Washington, ACE, 1970; 1979 is from the Ladd and Lipset Survey, *Chronicle of Higher Education*, 15 January, 1979; 1980 is from Jack Gourman, *The Gourman Report*, Los Angeles, NES, 1980.

physical sciences are determined by a national competition among the leading research universities. It is therefore important that the stipends offered by the University of Chicago remain fully competitive with those offered by other institutions. Among the larger departments, they seem to be more nearly competitive at the national level in Chemistry than in Mathematics, where they appear particularly low in comparison with those of competing institutions; they may also be falling behind in Physics. An attempt to rectify these discrepancies has been made for the coming academic year. But efforts must be continued to ensure that prospective students make their decision regarding attendance at the University of Chicago on academic rather than financial grounds.

That having been said, we must also reiterate that the ability of the Physical Sciences Division to recruit the very best students in a shrinking national pool will depend ultimately upon the scientific distinction and achievements of its faculty. Money is no substitute for academic excellence.

Academic Quality

As Table 2 suggests, the departments in the Physical Sciences Division have generally appeared among the top ten in the national rankings of academic departments. While it would be a mistake to dwell too obsessively on any one of these rankings, they do give a general sense of the way in which the departments in the Division have been perceived over time. Mathematics is widely regarded as the most distinguished department in the Division, though the younger Department of Statistics is also among the very strongest in the country. The rankings of the other departments tend to conceal the existence of outstanding research groups in particular subfields.

The University's ability to attract the very best graduate students in the physical sciences, and to train

them effectively for creative scientific work, must ultimately depend on the quality of its faculty. Thus the Division must make every effort to retain the distinction it now enjoys in many areas of scientific inquiry, and to define opportunities to add creatively to its strength in fields that may now be less distinguished. Forthcoming retirements, and the challenge they offer to identify the most promising fields and the most creative individuals among the next generation of outstanding scientists, will be critical in the next decade. They will require the University to assure its continued distinction in such fields as mathematics, theoretical astrophysics, cosmochemistry, chemical physics, and experimental particle physics. They will offer opportunities for it to reassert its strength in other areas of scientific research.

Among the fields in which the Division now seems weaker than it should be are inorganic chemistry, organic chemistry, small-scale experimental physics, meteorology, observational astronomy, and atomic and molecular physics. Many of these fields, despite the presence of outstanding individuals, are below the threshold for excellence and are considered externally to be so weak that it has become difficult or impossible to attract strong candidates for appointment at the senior level. It seems unlikely, in the current budgetary situation, that the University will be able to bring all of these areas up to the appropriate strength simultaneously. Difficult choices will have to be made. However, it is plausible that over a five-year period an average of three top-quality senior appointments a year, and an equal number of excellent junior appointments, carefully selected in the light of the needs of the whole Division and judiciously allocated among the various departments, would considerably enhance the overall quality of the Division of the Physical Sciences.

Such appointments are unlikely to be made effectively in a number of fields unless the University is able to underwrite the start-up costs necessary to provide the laboratories required for the most advanced scientific work. In some areas of research, start-up costs may range between \$250,000 and \$500,000. The University is often at a serious disadvantage in recruiting faculty (both senior and junior) if it cannot commit the resources to cover them. The existence of a strong contingency fund for this purpose, which is now being established, is essential.

Preserving academic strength, however, is not simply a matter of faculty recruitment. It would be a mistake to beggar Peter to recruit Paul. There is a perception in several departments that salaries have been eroding in recent years in a way that may make the most promising faculty more susceptible to the attractions of industrial or other academic positions. The Department of Physics, for example, recently lost nine

faculty members within a two-year period. Some of these losses were more serious than others. Nevertheless, there is a feeling in the department that the University has not been able to reward some of its ablest scientists (both junior and senior) adequately, with the result that they have been particularly responsive to handsome offers from elsewhere. Intellectually, losses of outstanding junior faculty at the point that they become most productive is especially damaging to the Division in the long run. Financially, these losses represent a drain on resources produced by "turnover costs" that may be significantly higher than amounts saved on faculty salaries. Important losses at the more senior level may have also been explained by higher salaries and more attractive research conditions offered by industry or other universities.

Apart from salaries and research support, there may be other initiatives which the University may be able to take to improve its ability to recruit or retain faculty of the highest quality in the Physical Sciences Division and in others. In the case of junior faculty, the issue of housing was frequently raised in our discussions. The willingness of the University to make loans for second mortgages at roughly first-mortgage rates has been of critical importance, particularly for junior faculty members. With mortgage rates now so high, fewer junior faculty members can now afford to take advantage of this policy, and even senior faculty who might otherwise be attracted to the University must find it difficult to move. One suggestion we heard is that the University make loans for second mortgages at below market rates, on condition that any capital gains realized by eventual sale of the house be shared between the University and the faculty member. Obviously, the attractiveness of such a possibility to prospective faculty would not be limited to the Division of Physical Sciences.

Relationship to National Facilities

One of the principal difficulties facing any major research university in pursuit of scientific excellence concerns the increasing dependence of scientific research in many fields on the resources of national scientific facilities. The strength and attractiveness of a particular university in particular fields is therefore critically affected by the nature of its association with facilities of this kind. Most of the major research universities in the U.S. now have important externally funded scientific laboratories which support the scholarly work of the faculty in certain fields. For example, the Smithsonian Astrophysical Observatory in Cambridge is associated with the Department of Astronomy at Harvard; the Lawrence Radiation Laboratory at Berkeley shares many faculty members with scientific departments of the University of California at

Berkeley; Stanford operates "on campus" a linear accelerator facility (SCLAC) whose staff and visitors enhance the strength of physics and chemistry at that university; and so forth.

While this University has an important relationship with Argonne National Laboratory, the structure of that relationship has prevented achievement of the kind of scientific integration that exists at Berkeley. As an example of the benefits of appropriate relationships with nearby national facilities, we can cite the importance of the Fermi National Accelerator Laboratory in Batavia, which has enabled the University to rebuild first-rank strength in experimental high-energy physics. The lack of other scientific co-facilities on this campus now presents serious difficulties for the maintenance of state-of-the-art research in a number of fields. Proper arrangements with Argonne would create an enhanced environment for scientific activity in many areas. However, maximal exploitation of opportunities for intellectual interaction with national co-facilities will usually require funds for joint appointments.

One particularly difficult problem results from a recent decision of the National Science Foundation to create a Mathematical Sciences Research Institute on the Berkeley campus of the University of California. A smaller national institute, concerned particularly with the applications of mathematics to other disciplines, is also to be created at the University of Minnesota. The Mathematics Department at the University of Chicago (which was a serious competitor as a home for an NSF-funded Mathematics Research Institute, but found itself eliminated in the final stages of selection) is now the only one among the four or five leading departments which must compete for scholars and conduct research activity without the advantages conferred by the presence of a complementary concentration of first-rate mathematicians. It therefore seems essential, in order to maintain the traditional strength of the University in mathematics, to create a Mathematics Research Institute here in Chicago. This is not a new suggestion: it was first put forward in 1958 and has been repeated several times since that date. *We recommend that a new proposal be developed along these lines in order to clarify the various possibilities regarding the size, scope, structure, and functions of such an institute.* The need for such a center for mathematical activity in Chicago, and the record of achievement in mathematics at the University, suggest that the creation of an endowment for a Mathematics Research Institute could well attract generous financial support from prospective donors.

A similar problem also exists in the case of the Department of Astronomy and Astrophysics, which is now virtually unique among major departments in the country in not being affiliated with a large co-facility.

The future of the experimental laboratory astrophysics carried out in its Laboratory for Astrophysics and Space Research will depend on that laboratory's ability to survive the vicissitudes of federal funding for NASA. The future of its work in theoretical and observational astronomy is likely to depend on the creation of effective links with the Space Telescope Data Center to be established at Johns Hopkins, or with a regional Space Telescope Center that might be set up after the launching of the space telescope in the middle of the decade. It is important that energetic efforts be made to bring such a regional center to this campus.

At the same time, the Department of Astronomy will need to watch with care the plans now being made to create the next generation of optical telescopes. At some point in the near future, it will also be necessary to decide whether to modernize Yerkes Observatory or abandon it as a center for research in observational astronomy.

Divisional Organization

There seems to be relatively little interest within the Division of Physical Sciences in structural reorganization. When asked, most faculty members found it difficult to identify institutional obstacles that stood in the way of the development of their intellectual interests. Although some faculty members were willing to speculate about conceivable new arrangements, they did not do so with any sense of urgency. There seems to be a general feeling, which we attribute to the interdisciplinary importance of the Research Institutes in the life of the Division, that institutional boundaries are flexible enough for faculty members to pursue common research interests without difficulty. The recent decision to create a new Institute for Bio-Organic and Bio-Inorganic Research offers a confirmation of the flexibility of the Division in providing for changing research interests. It also suggests the wisdom of a policy that would provide for a periodic review of the adequacy of the opportunities to realize changing research strategies within the framework of the existing institutes. It is thirty-five years since the creation of the Research Institutes revolutionized the capacity for intellectual interaction in the practice of science at this University. It is possible that changes in the scientific environment in the intervening years now make reconfigurations of disciplinary contacts desirable.

There is also one respect in which we think it imperative that the issue of structural reorganization be considered. In 1973, it was decided to dissolve the existing Committee on Information Sciences and to replace it with a program in computer science within the Department of Mathematics. We believe that it is essential for the University to reconsider its needs in this area, and to examine the desirability and feasibility

of creating a separate Department of Computer Science. However, we think that the issues relating to the future of computer science at this University go beyond the needs and interests of the Physical Sciences Division alone. We therefore return to this subject later, in a separate section of this chapter.

Library, Teaching, and Research Facilities
In our conversations with faculty members throughout the Division, we heard many complaints about the inadequacies of Eckhart Library, in terms of its facilities, personnel, and collections. The announcement of the merger of the Crerar Library with the University of Chicago, and of the plan to construct a new science library on campus in connection with that merger, has therefore elicited a cautiously positive response from the faculty. However, there is still considerable apprehension that the new library arrangements will not be sufficiently sensitive to the needs of working scientists. It must be recognized that natural scientists use research libraries in a manner quite different from most humanists and social scientists: laboratory research tends to be punctuated by frequent, short visits to the library, while more sustained periods of library research are relatively rare. For this reason, twenty-four hour per day access to the library, seven days a week, is regarded as essential; and there is substantial concern at the possibility that weatherproof access to the new Crerar Library might not be provided.

There is also considerable dissatisfaction with the space and other facilities available in Kent, Ryerson, and Eckhart Halls, and with the physical dispersion of members of some departments in ways that inhibit their intellectual interaction. The decision to upgrade facilities for undergraduate laboratory instruction in physics and chemistry by the construction of a Physics Teaching Center and the rebuilding of the interior of the Kent Laboratory, which has been greeted with considerable enthusiasm, will provide an opportunity to solve some of the pressing space problems of the Division. However, the space difficulties of the Department of Astronomy will remain particularly severe until a decision is made to move the Computation Center.

Some Administrative Issues

In its conversations with faculty in the Division of Physical Sciences, our committee encountered some feeling that the Division had been neglected and misunderstood by the administration in past years. This is not equally (or at all) the case in all departments; and it is difficult to gauge how strong the feeling is in the Division as a whole. However, several departments expressed the sense that the administration had in the past been unwilling or unable to appreciate their needs and interests; in some cases, delays in appointment deci-

sions had seemed to take on symbolic importance as an indication that they were not valued as departments. The role of an Associate Provost with special interest in and knowledge of the sciences is an important one from this point of view.

Regarding faculty appointments, several departments also complained that opportunities had in the past been lost by administrative delays and apparent unwillingness to commit University funds to guarantee the start-up research costs necessary to attract distinguished scholars in many fields. Given the willingness of Divisional faculty to provide a clear framework of goals, needs, and priorities for long-term planning of recruitment activities, and the availability of a Divisional research fund adequate to the research costs involved, we think that difficulties of this kind can be avoided in the future.

Finally, in our conversations with departments, the matter of University policy regarding "indirect costs" was frequently raised as a problem. This is clearly a complex issue with many dimensions. The University depends on funds generated through "indirect costs" to defray the real expenses of supporting scientific research and providing the facilities necessary for it. Individual researchers, who often feel inadequately informed about the procedures used in determining overhead rates, frequently find themselves caught in the middle between government agencies and the University administration, and victimized by unanticipated changes in the "indirect costs" which unexpectedly reduce the value of existing grants. At the same time, "indirect costs" appear to become a focus for other feelings. One such feeling seems to be that the University expects the sciences to "pay their way" through research grants without committing adequate resources of its own in support of the scientific enterprise. Another seems to be the suspicion that the sciences are subsidizing other parts of the University in various ways. We do not know how widespread these feelings are. But, given the reliance of the University on federal funding, we think it important to confront them. It is our perception that the Sachs Committee Report has not received the attention it deserves among members of the faculty in the Physical Sciences Division and should be redistributed.

C. The Division of Social Sciences

The Division of Social Sciences comprises the departments of Anthropology, Behavioral Sciences, Economics, Education, Geography, History (which it shares with Humanities), Political Science, Sociology, and the Committee on Social Thought. In addition it has programs of its own, such as the Divisional Masters Program, and it contributes largely to the work of the Committee on Public Policy Studies, NORC,

and other centers and institutes on campus. With over a thousand graduate students registered, it is by far the largest of the four Divisions.

Over the course of several months our committee met with representatives from each department in the Division, including the Committee on Social Thought, with the Dean of the Division, a past Dean, the Dean of Students, some recently graduated Ph.D.s, a group of the junior faculty, a group of current graduate students, and representatives of the Divisional Masters Program. We usually met with a group of faculty members, sometimes large, sometimes small, but in one instance with the chairman only. We have received a small number of written communications from faculty and students. We have studied as well other data supplied by the departments, the Divisions, and the University administration, but this report is primarily based upon those conversations, to the continuation of which it is indeed intended to be a contribution.

In our treatment of the Division of Social Sciences we discuss first the life and structure of the Division itself, for this is the matter most persistently brought to our attention by members of the Division in our conversations with them.

The Life and Structure of the Division

The Division of Social Sciences has an extraordinarily distinguished history as a center of work in the understanding of human life in society, characterized not only by the excellence of work done within particular fields, but by the redefinition (and in some cases the invention) of fields of inquiry themselves. The departments in the Division for the most part continue to maintain a very high level of distinction,* but over the years the character of their relation with each other seems to have changed. At one time, we are told, the departments felt themselves very much to be parts of a larger whole, but today they seem more isolated from each other. Each department seems to have its own character, its own problems, and its own achievements. Their dispersal is indeed reflected geographically: while once most of the departments were housed within the same building, today they are spread over the campus, for the most part in discrete departmental units. Of course many individuals within the Division have productive relations across departmental lines, and there are several cross-departmental organizations, such as NORC. But the Division itself seems to exist only as an organizational structure mediating between the departments and the central administration.

This state of affairs contrasts markedly with a

*According to one recent study the departments of Anthropology, Economics, Geography, Political Science, and Sociology were all ranked within the top four departments in their respective fields. See Table 3.

remembered past in which the Division itself was a community with its own life. The key word usually used to describe the earlier state of affairs is "interdisciplinary." Although it is not always wholly clear what is meant by this word, the general point is plain: there was a time when the Division was the place of collective and cross-departmental conversation on topics that raised fundamental questions about the nature and future of social science. There were cross-departmental seminars organized at the Dean's office; collective work on common problems from differing disciplinary perspectives (as in the New Nations Committee); some elements of a Divisional curriculum; and perhaps more important even than these, a remembered sense of shared openness and challenge. It is important that one forum in which cross-departmental conversations occurred in a structured and continuing way was the College, where departments to some degree competed for the shaping of the social sciences curriculum.

While there is no doubt an element of nostalgia in all this, and perhaps error in detail, there also seems to be much truth in the general picture. And while the picture is necessarily somewhat vague, it presents issues of the first importance for the Division and the University.

Two preliminary points should be made. First, the word "interdisciplinary" cannot perform all that is asked of it. The application of the tools of different disciplines to the understanding of a common phenomenon, or (even more restrictively) to the solution of a common problem, is very different from an attempt to work out the foundations of a discipline or the nature of social science itself (although, of course, the first may lead to the second, or the second inform the first). Second, there is now a great deal of interdisciplinary work being done within the Division, through formal and informal structures other than the Division itself. But with these qualifications, the following central questions emerged from our conversations with members of the Division as topics of real concern to many of them. What should be meant by a "discipline" in the social sciences? What should be the character and function of a Division that—does what: unites? contains? combines? mixes? challenges? confounds? comprises?—these several disciplines?

One view, which has its proponents within the Division, is that the present state of affairs is healthy and good. The expansion and growth of academic fields leads necessarily to the specialization and compartmentalization of knowledge. This is how fields develop and knowledge is advanced. While the specialist may be called upon to lend his services in work of a more comprehensive character, the maintenance of professional expertise and standing requires a narrow focus, and leaves little time or energy for other things.

An opposing view, also expressed within the Divi-

sion, is that the compartmentalization of disciplines is neither necessary nor good. A field is not self-defining, nor is it sufficient that this University meet the standards established elsewhere: excellence of thought in any field requires continual reexamination of terms, methods, and premises. A field, indeed, is not a "field" at all unless it is in a process of perpetual regeneration. This process can take place intramurally, no doubt, or extramurally; but one of the purposes of the Division of Social Sciences should be to provide a context in which the continual reexamination of fundamentals might go on. This is an image of "interdisciplinary" work quite different from that which conceives of discrete experts lending special skills to the definition and solution of a common problem. It is a way of questioning, and hence of shaping, the skills and knowledge and understandings which define the field now and in the future. Of course even if this position is in general accepted, it does not follow that cross-disciplinary relations should be established at the Divisional level. It may be that the present formal and informal arrangements for cross-disciplinary work are more satisfactory to the members of the Division, and better adapted to the kind of work they do, and ought to do, than any Divisional structure would be.

Some members of the Division also believe that the disciplines themselves are losing their coherence and identity as such, and that the cry for "interdisciplinary" work is really a cry for a lost identity within the discipline. On this view, it is intra-departmental anxiety that leads to the rigid demarcation of departmental bounds. In support of this view, one can see that it is already to some degree the case that research configurations do not match departmental lines.*

This committee does not now take a position as to which of these competing views is correct, partly because it is possible that one description is true for one part of the Division, another for another, and partly because whichever description is correct, we think the same conclusion flows: more attention should be given by the Social Sciences faculty and the Division itself to

the identification of the disciplines of social science and to the articulation of the proper relations among them. These are living questions within the Division and in our opinion no adequate forum for their investigation and resolution now exists.

One commonly heard kind of remark does much to sum up the situation we wish to describe: "Yes, I know we should be rethinking the fundamentals of our disciplines and engaging in conversation with others on this campus to that end, and I actually would like nothing better myself—why else did I become an academic?—but I simply have not time." Implicit in such a statement is a set of priorities by which time is committed to other matters first, and in our view those priorities should themselves be examined.

The sense of a dissolving Division is at least to some extent associated with a pattern of outward orientation that is a common and somewhat disturbing feature of modern academic life. To the degree that people regard themselves as members of a larger professional community their energies and talents are naturally directed away from the University itself, and to some degree to its cost. Of course it is important to maintain connections with, and standing in, one's larger professional community, and these relations often contribute in important ways to the life of the University. But the question of balance is an important one, and at the moment it seems to us inadequately addressed within the Division.

Some members of the Division complain that administrative burdens and teaching loads interfere with their capacity to pursue fundamental questions in the way they would wish. We are not in a position to evaluate either claim comprehensively, but we learned that at least some junior faculty feel they bear an unfairly large burden of departmental and administrative tasks. Since it is often they who teach in the College, they are asked to serve on College Committees in addition to departmental ones. In some instances, junior faculty may do more than their share of thesis advising and graduate teaching as well. For such people, of course, the burden of teaching is necessarily greater, for more of their courses will be new to them. At the same time, they are asked to do the research and writing which will qualify them for tenure. It would be both unfair and unproductive for junior faculty to be burdened disproportionately. In our view each department should be asked to report to the Dean its allocation of departmental and collegiate tasks, with a view to uncovering and correcting any imbalances that may exist.

The complaint that teaching interferes with fundamental work seems to us to suggest that something is wrong with the conception of teaching implied in the remark. One would think that teaching would by contrast offer a splendid opportunity for shared exploration

of fundamental themes. One of the merits of the Research Institute proposal detailed elsewhere in this report is that it would provide an institutional context and stimulus to that sort of teaching.

Finally, the departmentalization of the Division is perhaps partly the result of policy and structure. Unlike the Dean of the Humanities Division, the Dean of the Social Sciences Division has no general policy committee, but deals directly with department Chairs, and this may reinforce the departmental character of the Division. In addition, it has at least sometimes been administration policy to conceive of the strength of the Division in departmental terms. To some degree indeed budgetary pressures support the outward orientation of which we speak, for the Division depends substantially upon external support, and the faculty are encouraged to be active in obtaining it.

If the foregoing can be taken as an impressionistic picture of life in the Division of the Social Sciences, what might be done to improve things?

We have both general and specific responses. At the general level, it seems important to us to encourage the faculty of the Social Sciences Division to rethink the nature of their departmental enterprises, including the relation of one to another. Questions asked should include the following. To what degree is research and education in our field at Chicago properly or improperly specialized? Do our course structures and degree requirements make sense, as they are considered either alone or in connection with the rest of the Division? Should we, for example, require our students to take courses in other departments? Does our conception of the dissertation make sense, as a way of training those who will lead our field in twenty years? In what way can it be said, and can it not be said, that we are engaged in a common enterprise with the rest of the Division? These are questions that this Committee does not pretend to answer, for they must be addressed by the faculty concerned. But we think that the Divisional faculty should be encouraged to ask themselves seriously whether the Division can and should have a kind of life that some of them now feel it to lack. One possibility is that a communal life will not be possible at the level of the Division, but will be possible in some smaller cluster of departments. If so, perhaps a new structure reflecting that fact should be formed. In these deliberations, attention should be given to the proper balance between internal and external work.

A Research Institute of the sort described elsewhere in this report would be a natural forum in which the questions of field and Division might be brought into collective contemplation. Other possibilities have also been suggested to us, among which the most promising are the following:

Dean's Seminars (or University Seminars)

It used to be the practice for the Dean of Social

Sciences to sponsor a seminar, on a subject of interest to people in several departments, to which both faculty and students, on a limited basis, would be invited. (Perhaps each department might send two faculty members and two students.) Such a seminar could be directed by the Dean himself, or by someone chosen by him. There is no reason that there could not be several such seminars.

An Interdisciplinary Institute

As suggested above, one difficulty with the present way of life in the Division of Social Sciences is the degree to which it tends to be outward looking, rather than inward looking. An institute would provide an occasion and a structure for interdepartmental conversation and work within the University. Individuals would make proposals for cross-disciplinary work or work in fundamentals. The point would be to invite people to establish productive relations across disciplinary lines within the University. In appropriate cases, graduate students might also be involved in this work.

A Core Problems Seminar, Workshop, or Institute

A modification of the two foregoing proposals, which would supplement and support them, is the idea that certain faculty be invited to organize themselves into a community to examine the core problems of social science. This would be a way of engaging in fundamental intellectual work that would be both internal and external to each department; it would also be a way of raising in concrete form whether we do or can have a meaningful Division of Social Sciences. One way to start would be with a seminar, or internal conference; if that seemed fruitful, perhaps the natural next stage would be a conference organized here, but including others. This could lead to the establishment of a summer workshop, a permanent institute, and perhaps ultimately a degree program.

Divisional Ph.D.

A Divisional Ph.D. obviously can work only if it has faculty support of the strongest kind, and it has obvious dangers, but we think it is worth at least suggesting as a topic for discussion. The central idea of a divisional Ph.D. would be that the graduate in this field would have a kind of cross-disciplinary literacy and fluency that would enable him or her to function well in various kinds of academic, governmental, and private positions where comprehension of economics, social data, historical material, political and social structure, and the like are all important. Not that the graduate would be merely a translator from one field of expertise to another; he or she must be equipped to challenge and understand at the most basic level. The doctoral work would be designed with that end in view, and would naturally be cross-disciplinary and fundamental in character.

In this connection it is our view that the Division ought to consider afresh the nature and purpose of its

*Robert McC. Adams, a past Dean of the Division, recently identified the following "by no means complete list" of cross-departmental research centers:

- National Opinion Research Center
- Committee on Public Policy Studies
- Human Resources Center
- Center for the Study of Welfare Policy
- Center for Health Administration Studies
- Center for the Management of Public and Nonprofit Enterprise
- Population Research Center
- Community and Family Study Center
- National Center for the Assessing of Alternatives to Juvenile Justice Processing
- Center for Urban Studies
- Program for Urban Neighborhoods
- Law and Economics Program

TABLE 3: NATIONAL RANKING OF SOCIAL SCIENCES DEPARTMENTS AT THE UNIVERSITY OF CHICAGO*

Department**	1925	1957	1964	1969	1979	1980
Anthropology	NA	1	1	1	NA	1
Economics	3	2	3	3	3	3
Geography	1	2	2	1	NA	1
History	3	7	7	8	8	6
Political Science	2	2	4	4	6	4
Psychology	3	10	17	16	NR	15
Sociology	1	3	4	3	1	2

NA: Not applicable
NR: Not ranked

*SOURCES: 1925, 1957 and 1964 are from Allen M. Cartter, *An Assessment of Quality in Graduate Education*, Washington, ACE, 1966; 1969 is from Kenneth D. Roose and Charles J. Anderson, *A Rating of Graduate Programs*, Washington, ACE, 1970; 1979 is from the Ladd and Lipset Survey, *Chronicle of Higher Education*, 15 January, 1979; 1980 is from Jack Gourman, *The Gourman Report*, Los Angeles, NES, 1980.

**The Department (previously School) of Education was not included in these rankings. Published assessments of professional schools ranked it third overall in 1973 and second in faculty quality in 1977. See Rebecca Zames Margulies and Peter Blau, "America's Leading Professional Schools," *Change*, 5, no. 9 (November, 1973), pp. 21-27; "The Cartter Report on the Leading Schools of Education, Law, and Business," *Change*, 9, no. 2 (February, 1977), pp. 44-48.

present Divisional Masters program. While conceived of as providing a kind of core graduate education that would be of value across the Division, to a large extent it has become a degree for students not admitted directly to departments, some of whom regard it as offering them a chance to prove themselves and get admitted to a regular department after all. There are possibilities in the program for valuable work, including important teaching, but at present the program lacks the faculty support required to realize them adequately.

Reporting Requirements

We think that reporting requirements might help define the nature and degree of the "outside orientation" problem. It would be helpful, for example, for the Dean to be given an accounting of each faculty member's travel and consulting work performed during periods of residence. Similarly, as suggested above, each Department should report upon its allocation of departmental and Collegiate responsibilities.

The Departments

Regarded as separate units, several of the departments in the Division seem to be very strong indeed. They would include Anthropology, Geography, Economics, Sociology, and Social Thought; History, Political Science, and Education also have great strengths. Behavioral Sciences presents a special and difficult problem. It is now a collection of committees, some very strong, some much less so, apparently without a satisfactory sense of organization and purpose. The task of maintaining the quality in the excellent departments and improving the others is closely related to the

questions of Divisional life and structure discussed above, for it is a real question whether one part of the Division can be really healthy unless the other parts are too. At the very least, it seems to us ill-advised for any of the departments to assume that its strength is independent of the others.

Table 3 sets forth the "rankings" of most of the departments in the Division, and while we caution against inappropriate reliance on such figures, or such judgments, they do establish a general picture.

Any judgments we may have about the departments are of necessity extremely tentative, based as they are upon our own impressions, institutional surveys, and general reputation. But despite this uncertainty, we do wish to recommend that the structure of Behavioral Sciences be reexamined, including consideration of a clinical component. It has been suggested to us that the new arrangements might properly be designed to reflect existing strengths, such as in child development. In addition, it seems to us that the History Department lacks a sufficient sense of common purpose and identity, and we recommend that that Department consider ways in which the efforts of its members can be integrated with one another more effectively. One possibility would be to organize in groups that cut across temporal and geographic categories. We also wish to observe that three of the strongest departments—Anthropology, Economics, and Sociology—have a distinctive set of orientations and a distinctive character. These features may be positively related to their strengths, and indeed warrant emulation by others; on the other hand, they also mean that each is less than fully representative of the various strains that characterize the field in national terms. We do not take a position on this matter, but we do think that the proper character of a department is a question that ought to be considered within the departments and within the Division.

The importance of maintaining faculty quality where it is strong, and improving it elsewhere, cannot be emphasized too strongly, for it is upon the quality of the faculty that our enterprise ultimately depends. We think it essential that each department undergo a thorough external peer review, of the kind recommended in Chapter 3 with respect both to the quality of scholarship presently being performed and the nature of the graduate education programs offered. The issues raised in this report should be included among those examined by such review committees (and of course by the departments themselves).

Faculty-Student Relations

In addition to the matters discussed above, the central matters raised by members of the Division were the related issues of the difficulty of recruitment and the inadequacy of financial aid for graduate students, our

reports upon which have been incorporated elsewhere in this Report.

But one matter does deserve separate mention here and that is the question of the nature of the contacts between faculty and students in this Division. While complaints, of course, cannot be taken as gospel truths, we think it important to report that in our conversations with students we heard numerous complaints made about the inadequacy of faculty supervision, and the absence of remedy in such cases. The most common complaints concerned delays in reading dissertation chapters, lack of guidance in research, inadequate curriculum, and the like. These complaints ought in our view to be taken seriously by the faculty. In this connection it is worth emphasizing that the "workshop" model used in the Department of Economics to supervise the development of dissertation topics and the various stages of research has the great merits of collegiality and publicity. Under this system, a student has several contributors to his guidance, including fellow students, and more than one person to talk to about his work.

In addition, there seem to be fewer opportunities for interaction among the students, and between students and faculty, than was once the case. (The Social Sciences Tea Room apparently once served as such a meeting place, for example, and so did the Education Library before it was moved to Regenstein.) This may be less of a problem in Economics, thanks to its workshop method of operations, and perhaps in some of the smaller departments, too. But in some of the departments the students feel isolated from faculty, as well as from each other. While the attitude surveys reported in Chapter 4 are only surveys, and ought not be given inappropriate weight, they do tend to show that the students perceive themselves cut off from the faculty more in this Division than the others.

This is not merely a matter of amenity, although amenities are important to both recruitment and retention; it is a matter of the kind of intellectual life our students participate in, which in turn deeply affects the sorts of intellectuals they themselves become.

We have no specific recommendations on this point beyond including this issue among those with respect to which we would ask the departments to evaluate themselves.

D. The Division of the Humanities

Hobbes believed that self-preservation was the ultimate motive. The license plate of the State of New Hampshire advances a different political theory: "Live Free or Die." The contrast suggests the importance of a prudent sense of survival on the one hand, and the importance of maintaining what is worthy of protection on the other. Balancing the defense of cherished goals

against adaptation to necessity is a delicate game. In what follows, we will document a sense of crisis in many Humanities departments. In the section entitled "Ethnography," we will delineate the elements of the crisis, as well as the Division's strengths. When we reach the section entitled "Solutions and Recommendations," we will try to avoid mere adaptation on the one hand and unreflective defense on the other. Instead, we hope to suggest ways in which crisis and decline can be turned to advantage, an occasion for re-evaluation and positive reformulation.

Throughout the country, the humanities have been disproportionately affected by the rampant voluntarism and vocationalism that struck higher education in the 1970s. Many colleges and universities granted students greater freedom in their programs of study. Required courses in the humanities were abandoned, language was declared a low priority for Americans. At the same time, an uncertain economy diverted students from liberal curricula to professional programs. Preprofessional majors grew dramatically between 1969 and 1976, while general education and breadth requirements declined from forty-three percent to thirty-four percent of the typical course of study.¹ The President's Commission on Foreign Languages and International Studies reported that, in 1966, one third of American colleges required knowledge of a foreign language for admission. By 1980, the figure was eight percent.²

This national sense of malaise has had painful local repercussions. Morale in the Division of Humanities is low. When faculty members talk freely, they seem inclined to complain about their lot: about falling enrollments, about inadequate salaries, about overwork, about inadequate or non-existing funding for research and conference expenses, about inability to make appointments, about alleged inequities among the Divisions or among departments, about favoritism. Not all departments speak with an equally gloomy voice, but we seem to have entered a time when a perception of general woes risks turning the Division against itself.

Because the humanities are fundamental to learning, and because they play an essential role in sustaining other areas of learning and the general intellectual tone of the community, the University cannot afford to let such malaise persist. The critical role of philosophy and the access to meaning afforded by literature and the arts are further augmented by the role the humanities play in the intellectual life of other areas of learning. They provide the linguistic and stylistic focus, the very medium of discourse, that enable the imagination in other disciplines. Whatever ails the humanities, and weakens their excellence and morale, will weaken other areas of the University. Because it is not possible to sustain a major university without first-rate perfor-

mance in the humanities, the Humanities Division requires the collective support of the University in its time of troubles.

In what follows, we will propose a series of initiatives more radical than those suggested by the internal committees the Division has constituted in recent years. They have shown a distinct propensity to let extant curricular and departmental arrangements maintain themselves, while noting the University's sins of omission with respect to the quality of Divisional and faculty life. We hope to suggest that curricular and departmental arrangements could profit from a more innovative approach on the part of the faculty and that the quality of student and faculty life could profit from Divisional and University attention.

Ethnography*

The Humanities Division is the second largest of the four graduate Divisions, with over five hundred students and some one hundred faculty members. It is also the most complex. It contains twenty-two to twenty-four units depending on how one counts: thirteen departments plus the part of the History Department considered humanistic, seven committees recommending degrees, and two programs. The biggest departments are English with about 100 registered students; Art, about eighty; Near East Languages and Civilization (NELC) and Philosophy, each about fifty; Music and Linguistics, each about forty. It provides many services to persons outside the Division who want a humanistic education and languages. In 1973 (the most recent year for which figures are available), it taught 22,476 undergraduate person-units in 1,664 courses, and 18,133 graduate person-units in 2,684 courses. It teaches forty-five different languages, thirty on several levels. Different departments contribute very differentially to undergraduate education: in 1973, undergraduate education accounted for forty to sixty percent of the total teaching commitment of Art and Design, of Germanics, Romance, Slavic, Music, and what the Humanities Dean calls the "Diverse Humanities"; twenty to thirty-five percent of the commitment of English, Philosophy, and Far East; and seven to fifteen percent for the rest. Faculty-student ratios in the 1973-76 period were very high: sixty-one percent of classes had ten or fewer students and forty-one percent had five or fewer. The fact that graduate language departments provide advanced levels of language training which draw very small constituencies

*Our ethnography is based, in varying proportions, on participant observation, research in the brochures and reports published by the departments and the Division, and systematic inquiries. We interviewed all chairmen of programs and departments and convened meetings of senior faculty, junior faculty, and graduate students to discuss education and research in the Division.

helps account for the extreme proliferation of small classes.

Enrollments

A chief cause of low morale is declining enrollments. These are associated with the parochializing of American secondary education and the decline of language teaching in public schools. Since 1968-69, applications in the Humanities Division have declined by 53 percent and enrollments by 35 percent. However, the loss was unevenly distributed across the Division, affecting most severely the modern language departments and less severely Art, Music, and "exotic" languages. Two units, Comparative Literature and Music, increased their enrollments (see Figure 1). Seven units remained essentially stable (Figure 2): Art, History (Humanities), History of Culture, Linguistics, Near Eastern Languages and Civilizations, Philosophy, South Asian Languages and Civilizations. Seven experienced precipitous declines (Figures 4 and 5). Among these, the modern languages, victims of the shrinking language requirements of the American school system, were conspicuous: Germanics, Romance, Slavic, English (Figure 4). Classics, Ideas and Methods, and General Studies also experienced precipitous declines (Figure 5), while Far East and New Testament experienced lesser losses (Figure 3). (We do not here account for some units founded after 1968.)

There may be some lessons in the pattern of the losses, although readers are warned to inspect the attached representations of enrollment curves with some care to get a sense for variability over time, and recent recuperations and declines. We have encountered many hypotheses about why differences are so great. Exotic languages have held up better than modern European ones. Whether that is because they are all language and *civilization* rather than language and literature programs, that is, more broadly gauged in disciplinary terms, or because they are exotic, is unclear. The fact that they receive federal funding and can provide substantial fellowships surely helps account for their greater stability in recruitment. Some departments have buttressed or increased enrollments by lowering selectivity in admission at the M.A. level (see Table 7 and discussion). But the hypothesis that broad gauge programs hold up better than narrow gauge may be borne out by the fact that Comparative Literature and History of Culture, as well as the language and civilizations programs, have held up.

Does the Division Get Its "Due"?

Members of the Humanities Division have been heard to wonder whether the Division is disadvantaged by comparison with other units of the University in ap-

TABLE 4: NUMBER OF FACULTY AND NUMBER OF STUDENTS BY DIVISION, 1980

	Number of Faculty	Number of Students	Student/Faculty Ratio
Physical Sciences	119	368	3/1
Biological Sciences	75	286	4/1
Social Sciences	151	1,053	6/1
Humanities	100	537	5/1

pointments, salaries, and budget allocations. We have not attempted a salary comparison to answer this question. There is an understanding that salary levels in the sciences and in several of the professional Schools are somewhat higher than in either the humanities or the social sciences. The appropriate comparisons would be national rather than local. Nor have we attempted to measure budget allocations, where the needs of science and some social science departments create conditions incomparable to the humanities. Although he or she may require some expensive retrospective library acquisitions, a Sanskrit professor does not require a quarter-million-dollar high vacuum system to start research, or even \$3,000 of computer time to teach a class.

Another measure might be whether the Division receives its "due" in the number of faculty it has on its roster. This measure, too, is difficult to apply. Presumably the appropriate size of the faculty should be measured in light of the diverse functions it is expected to perform, and the proper diversity is hard to specify. By a simpler measure—number of faculty in proportion to number of graduate students—the Division appears to compare favorably with the Social Sciences, and less favorably with the Physical Sciences and Biological Sciences Divisions (see Table 4). This measure may be insufficient. If we had comparative figures by Division of undergraduate and graduate person-units taught, we might discover that the teaching burden in the Division of the Humanities is heavier than the graduate student figures show.

We have been able to gather some data on whether the Humanities Division receives its "due" in appointments, if the measure of "due" is the proportion of new tenured appointments to total faculty size in the 1972-80 period. Are departments given plentiful scope to make new high-level appointments? By that measure, the Division appears to receive more attention than any other. New tenure appointments in eight

years were 61 percent of faculty strength in 1980, while the nearest comparable Division, Social Sciences, appointed only 44 percent of faculty strength.

We are not quite sure how to account for this figure. Since many of the appointments are from the rank of assistant professors, it does not necessarily imply a high turnover rate. In any case, it suggests the University is not unwilling to make new appointments in the humanities.

The Scarcity of Extras

Malaise can flow from the grandest historical crisis or from the most banal of micro-misarrangements. Many members of the Humanities Division felt they were being nickel-and-dimed to death, that many of the little supports and benefits that ease the flow of daily academic activity were missing. Some faculty considered the Division niggardly.

They were right to imagine that some Divisions—notably in the natural sciences—live in a more generous financial environment, in which xerox and typing expenses, research assistants, long-distance phone calls, and travel expenses do not loom as major obstacles to daily life. Even in the Social Sciences Division where the quality of faculty life is comparable, and secretaries, foolscap and travel money are often scarce, some departments and individuals with independent funding and a steady flow of research grants enjoy academic overheads that ease writing and research. More generous funding of small overheads would make a lot of difference in the Humanities Division, as would better information about the equity with which they are dispensed.

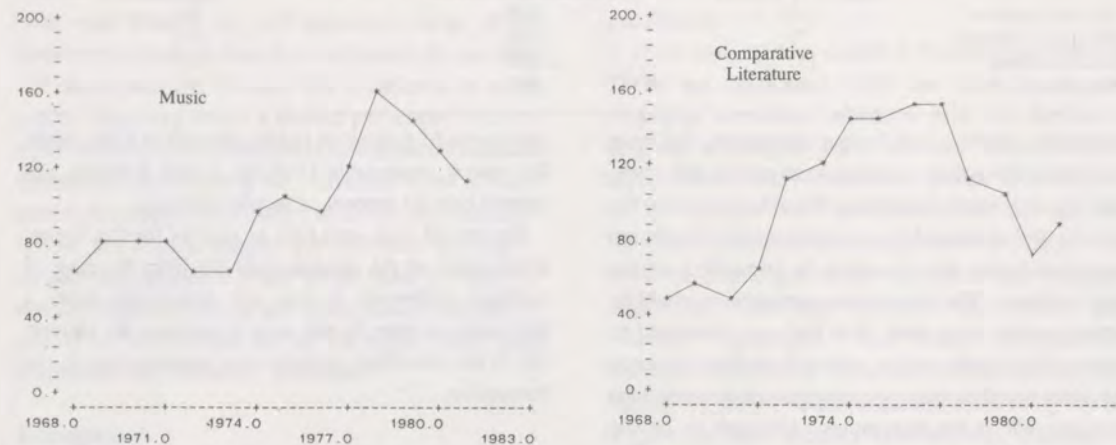
The Quality of Faculty and Programs

The same variation that marks this Division in other respects characterizes departmental faculty. We have not found it easy to determine the competitive standing of different departments, but there are clearly a few

TABLE 5: NEW TENURED APPOINTMENTS AS A PROPORTION OF FACULTY SIZE (1972-73 to 1980-81)

	Faculty Size (1980)	Number of New Tenured Appointments	Percent Appointments to Size
Physical Sciences	119	46	39%
Biological Sciences	75	28	37%
Social Sciences	151	67	44%
Humanities	100	61	61%

Figure 1: Humanities Departments With Increased Enrollments (1968-82)
Base: 100=Department's 14-Year Average



that feel themselves well up in the national leagues, and some that do not. We are given to believe that several departments include a fair number of senior faculty who feel no incentive to continue publishing. The term "dead wood" crops up now and then. An aggressive, quality appointments policy can obviously make a difference and improve a department's attractiveness. This appears to have been the case with Music over the last ten years. But there are limits on such a remedy. The effect of the extension of retirement age on tenure patterns makes it particularly difficult to introduce new faculty into weaker departments. In such cases, encouragement to early retirement is an available remedy.

With some trepidation, we include Table 6 as a rough indicator of the perceived quality in a few departments. It is drawn from a series of surveys conducted since 1925, surveys of varying degrees of competence and reliability. We recognize that there are problems in regarding these surveys as accurate at any given time, but they do have a cumulative force.

The over-time comparisons, which show Chicago Humanities leading the nation in most ranked departments in the 1920s and declining thereafter, reflect the increased competition from high quality public education in the post World War II period. Thus most of Berkeley's ranked Humanities departments have, since the 1950s, occupied first through fifth position, and the University of Michigan's departments occupy rankings competitive with many of ours. The strongest competitors in the Humanities, however, remain Yale, Princeton, and Harvard.

These surveys fail to capture Chicago's virtues: they do not include interdisciplinary programs and committees which are a distinguishing feature of Chicago education and which, as our earlier figures show, have continued to attract students when other department enrollments have declined. The surveys do not capture

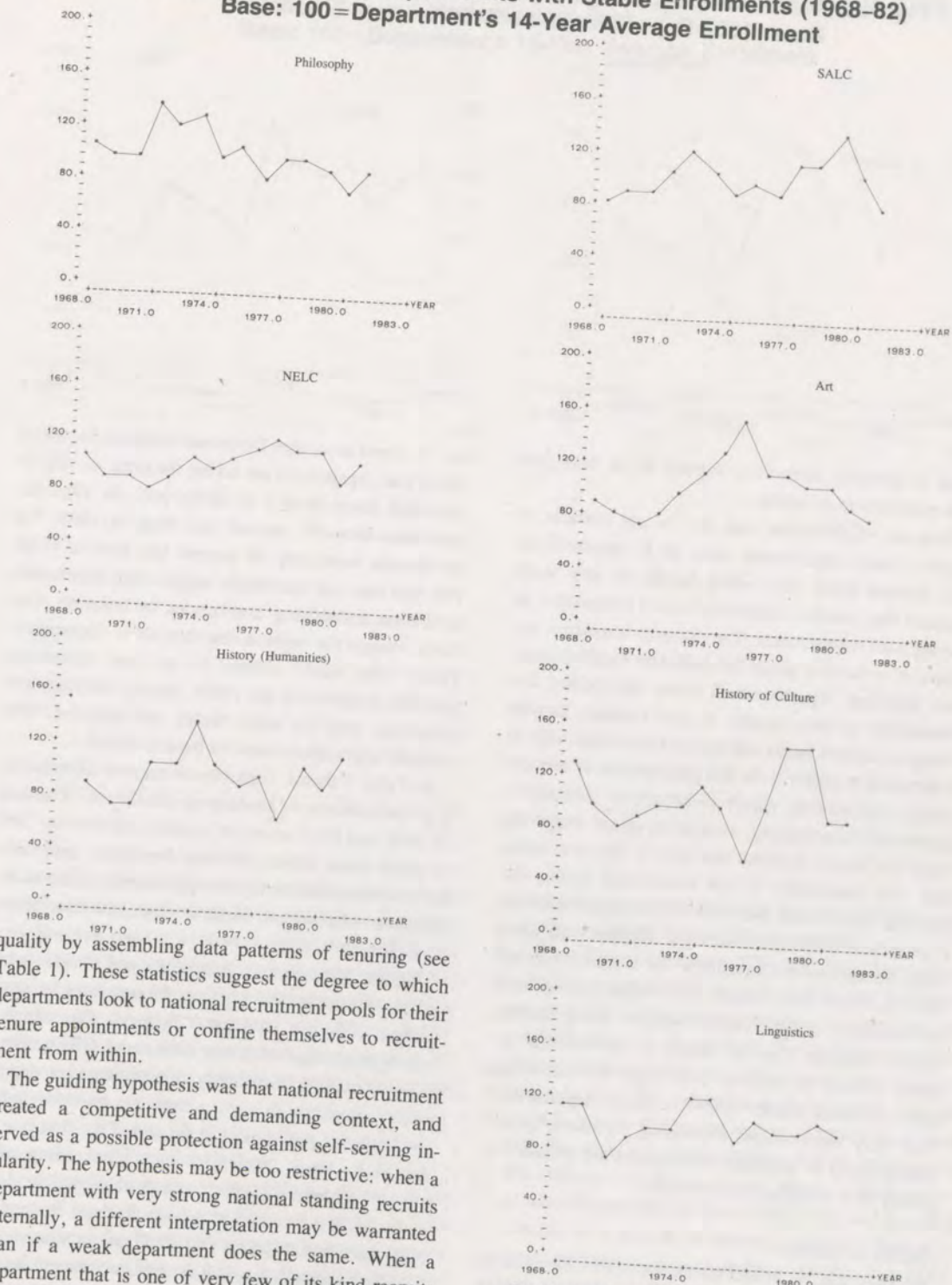
the "exotics" among language departments, where large and stable departments such as Near Eastern Languages and Civilizations, with long and distinguished traditions in archaeology and ancient languages, constitute much of the action in our Division; and a small department such as South Asian Languages and Civilizations regularly contributes to first or second national ranking in the competitions for South Asia centers. None of the ACE surveys paid attention to Art and Music. When Ladd and Lipset in 1980 prepared a survey, this effort by two distinguished social scientists virtually ignored the humanities. Its review of music departments compared incomparables—the Juilliard School of Music, with its practical orientation, bears little relationship to a musicological department like ours. Its report on a general category denoted "foreign languages" suggests that to some social scientists all non-American languages look alike.

Nevertheless, Table 6 gives some sense for variations, and does not depart too far from what we could gather in our inquiries. The trends over time suggest that in an expanding universe of graduate departments, the Division as a whole has not held its own as it should. The Table suggests that movement among nationally ranked departments has been as often down as up. In a few cases, current low national standings have long precedent. Better and more discriminating measurement that gave data over time, and which included our "exotic" fields as well as interdisciplinary programs would probably have presented a stronger overall picture.

The disparity between the categories that national ranking schemes have the wit to report, and what we excel at—interdisciplinary programs, non-Western area programs—points to the need for a strategy of making our strengths known nationally.

The Commission also approached the problem of

Figure 2: Humanities Departments with Stable Enrollments (1968-82)
Base: 100=Department's 14-Year Average Enrollment

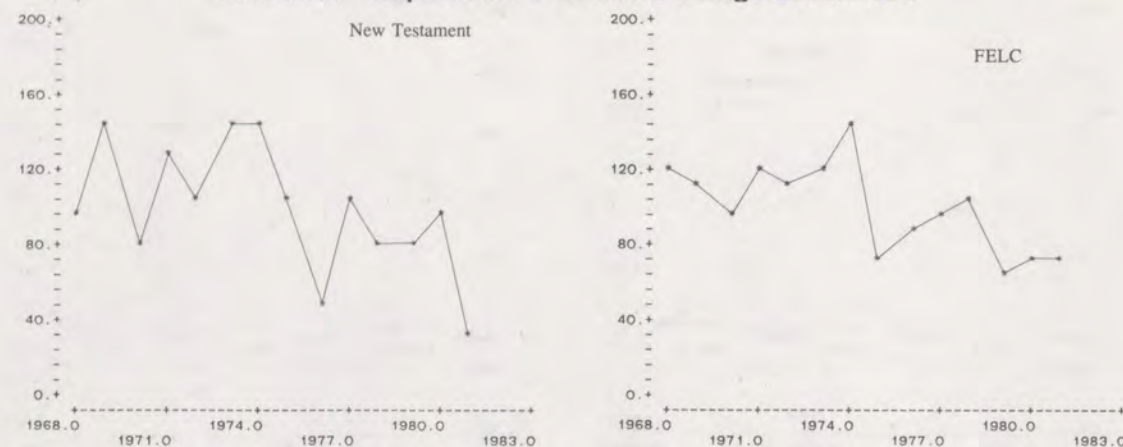


quality by assembling data patterns of tenuring (see Table 1). These statistics suggest the degree to which departments look to national recruitment pools for their tenure appointments or confine themselves to recruitment from within.

The guiding hypothesis was that national recruitment created a competitive and demanding context, and served as a possible protection against self-serving insularity. The hypothesis may be too restrictive: when a department with very strong national standing recruits internally, a different interpretation may be warranted than if a weak department does the same. When a department that is one of very few of its kind recruits internally, again a different interpretation may be warranted than otherwise. The data above should be viewed in the light of these various possibilities, and perhaps others we have not conceived of. We also note that the Humanities Division, as a whole, with 62 percent inside recruitment, performs better on this measure than Biological Sciences (82 percent) and Physical Sciences (70 percent) but worse than Social Sciences (42 percent).

Quality is also dependent on program. We received a strong sense that too many departments, and some interdisciplinary programs, are in radical need of redefinition of their course programs and requirements. We were told that some have in effect no program at all—that students are left to drift through electives and with little guidance. Whether this is so or not, the written evidence seems to be that some programs have not been rethought for many years. Obviously we cannot

Figure 3: Humanities Departments with Declining Enrollments (1968-82)
Base: 100=Department's 14-Year Average Enrollment



hope to advertise attractive programs if we have few real programs to advertise.

Program requirements can also be an obstacle to quality. Some departments hang on to requirements that prevent them from using faculty in new ways because they perceive nationally ranked competitors as having such requirements. The dilemma is a classic example of collective goods (or collective bads) calculation: language departments all across the country find themselves in deep trouble in part because, despite changing support bases and demand structures, each is determined to preserve the full proliferation of conventional requirements which it perceives competitive departments maintaining, even while all are staggering under the shared overload that each is forced to maintain. The implication is that maintaining quality humanities departments may well call for imaginative and even radical thinking about which requirements make sense for various constituencies: for students who will teach in liberal arts colleges, for students going on to non-academic careers, and for students going into advanced research. Can the world of required and optional courses be structured in ways that encourage more common courses across language departments? That vary requirements depending on career goals? Reevaluation of programs can address the problem of quality in a changing environment.

Quality of Students

We have tried to reflect on the quality of the students who now enter the Division; our reflections have been aided by the Commission's systematic survey of entering graduate students and of those who declined admission, reported in Chapter 4. As we have no data over time, we cannot speak to the question of whether standards of performance are stable or declining, but we can say a few things about quality at the moment. As we noted in the earlier chapter, Divisional applications

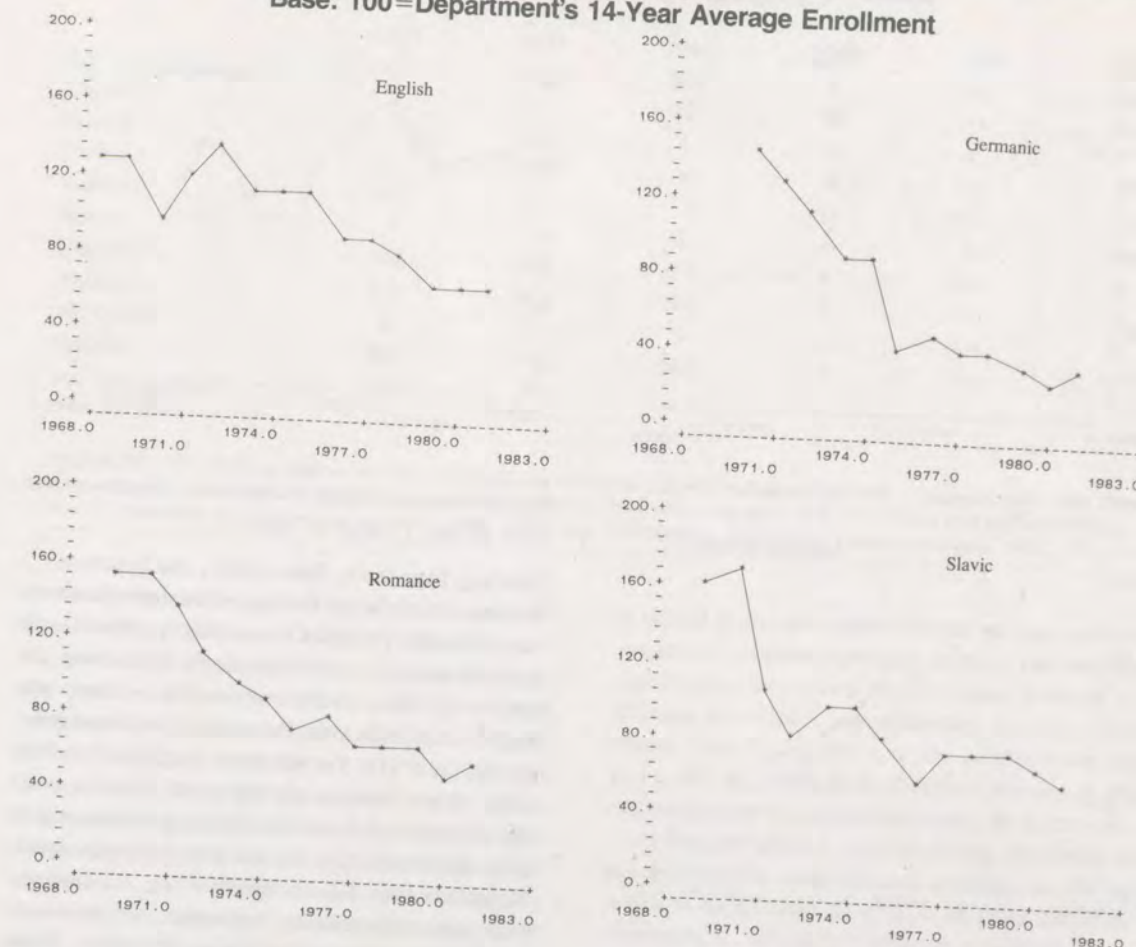
have declined more than Divisional enrollments, which means that departments are taking the same number or somewhat fewer from a shrinking pool. In 1981-82, applicants were 53 percent less than in 1968, but enrollments were only 35 percent less than in 1968. This fact does not necessarily suggest that departments have been maintaining enrollments by lowering standards, though the opinion that they do is widespread. Those who would choose to go into humanities graduate programs in the 1980s, despite declining job prospects, may be more highly self-selective, and multiple applications seem to have declined.

As Table 7 shows, departments respond differentially to the problems of keeping up enrollments. The data on GRE and GPA scores of students admitted in 1980 in some cases reflect different strategies, especially between departments that strongly emphasize the M.A. and those who do not. In some cases, the data reflect problems.

Art and Near Eastern Languages and Civilizations, which have unusually high acceptance rates by comparison with the Divisional average, also admit a higher percentage of lower GPAs and GREs. There may be nothing particularly threatening to a department's standards in such a strategy, provided it has good internal gatekeeping at the end of the first year or the M.A. level. Nor need such gatekeeping raise morale problems if students enter with the wish and expectation of a terminal M.A.—as do those students in Near Eastern Languages and Civilizations who want a Mid-East specialty in order to enter government service or private firms, or those older persons in Art who come for a continuing education, for enrichment, or to prepare for technical and administrative jobs in the art world.

Some departments adopt a different strategy, trading off lower acceptance rates for higher GPAs or GREs than the Division as a whole. Comparative Literature,

Figure 4: Humanities Departments with Precipitously Declining Enrollments (1968-82)
Base: 100=Department's 14-Year Average Enrollment



which achieves a higher than average acceptance rate while minimizing the low GREs and GPAs, illustrates an outcome most departments would prefer. The fact that Comparative Literature gets more migrants from other departments than do most departments may help account for the high acceptance rate. Those departments that have low acceptance rates despite the generous reach of their admissions policy have problems.

Recruiting and Retaining Students

Many faculty worry that in recruiting we do not get our share of the national pool. There is a good deal of worry about the Division's capacity to attract enough students and the best of them. In Chapter 4, we considered a rough measure of the University's ability to attract the best students in the national pool by asking what proportion of those students admitted to Chicago and seven other distinguished graduate schools (selected for comparison by Division) chose to come here rather than go to one of the others. By this measure the Humanities Division as a whole, like all other graduate Divisions except Social Sciences, was

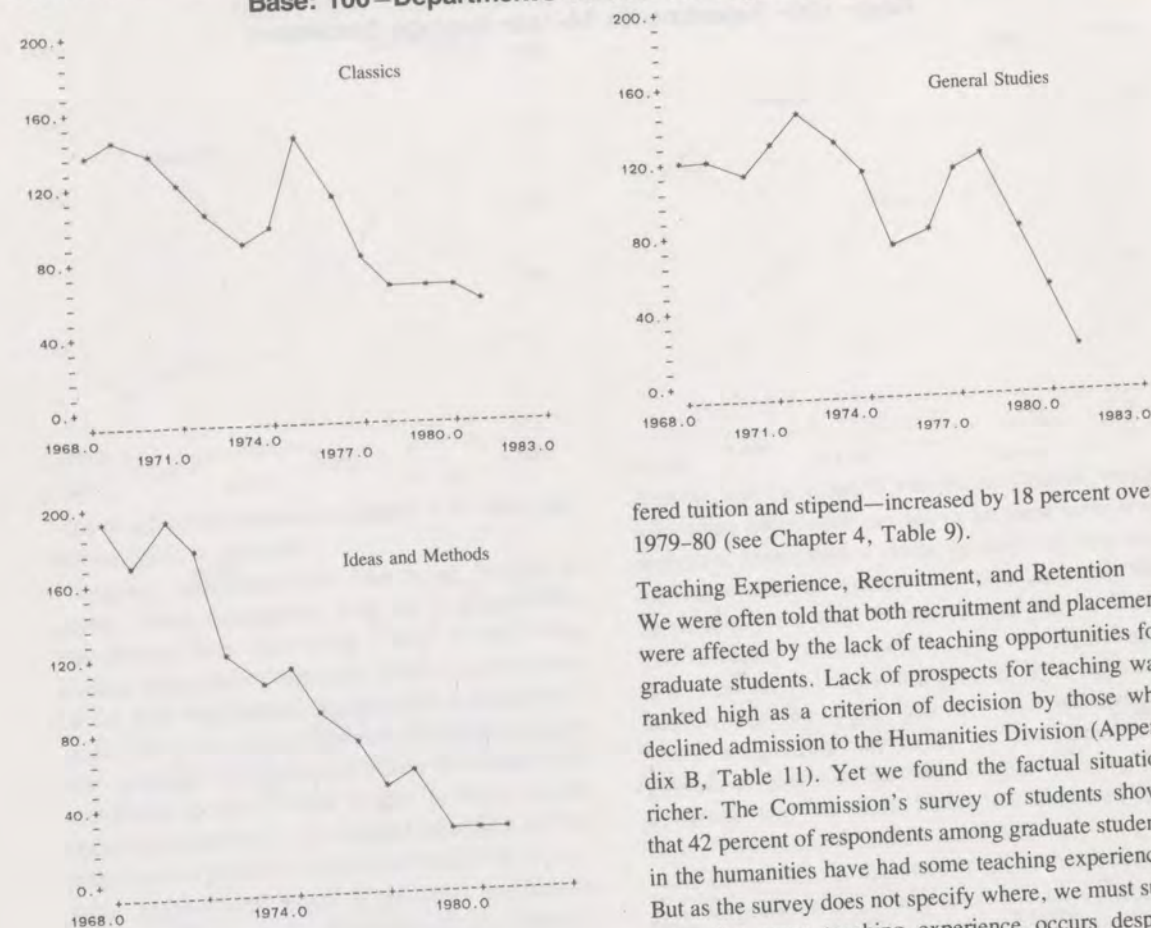
somewhat less competitive for the most attractive prospective students than might be expected.

What attracts students to Chicago? What keeps them here? It is improbable that they come for the lovely weather. The Commission's survey confirmed what the common sense of the graduate faculty would assume, that students make their decisions mainly on the quality of the faculty, the reputation of the program, and the overall quality of the institution (Chapter 4, Figure 4D). Yet there is a certain fickleness in the operation of this criterion. On the one hand, Music (which has increased its enrollments since 1968) attributed its rising fortunes to a growth in national reputation related to good appointments and promotions. On the other hand, high standing in the national ranking did not prevent declining enrollments in the English department.

Money and Recruitment

How about money? Several departments thought particular competitors offered higher aid packages: Philosophy believed Harvard, Yale, and Pittsburgh did so; Near Eastern Languages and Civilizations mentioned large grants at Yale; Slavic believed that competition

Figure 5: Humanities Departments with Precipitously Declining Enrollments (1968-82): Other
Base: 100=Department's 14-Year Average Enrollment



from Illinois/Urbana, which has a National Resource Center in Slavic, and can afford to give substantial (about \$11,000) federally funded fellowships, was damaging.

A study of students declining our offer of admission suggests that a significant portion of those students whom we only admit without aid do get aid at other schools, and that about half of them receive high levels of aid, above \$5,000 (Table 8). It also suggests that money makes some but not all the difference in attracting the students we most want to attract—those whom we identify as promising enough to offer tuition plus some stipend. According to the Commission's study, half of the twenty-two students falling in this category who declined the Division's offer received less or about the same amount of money from other institutions.

Security of funding seems to make a great difference. In Chapter 4, we discussed the consequences of the new policy inaugurated in 1981, which guaranteed continuation of the support offered to incoming students for three years at the same level, subject to satisfactory academic performance. As a result of this policy, acceptances among the students we sought most to attract—that is, those to whom we of-

fered tuition and stipend—increased by 18 percent over 1979-80 (see Chapter 4, Table 9).

Teaching Experience, Recruitment, and Retention
We were often told that both recruitment and placement were affected by the lack of teaching opportunities for graduate students. Lack of prospects for teaching was ranked high as a criterion of decision by those who declined admission to the Humanities Division (Appendix B, Table 11). Yet we found the factual situation richer. The Commission's survey of students shows that 42 percent of respondents among graduate students in the humanities have had some teaching experience. But as the survey does not specify where, we must surmise that some teaching experience occurs despite rather than because of the University's efforts. There are now teaching opportunities in the College, and these are likely to increase modestly. Where there are few opportunities within the University, some departments have been inventive in supplying teaching experience and training through internal apprenticeships and extramural opportunities in cooperating colleges. These opportunities need to be enhanced and made more visible, especially in our recruitment literature.

In 1979-80, eighteen graduate students in the humanities were involved in regular college teaching. They taught, or taught in, forty-six quarter courses as lecturers (ten), course assistants (two), tutors (five), and graders (one). The Slavic and Romance Languages Departments have generally selected from their own advanced graduate students for elementary language teaching positions, while Germanic has been reluctant, on the problematic presumption that such selection is more risky for the College. While national competition is a valuable check on local favoritism, the quality of our graduate students is high and our information about them is better than about outsiders.

The departments of English and Slavic have developed fairly elaborate apprenticeship programs. English

TABLE 6: PUBLISHED RANKINGS OF HUMANITIES DEPARTMENTS OVER TIME
AT THE UNIVERSITY OF CHICAGO*

	1925	1957	1964	1969	1979	1980
Art	NA	NA	NA	8	NA	NA
Classics	3	7	12	12	NA	NA
English	4	8	6	4	4	7
French	NA	15	10	6	NA	7
German	5	11	12	17	NA	17
History	3	7	7	8	8	6
Linguistics	NA	NA	NA	4	NA	5
Music	NA	NA	NA	5	NR	5
Philosophy	3	7	9	12	NA	8
Russian	NA	NA	NA	5	NA	4

NA: Not applicable
NR: Not ranked

*SOURCES: 1925, 1957, and 1964 are from Allen M. Cartter, *An Assessment of Quality in Graduate Education*, Washington, ACE, 1966; 1969 is from Kenneth D. Roose and Charles J. Anderson, *A Rating of Graduate Programs*, Washington, ACE, 1970; 1979 is from the Ladd and Lipset Survey, *Chronicle of Higher Education*, January 15, 1979; 1980 is from Jack Gourman, *The Gourman Report*, Los Angeles, NES, 1980.

works through two regularly scheduled courses. In English 504: Problems of College Teaching, students are associated with a professor teaching an undergraduate course, and have opportunity to take a number of class periods and receive criticism. Students in English 503: Teaching Composition, receive experience through small composition-discussion groups and a large lecture course in advanced composition. The Slavic model is relevant for other foreign language departments, and indeed Germanics and Comparative Literature have aspects of an internship program. In Slavic, students are given supervised experience in handling drill sessions and other features of teaching for language courses. The internship, as in English, is part of the educational program, not a job, but interns are the means by which Slavic forms a trained pool from which lecturers can be selected.

Finally, several departments have developed lines to colleges in the Chicago area that can use the skills of our graduate students on a temporary basis. The English Department can count on a limited number of predictable slots in city colleges where its students teach freshman composition under supervision for pay. Several departments have had similar offers that have not been pursued for lack of student interest or faculty push.

In so far as graduate departments want to increase teaching opportunities to meet the competition of the T.A. stipends at state universities, they are doomed to disappointment. We see only marginal prospects for increase in *paid* teaching opportunities within the University.

Morale and the Quality of Life

Morale among students surely affects retention rates. It

is related to the recruitment factors we have already considered: program reputation, money, and teaching opportunities. But once a student is here, levels of intellectual stimulation, companionship, support and attention from faculty, services, the neighborhood, all play a role. According to the Commission's survey, the dominant mood of graduate students in the humanities, when they are asked to summarize their perception of the University's programs and services, is one of moderate satisfaction, as it is in all other Divisions (Appendix B, Table 27). Yet in our conversations, we encountered widespread complaints about a sense of neglect felt by students at all levels. This of course varied greatly from program to program. We suspect, but cannot prove, that the programs that are least troubled by declining retention tend to be those that pay most attention to students, from the time of application until the (sometimes bitter) end. We would be surprised if findings were markedly different among students at our equally high-achieving, frostbelt competitors. But that is no reason for accepting the existing situation.

Graduate students in the humanities "use" the University less than do other students: they use the community resources, food services, transportation, Student Health, orientation, Student Housing, less than do other students. They use the athletic facilities strikingly less than do other students. Financial aid is the one facility they use strikingly more (see Appendix B, Table 40). Are they less integrated into the community? Or is this a matter of taste and style?

Sixty-two percent of our graduate student respondents in the Humanities Division work, slightly less than those in the Social Sciences (67 percent), but many more than those in the Biological or Physical Sciences Divisions, of whom only 25 to 29 percent

TABLE 7: DEPARTMENTS GROUPED BY PERCENT OF ADMITTEES UNDER 600 VERBAL GRE OR UNDER 3.5 GPA (1980-81)

Department (no. in parentheses is total admits)*	Percent Under 600 Verbal GRE**	Percent Under 3.5 GPA***	Percent of Admits who Accepted
		Group I	
FELC (12)	67	58	25
Romance (14)	55	57	29
Art (53)	49	51	40
General Studies (20)	33	55	50
SALC (8)	50	38	25
		Group II	
Music (28)	28	46	28
Slavic (9)	60	11	11
German (5)	50	20	20
History (Hum) (29)	36	34	31
Classics (14)	17	43	0
		Group III	
Philosophy (39)	21	26	30
English	16	26	37
Comp. Lit. (171)	17	21	40
History of Culture (5)	0	20	40
Ideas & Methods (5)	0	20	20

*This figure is the same as the figure of total admits reporting Grade Point Averages GPAs. The number reporting GRE scores is lower, as not all students take the Graduate Record Examination. The percentages have to be treated with skepticism where the total admitted, in parentheses, is very small.

**As a percent of admits reporting GREs.

***As a percent of admits reporting GPAs.

work (see Appendix B, Table 34). Work obviously adds to the sense of overburden—more than half the students who work complained that the work conflicted with their studies.

Another source of discontent may be the fact, discussed in Chapter 4, that the road to the Ph.D. in the Humanities is uncommonly long. This is true nationally and locally: an average of ten years for men, twelve for women. Some of our distinguished competitors do better by three to six years: Cornell, Harvard, Princeton, Yale, Massachusetts Institute of Technology (Chapter 4, Table 1). Why? Money may be part of the answer. Shorter graduate programs and different requirements may be another. The Commission's urgent recommendations for revised tuition and residency requirements are responsive to this question (See Chapter 4, Section B).

In our discussion of the proposal to create a Research Institute in the Humanities and Social Sciences Division (Chapter 6), we address the anomaly that students receive declining attention from their research-oriented faculty at precisely that moment when they begin serious research. Admission at the end of the second year to the Research Institute and its problem-oriented workshops would provide a systematic context in which students could carry on advanced work among peers and elders engaged in a similar enterprise. A Graduate Student Center would enhance opportunities for collegial interaction.

Our ethnography has suggested areas of strength and of weakness, and prepared the ground for prescription. Our recommendations will be locally oriented. Their impact and effect could be significantly influenced by changes in national trends which are not, however, clearly discernible.

Solutions and Recommendations

We shall organize our discussion of solutions and recommendations around six subjects:

- The re-evaluation and reformation of curriculum and organizational forms in the Division, in the light of the various goals of graduate education as we have articulated them.
- The establishment of a Research Institute in the Humanities and Social Sciences.
- The prospects for a Language Institute.
- The M.A. in a "multiple exit" Divisional education.
- An aggressive policy of high quality new appointments in faltering areas.
- A serious reconsideration of the way the Division presents itself to the outside world.

The Multiple Goals of Graduate Education

In Chapter 3, we emphasized that graduate education at the University of Chicago prepares three overlapping groups: research-oriented graduate faculty for advanc-

TABLE 8: COMPARISON OF U.C. INITIAL AID OFFER AND FINANCIAL AID PACKAGE ACCEPTED BY THOSE WHO DECLINED ADMISSION, HUMANITIES DIVISION, 1980-81

(Number)	U.C. Initial Award Offer			
	No Money (117)	Partial Tuition (23)	Tuition (23)	Tuition Plus Stipend (23)
Value Other Packages				
\$0-1,999	23%	22%	9%	9%
\$2-3,999	13%	13%	17%	9%
\$4-5,999	18%	13%	13%	18%
\$6-7,999	17% (9%)*	17%	26%	27% (13%)*
\$8,000 or more	29%	35%	35%	36%

*In the absence of precise figures, we have assumed that the grants in each package fall half in the lower and half in the higher portic category, and have aggregated the percentages in the first and last columns accordingly.

ed teaching and research; teachers for liberal arts colleges; humanistically oriented non-academic professionals. Typically, the Division of the Humanities has given very different emphasis to each of these goals. It has seen itself as providing education principally (if not exclusively) for future research scholars and graduate teachers.

Yet the distribution of our students across college teaching, advanced teaching and research, and professional roles has changed by comparison with earlier times. The proportion of our Ph.D.s in the humanities who go into teaching and research has been declining in the last ten years, from 93 percent in 1970-71 to 69 percent in 1979-80 (Chapter 2, Table 4).

The relative emphasis at Chicago on advanced teaching and research is appropriate. It represents our comparative advantage and our special vocation. But this emphasis need not preclude the faculty from more imaginative attention to other goals. When in some departments six professors are reduced to practicing their comparative advantage on no more than the same number of graduate students, related goals can legitimately claim more attention.

Is it reasonable to imagine a graduate education in the humanities, or possibly in humanities and social sciences, which would educate graduate students, or some of them, more liberally and less narrowly than we have so far done; which would explicitly envision an education with multiple outcomes—graduate teaching and research; undergraduate teaching; research and prescription in profit, not-for-profit, and government institutions; professional and policy jobs? One can imagine a variety of possibilities in addition to broadening within the specialized Ph.D.: wide Ph.D programs in, say, European studies at a cross-Divisional level; a Divisional Ph.D. in the humanities oriented to cross-departmental subject matter; joint programs with professional Schools with double counting encompassing

humanities and law or business; M.A. programs in policy and economics for humanists who want to add a professional capacity to their humanities preparation.

Such a conception means we should also envision more numerous exit points, as English already does, in which, say, the M.A. is conceived of as a terminal generalist degree as well as a step towards the Ph.D.; and in which one conceives of hyphenated programs between humanities and social sciences and between humanities and professional programs that attract a new breed of humanistic professionals aiming for richer lives and wider capabilities.

Reformulating, Reorganizing—Warrants and Possibilities

It is not self-evident that the present curriculum of each department, the present departmental boundaries or even the organizational structure of the Humanities Division, are the most rational and beneficial that could be imagined. We have encountered frequent suggestions concerning different forms of program or unit reorganization, most frequently in connection with modern language programs. Curricular innovation does not necessarily require redrawing unit lines, although some would argue that without such organizational change, units do not look beyond their boundaries. Suggestions for reconsidering programs and for reorganization arise in part out of urgent problems, such as the low enrollments of some departments and the problematic quality of some faculties. They arise also out of a sense that for some departments it is not a self-conscious and reasoned set of priorities that dictates curricular choices, but unexamined convention or mutually destructive adherence to traditional sequences and requirements by nationally ranked departments, all of whom are in trouble.

Suggestions for reconsidering programs also arise out of positive considerations: concern with the change-

ing pattern of job requests ("German, with capacity to teach first-year Russian," "French, with a capacity to teach Modern European Literatures"); concern with the changing nature of the intellectual interest of persons who teach and study the humanities; interest in courses on thematic problems—for example, criticism—or in possible collaboration across humanities-social science lines: Medieval Studies, American Studies, Modern European Studies. They also arise out of a concern, mentioned above, for ways in which the Division can respond to the needs of graduate students who face a variety of options.

The problem of interdisciplinary relations in the Humanities Division differs from that in Social Sciences. In many respects it is easier. Social Science departments are distinguished from each other, if not by the phenomena they treat, by the conceptual and methodological traditions they follow. Some methods, to be sure, overlap: Sociology, Political Science, Behavioral Sciences, Economics all use some statistical methods and most use some mathematics. Some conceptual traditions also overlap: History, Anthropology, Political Science, Sociology all draw on certain common macro-sociological traditions that preceded the fragmentation of the social sciences into philosophy, psychology, anthropology, sociology, and history. But departments are distinguished by sufficiently different methodological and conceptual frameworks to account for, if not justify, separate organization. The matter is otherwise in the Humanities Division. While some departments are indeed distinguished by subject matter, medium and conceptual traditions—Music, Philosophy, Art—some are far less so. The language departments, which account for three-quarters of the departments in the Division, all deal with language and literature. While the problem sets and traditions of reasoning and scholarly treatment of old Sumerian and Spanish have also evolved in unique fashion, the linguistic and literary methodologies and conceptual traditions appropriate to language and literature departments have more common features than do those appropriate to anthropology and economics. The possibilities for a Divisional form in intellectual activity, then, are if anything better than in the social sciences, where the Commission has also made an argument in favor of an increased Divisional emphasis.

Structurally, the Humanities Division has some advantages over the Social Sciences Division for coordinating Divisional affairs and creating intradivisional communications. Its Divisional affairs executive committee has a certain solidarity and unity, while the Social Sciences Division's equivalent organ has more the aspect of a baronial gathering, to which each principality sends its bargaining representatives. While it is

not clear to us what is the appropriate unit or agency whence deliberation on curriculum and programs should issue, the Divisional executive committee seems a possible starting point.

We have tried to imagine what kind of curricular and organizational innovations would make sense in the context of the multiple goals of graduate education. Thematic, interdisciplinary, problem-oriented programs which recruit from a number of departments, perhaps also beyond the Division, appear to be the most appropriate response. In that case, why shouldn't students simply select the Committee on Social Thought? The Committee on Ideas and Methods? Or the History of Culture? Because many students wish to choose a dominant identity of the sort national graduate markets recognize, but would like to take advantage of the sort of adventurous synthesis that is the mark of Chicago education. One would hope that the approaches of such committees would infiltrate more traditional departments. Some have argued that the innovative all-purpose store, *Design Research*, most succeeded as a unique marketing venture at the moment when it went bankrupt, driven out by competition from the traditional department stores that it had successfully infiltrated with its sophisticated conception of conventional products. The various imaginative committees now dwelling within the Humanities Division may not appreciate the analogy and the prospect it evokes for them. But why should students in the department of English or Romance Languages not share in the more wide-ranging intellectual combinations on which the University prides itself?

If increased emphasis on thematic and problem-oriented programs appears to be an appropriate response, they do not necessarily depend on departmental reorganization. The route, for example, of a united modern languages department, chosen at some institutions, has many drawbacks: it may not have a distinguishable intellectual mission; at Chicago, it would be so large as to spawn federal sub-units that would probably defeat the purpose. The Divisional conversation in which members of the Comparative Literature department and the Dean have engaged in recent times illustrates the prospects of as well as the resistance to more thematic approaches. The circumstance that enrollment in committees is holding up better than in some traditional language departments, the idea that departments of languages and civilization seem to survive better than departments of languages and literature, are also relevant to these concerns.

Having spoken enthusiastically to the issue of reach and breadth, we would like to emphasize its reverse, the virtues of narrowness, and assert that appropriate graduate education can accommodate both. Within broader programs, those graduate specialists who

achieve excellence by focussing rather than widening the lens must find the opportunities to continue to do so. Most faculty "double track" their teaching as it is, between specialized seminars that reflect their research interests and broader courses that allow them to connect with others in their field and in related fields. The right kinds of curricular innovation need not be inimical to concentration.

The precise response to the question of appropriate programs and organization is a problem only the Division and departments can answer. But it seems evident to us that such questions need to be more urgently addressed than they were some years ago by the Northcott Committee (Committee on the Present Organization of the Division of the Humanities, 1973), which wrote at a less exigent moment in history. Some would argue that, given the extant departmental structure, no progress can be made. And indeed, departments have often taken a parochial view. As one of our colleagues put it: "An administrative unit invariably becomes a political unit—one that pressures for its own interests, as it sees them, perhaps without sufficient regard for the interests and purposes of the larger university."

On the other hand, it may be possible to innovate without departmental reorganization. One can imagine, for example, a well-considered program that would include a component of courses stressing themes and problems, and drawing together students and faculty from several departments for common work, and another component of courses focussed on the several departments. Such a program would award Ph.D.s in the departments, but work out requirements co-operatively. Such a program would address problems of intellectual significance, recognizing that national literatures, especially those in Europe and America, are not self-contained organisms, but responsible to general issues in the creation of literatures. But to launch it, mechanisms and intellectual sub-communities (super-communities?) would need to be created that can suggest new perspectives on what is dispensable and what indispensable, and can imagine new combinations of meaningful intellectual issues.

Research Institute and the Humanities

The Commission's proposal for a Research Institute in the Humanities and Social Sciences (see Chapter 6) is intended to place greater emphasis on research as the essential dimension of graduate training, and less emphasis on course work. It develops our earlier recommendation that required work for the Ph.D. be reduced to six quarters, as it is in most of our sister institutions; that students in their third year be admitted—or not admitted—to the Research Institute; and that their work be continued in the context of a series of seminar/workshops. Such workshops would be offered

by small groups of faculty sharing common interests and preoccupations, from one or a number of related disciplines, and would provide a context in which students and faculty would discuss their ongoing work. Students would attach themselves to one or more of such workshops. The idea is to create a context for that portion of graduate education which we profess to value most highly, but which we support and structure most modestly, and to create opportunities for research apprenticeships of the sort that have always been common in the natural sciences.

The Commission's expectation is that workshops would frequently, though not necessarily, have a Divisional or cross-Divisional ambience. The Institute, in this fashion, could provide the kind of flexibility which might otherwise be achieved only by departmental or curricular reorganization. One can imagine a Ph.D. level student in Romance Languages who intends to work on the *Chanson de Roland*, or a student in Classics who is working on Homer, participating in a common workshop on the epic and ballad, including faculty from South Asia, Classics, and Romance Languages. One could imagine a workshop in English history, literature, and civilization attracting students from the English component of the History department, from historical Sociology, from the English department, and from Comparative Literature.

Such an institutional innovation has several implications. (1) It would oblige departments to scrutinize most sharply their present requirements. Some students would wish to continue formal course work (for example, fourth-year Sanskrit) but this would become a matter of developing scholarly competence, not fulfilling course requirements. (2) It would oblige departments to reconsider the use of faculty time, as the mounting of Institute workshops took the place of some other faculty obligations. The workshops, it might be observed, would make a different *kind* of demand on faculty time than do courses. Instead of preparing lectures or discussions based on texts and secondary sources, faculty would be expected to discuss such aspects of their own research—or perhaps that of outside visitors—as is relevant to the theme of the workshop, and read and respond to ongoing student reports, papers, and chapters. (3) It would encourage faculty to enter into intellectual coalitions and alliances with colleagues in and out of departments, in ways that would create a more associative intellectual environment at the faculty level.

Prospects for a Language Institute

A leading source of professional discontent and program inflexibility in the language departments of the Division is the attention faculty believe they have to expend on teaching bread-and-butter courses. Using ad-

vanced research faculty to teach first- and second-year language courses is not always an appropriate use of human resources. Furthermore, whenever there is discussion of more adventuresome involvement of language and literature faculty with interdepartmental or interdisciplinary courses, the plea is generally heard that persons are needed to cover a complex range of departmental requirements and elementary courses. Elsewhere, we raise questions about what range of requirements is essential. Here we note that for covering elementary courses, the idea of a Language Institute, which has often been proposed and as frequently discarded, deserves to be considered yet again.

A Language Institute is essentially a device for decoupling the personnel requirements of elementary teaching from the faculty requirements of advanced programs; for creating non-competing and non-comparable teaching hierarchies, one appropriate to first- and second-year courses, and one appropriate to literary analysis, criticism, advanced linguistic skills, research, and writing. By not decoupling these two forms of teaching, everyone is disadvantaged: (1) advanced faculty who find elementary teaching tedious; (2) advanced graduate students and non-academic language specialists who would like to teach but do not find a predictable structure of opportunity; (3) students who find advanced faculty unwilling to perform drills and other repetitive exercises, and who encounter graduate students and others who are not trained for the functions they in fact perform though they have not been acknowledged as performing them.

Some of the components of a Language Institute are already in place in the Humanities Division. A distinguishable teaching sector staffed by non-tenure track teachers has come into being. The survey prepared by the Committee Concerning the Use of Graduate Students in the College (Strier Committee) noted that eight graduate students taught language courses in Romance Languages and Slavic in 1979-80. The Slavic Department has created internship and training arrangements in which graduate students acquire teaching experience and learn how to conduct drill sessions under supervision before being given independent charge of a class. Spanish is working on similar training arrangements. Such a sector, to function properly, would have to come under the training and recruitment guidelines that are being developed in the College, to protect teachers from the dangers of personalistic appointment patterns and students from amateurism. It would have the flexibility to accommodate experienced native speakers who do not mean to perform advanced research and teaching.

The forms such an institute could take are several, and turn on how language teaching should be or can be integrated with the study of the great literatures. In one

mode, highly developed at the University of Michigan, the focus is on intensity of skills, drilling, etc. Other models pair specific language skills with a comparative language and literature emphasis—the University of California at La Jolla is an example. Both envision some separation of skill functions from general literary concerns, a separation that is a source of controversy, and we do not wish here to take a position in this matter. *We urge that the Division once more tackle the proposal to create a Language Institute duly constituted for that purpose.* We see the flexibility that can be provided by a Language Institute as part of a package of measures that could make less necessary other types of Divisional restructuring, that would encourage curriculum re-evaluation and re-creation in the Division, and would free faculty for more wide-ranging thematic and interdepartmental combinations.

The M.A. in a "Multiple-Exit" Divisional Education

One element in a "multiple-exit" view of Divisional programs is the M.A. level. Such programs have a variety of meanings. But there is wide agreement that they could be more vigorously employed to utilize faculty energies not now being used at the Ph.D. level. Earlier efforts to consider the matter of enrollments in the University (for example, the Bradburn Committee) also stressed the potential significance of such programs.

We too would like to lay stress on the possibilities of M.A. programs, but we would like to begin with the proposition that they need to be conceptualized more seriously than heretofore, intellectually and in terms of their relations to other programs. There is some tendency, when thinking about M.A. programs, to take a trash basket point of view, to treat them as residual outcomes, to presume that they are going to be intellectually underprivileged areas, populated by scholarly underachievers, and to allocate to them the residual energy of faculties after they have expended their best selves on Ph.D. efforts. They are treated in financially niggardly fashion.

The Master of Fine Arts and the M.A. in Public Policy are examples of M.A. programs shaped by distinctive educational and intellectual missions. These examples differ from the M.A. as a consolation prize for disconsolate and unsuccessful Ph.D. candidates, or as M.A. programs conceived of as a reception center for plenty of warm bodies that will raise a Division's body count. It is useful to reflect on the fact that one of Harvard's nationally most conspicuous programs, that offered by the Kennedy School of Government, is a well-funded, well-conceived M.A. program.

Some departments, notably English, have traditionally made a sharp distinction between admission to

the M.A. program and later admission to the Ph.D. program. Like Economics, they admit all who they think can profit from master's level course work. Then, on the basis of one year's evidence, including a final departmental examination, they admit a select group to the Ph.D. program. Though there have always been some reservations about such programs, on the grounds that they diffuse departmental effort and disappoint many students who originally think they have a better chance for candidacy than they do, it has been defended and maintained on the good grounds that many students do in fact want, for various reasons, only the M.A.; that we make better selection after students have been a year with us than we could after they receive their B.A.; that we in fact discover a great deal of fine talent among those who would be rejected if we went simply on the quality of undergraduate college achievement and recommendations; and that we perform, in short, a public service and a service to ourselves with the program.

If we want to strengthen M.A. programs, we must do so in ways which are compatible with the talents and preferences of our faculty and the traditions of the University. M.A. programs that have a significant intellectual content, that have structural means to attract faculty talent and commitment, that fit into some meaningful conceptualization of goals and purposes, that have plenty of resources both ideal and material, could attract both new candidates and faculty enthusiasm.

Appointments

We propose an aggressive policy of high quality new appointments for faltering departments, possibly at several levels, visible enough to make a difference in how such departments are viewed nationally. Such appointments should be coupled with some definition of how the department fits into the larger Divisional context and a wider definition of curricula—which will pose some delicate problems. They could be facilitated by encouragement of early retirement by faculty whose interest in their field is waning. Where low morale or a vested interest in failure makes it impossible for a department to right itself, one can imagine the creation of a temporary committee drawing on Divisional faculty to support the recruitment and appointment process.

Addressing the Image of the Division

Everyone is aware that Humanities has an "image" problem. No departments are clearly ranked among the top two or three nationally, when measured by the more obvious measures of reputation. But everyone who knows much about our program knows that such measures inevitably overlook some of the most important of our qualities. As we said earlier, no national survey can "give us credit" for our interdisciplinary

programs, because our titles do not fall on their charts: there are no "slots" in "Cartter et al" for "General Studies in the Humanities," for our distinctive B.A. and M.A. programs; for our Ph.D. programs in "Ideas and Methods" and "History of Culture." More generally, there are no ways in which reputation studies can reflect very well the contributions to Divisional life of certain fine teachers whose research is employed primarily in supervising dissertations and classroom teaching. We know that our graduate students, who may feel neglected in winter, are in fact more intensively directed than students at some large, sunny universities.

We need to find ways to advertise ourselves. One obvious move would be to ensure that every distinctive program produces a prospectus, a brochure describing what it does and why what it does offers opportunities different from conventional departments. (Ideas and Methods is now working toward such a brochure. Many other programs have one.) More important, the Divisional catalogue may need to examine its present approach, which aggregates available programs, and consider highlighting the unique qualities that the large number of special committees lend to this Division.

No delicacy about media management should deter us from using professional advice on how to assemble the picture such brochures present in Divisional literature that highlights a more general approach. Chicago has a distinctive posture. It takes some very attentive reading to discern it in some of our announcements. Of course, there may be an inherent and finally unbridgeable gap between true intellectual innovation and advertisability: the more original we are, the harder it is to explain to prospective students what we are up to, because there are no ready-made labels for us. But we could do better than we have done in this respect.

Returning to Hobbes

In the 1980s, the humanities nationally and locally are faced with problems of self-preservation. We have to conceive of programs in the Humanities Division as would successful sailors negotiating the rocks of mere adaptation and the whirlpool of defending unexamined conventions. We hope it will be possible for the Division to use its troubles as the occasion for innovation, rather than mere adaptation or defense.

E. A Special Issue: Computer Science

In 1973, it was decided to dissolve the existing Committee on Information Sciences and to replace it with a program in computer science within the Department of Mathematics. This Commission believes that the present moment is a critical time for the University to reconsider its needs in this area and to reexamine the

desirability and feasibility of establishing a separate committee or department for teaching and research in computer science.

We have not reached full consensus regarding the merits of the case for creating a Department of Computer Science. Many members of the Commission are in favor of such an initiative; but some are opposed, or feel inadequately informed regarding the intellectual and financial implications of the matter. All agree, however, that this is a question of fundamental importance to the University as a whole and that it must be seriously addressed. In what follows, we state some of the arguments for and against the creation of a separate Department of Computer Science. We conclude by recommending the creation of a committee to study this matter further.

As a field of study, computer science has grown considerably in the past decade; its subject matter is more clearly defined and its relationship (actual and potential) to other intellectual disciplines more easily discernible. The national demand for research and instruction in this field—and for highly qualified researchers and teachers to carry them out—is evident. Its existence as a separate and distinct discipline has long been recognized by the National Science Foundation, which has offered extensive support for research in all areas of computer science. Furthermore, this University is now virtually alone among major research universities in not having a separate computer science department. While this fact in itself does not dictate that the University should fall into line with other institutions, it does suggest the advisability of thinking critically about the relevant issues.

The most relevant issue for the University as a whole is the degree to which the theory and practice of computer science are becoming steadily more important for state-of-the-art research in a variety of disciplines within the natural sciences, the social sciences, and even the humanities. In all of these fields, the development of computer science is changing the ways in which research is being conducted; in some, it is changing the world we study in a manner that must eventually command our attention. To the extent that computer science is simply one discipline among many, we might reasonably conclude that it need not be cultivated here. To the extent that it is a theoretical and practical instrument of research in a growing number of disciplines now pursued throughout the University, however, we risk mediocrity in many of our scholarly endeavors if we fail to recognize this development and to plan appropriately. It will be increasingly difficult to maintain the highest level of research in these fields without more advanced training in computer science than is currently provided on this campus, and without presence of a group of faculty engaged in investigating

the conceptual issues and methodological problems involved in the use of computer science in such research. In the long run, achievement of these goals is unlikely without the creation of a separate computer science department.

One common objection to the idea of creating a separate Department of Computer Science is that, while there may be a need for a more fully developed program of introductory training in the use of computers at the undergraduate and graduate level, the organization of such a program does not in itself depend upon the creation of a separate department to administer it. In considering this argument, it will be useful to review recent developments regarding the teaching of computer science at this University.

In a report published in October 1980, the Evaluation Committee on Computing Activities at the University of Chicago emphasized the growing importance of computer science and the inadequacies of the existing curriculum in computing at the undergraduate (and, by implication, at the graduate) level at this University,³ as compared with that of many other universities. The Committee therefore recommended the creation of a more fully developed program in the theory and practice of computer science. In response to the concerns raised in that report, and to increasing student demand, the Department of Mathematics has moved to develop a more comprehensive sequence of courses in computer science, adding to its existing courses in mathematical logic, the theory of computation, and calculus with computers by creating a year-long introductory course in structured programming and a course in the design and analysis of algorithms. This new introductory program has proved successful and is likely to grow in popularity. Immediate steps will need to be taken to secure it in the short run. But to maintain it at an appropriate level in the long run, and to extend it in ways that will offer suitable training for graduate students in a variety of fields, the University needs to attract a critical mass of qualified computer scientists. There is intensive competition for first-rate scholars in this discipline and—for reasons familiar to scholars in any field—they prefer to go to those institutions which offer them colleagues and facilities that provide the most stimulating and supportive environment for the cultivation of their intellectual interests. The University's recent efforts to recruit in this field suggest that we are unlikely in the long run to be able to ensure high quality teaching in computer science, even at a basic level, without the separate departmental arrangement necessary to make this university more attractive to a self-sustaining group of computer scientists.

A second objection to the idea of creating a separate computer science department argues that, since the computer is a tool usable in many different areas of

research, the appointment of good researchers able to use the computer with sophistication in any field may be far more effective in developing its research potential than creating a separate computer science group. This is perhaps the most interesting objection to discuss since it raises the most basic question: the nature of computer science in its relationship to other disciplines. If we think of the computer as merely a tool and computer science as merely the practical skill to use it—rather like typing—then we might reasonably expect faculty and students to acquire this skill as necessary by some means or another. If, on the other hand, we think of computer science as a conceptual instrument—one likely to play a role in the development of a number of modern disciplines analogous to that played by the calculus in the development of classical physics—then we must take an entirely different view of the matter. We must ask whether scholars interested in making the most sophisticated use of computers in their own research are likely to be attracted to a university which values research using computers but not research into computing. (There is already some evidence to suggest that they will not.) We must ask how these researcher-consumers will keep abreast of the advances in computing necessary to make their research the most sophisticated in the field. We must ask where they will find the intellectual resources necessary for the development of innovative methods, languages, and systems to advance their research. We must ask who will teach their students the theories and techniques these researchers do not already know. And we must conclude that without a group of scholars committed to the development of the theory and practice of computer science as a discipline in its own right, the University is unlikely in the long run to be able to support the endeavors of scholars in those other fields where state-of-the-art research comes to depend on the most sophisticated use of the computer.

A third objection maintains that computer science departments depend for their success upon a close relationship with an engineering school of a kind that this University is obviously unable to provide. This may once have been the case. But theoretical computer science no longer depends for its problems or practice on the proximity of an engineering school; nor is the capacity to design and build computers and related hardware necessary to engage in it. Computer science is not simply a branch of electrical engineering; nor is it simply a branch of applied mathematics. On the contrary, it is forming itself as a discipline with roots at the intersection of a variety of fields—for example, mathematics, statistics, philosophy, linguistics, cognitive psychology—in which we have strength and could become stronger with the development of an able faculty group in computer science. It is easy, moreover, to

imagine a core group of computer scientists interacting well, often, and profitably not only with colleagues in these fields but in many others as well.

A fourth objection is that computer science is a field in which it would be easy to be mediocre and difficult to be outstanding. This is certainly true. But is there any field of scholarship cultivated at this University in which it is easy to be outstanding or difficult to be mediocre? No one would propose that the University should undertake a task such as creating a new department unless it were prepared to marshal the resources and determination to aim at the highest level of excellence in the relevant field. But we cannot suggest that the University should be willing to retreat from difficult tasks, especially when they bear upon our intellectual strength as a whole, simply because they are difficult. First-rate institutions must be prepared to face some risks and engage some difficulties if they wish not to slip from the first rank.

This argument is often linked with a counsel of despair, namely that the University has already fallen so far behind in the field of computer science that it would be futile to try to build strength now. But it seems clear that the need of faculty and students will require the development of some kind of computer science program in the next decade. The essential question is whether or not there will be a strong program appropriate to our intellectual needs and interests.

As a relative latecomer to this field, the University would of course encounter particular difficulties, not the least of which is the great scarcity of highly qualified academic computer scientists. As a result of the intense competition from industry, there are severe faculty shortages in computer science. While the number of undergraduate majors in this field at the national level doubled between 1975 and 1981 (and is expected to continue to grow dramatically in the next decade), the number of Ph.D.s granted—and the number of faculty with Ph.D.s—has remained virtually constant. A recent report estimated the current supply of Ph.D.s in computer science at about 20 percent of demand.⁴ This situation may represent an opportunity, as well as a challenge, for a university such as our own. Training new Ph.D.s in this field, especially those who will go into academic positions, has not been done well in this country in the past decade. It is likely to become a matter of critical national importance in the next. Given its traditions and experience in preparing Ph.D. graduates for academic careers, this is a task that the University of Chicago could expect to fulfill very successfully if it committed itself to do so.

Appropriately conceived and developed, moreover, the challenge of building an academic program in computer science at this University might well prove attractive to a number of distinguished computer scientists.

From this point of view, a relative latecomer may also enjoy some compensating advantages. The University is in a position to learn from the mistakes of other institutions in this field and to avoid organizational rigidities and structural difficulties that may already be proving counterproductive elsewhere. It is in a position to offer outstanding computer scientists who may recognize such mistakes the opportunity to move in new directions.

The University could also expect to attract and retain top-quality graduate students in this field. The Department of Mathematics already receives each year a number of inquiries from prospective students concerning a graduate program in computer science. At the same time, current graduate students who become interested in computer science are now obliged to change to related fields or leave the University in search of a more intensive program. Excellent students have been lost in this way.

A final objection is that, given the competition for faculty and prospective graduate students in computer science, and the costs of providing them with appropriate facilities to carry out their research, any initiative of this kind would be prohibitively expensive to implement in a period of budgetary constraint. It would be foolish to deny that the cost of developing a strong program in computer science would be substantial, even though any realistic plan would probably need to be implemented over a number of years. At the same time, we must be prepared to weigh the costs of not proceeding in this direction. It would be costly to the University to find that its faculty could no longer contribute effectively to the creation and solution of significant problems in a variety of fields simply because those problems required knowledge of information systems not readily available to them here. It would be costly to the University to find itself a follower, rather than a leader, in those disciplines in which the nature of research is likely to be transformed by sophisticated applications of computer science. It would be costly to the University to lose promising graduate students who went to other institutions in search of better training in the theory and practice of computing, or to allow its faculty and students to waste valuable time and resources reinventing methods and algorithms already several years old. If these are indeed the costs we are likely to face, it would surely be preferable for the University to commit itself decisively to a plan for the creation of a Department of Computer Science and to search aggressively for those external sources of funding available specifically to support the development of this discipline.

It is beyond the competence of this Commission to offer any detailed proposal for the creation of a Department of Computer Science, to consider questions

regarding the most appropriate size and composition of such a body, the areas of intellectual interest that it might most profitably emphasize, the most suitable administrative arrangements to support it, or its possible relationship to other departments or groups of faculty in the University. In this section of our report, we have tried simply to present the general arguments regarding the creation of a separate computer science department and to emphasize the importance of this issue for the university as a whole. *We urge the President to create a committee to study whether the University should establish a Department of Computer Science.*

Notes

1. *Report of the Commission on the Humanities. The Humanities in American Life* (Berkeley, 1980), p. 66.
2. *Ibid.*, p. 70.
3. "Report of the Evaluation Committee on Computing Activities at the University of Chicago," *The University of Chicago Record*, 14, no. 4 (10 October 1980), p. 108.
4. "The Snowbird Report: A Discipline in Crisis," *Communications of the Association for Computing Machinery*, 24, no. 6 (June 1981), pp. 370-74.

Chapter 6: A Research Institute Structure in the Humanities and Social Sciences

Our work on this report has repeatedly drawn our attention to a striking contrast in the pattern of graduate education in the different Divisions. Throughout their time here, graduate students in the Physical and Biological Sciences Divisions work continuously under the supervision of—and often in collaboration with—the Divisional faculty. By contrast, students in the Humanities and Social Sciences Divisions are typically in continuous contact with faculty only during their years of preliminary course work or, at best, up to the point of formal acceptance to candidacy. From that point on, aside from irregular discussions with their dissertation readers, they are all too literally "on their own." Instead of being drawn into the current intellectual debate in their fields, and stimulated by their teachers and fellow students, they often become prisoners of their dissertations, with no appropriate place to work, and no real opportunity or impulse to expose their ideas or written material to critical discussion by their peers. So, for many graduate students in the humanities and social sciences, the second part of their career, which should be the most creative and exciting part, can easily become a lonely and unsupported chore.

This difference in teaching methods, we are convinced, plays an important part in explaining the great disparities we have found, and reported here, between the average lengths of time that it takes for graduate students to complete their doctoral work in the different

Divisions. To repeat: in the two natural sciences Divisions, the median time from matriculation to degree for students receiving the Ph.D. in 1980-81 was five and a half years; in the Social Sciences Division it was seven and three-quarter years, and in the Humanities it was almost eight and one-quarter years. Significantly, the Department of Economics, in which a system of regular, continuing workshops provides the central institutional framework for advanced graduate work, also has the shortest median time to degree of any large department in the Divisions of Humanities and Social Sciences.

In these two Divisions, graduate training typically divides itself into an initial period of course work, during which the students are in continuous and lively contact with each other and the faculty, followed by years of solitary dissertation research, in which they find themselves isolated from one another, and often receive too little guidance. This situation is exacerbated by extensive course requirements which pre-empt the attention of both faculty and students, as well as by a tuition structure which discourages students from maintaining formal registration once they are no longer taking courses. As a result, students who have completed their course work tend to enter a kind of limbo, which fails to provide any continuing institutional stimulation at the crucial stage in their graduate careers, and deprives them of the emotional support of peers engaged in a common endeavor. Given this situation, is it any surprise if morale too often sags, dissertation research lags, and individual problems come to seem insuperable, for lack of opportunities to compare perspectives and ideas?

These, in brief, are the major deficiencies we have found in the organization of graduate education in the Humanities and Social Sciences Divisions; and our case for the creation of a Research Institute or Institutes in those fields of scholarship rests on the belief that this is the most promising way of remedying these deficiencies.

It can of course be argued that the existing departments and committees in the two Divisions are quite free to develop, for their own faculty and students, the kinds of advanced workshops that have proved so successful in the Department of Economics, if only they so decide; and that, by doing so, they would save the University the expense and administrative duplication involved in a Research Institute structure. Gary Becker, who wishes to dissociate himself from the present proposal, argues in just these terms. While wholeheartedly supporting the case for the development of seminars and workshops to provide an appropriate context for advanced graduate training, he does not believe that the Research Institute structure considered here is necessary to implement them; and, more importantly,

he does not think that there are other grounds for proposing structural change in the Division of Social Sciences. But most members of the Commission believe that the deficiencies in advanced graduate training in the Humanities and Social Sciences Divisions must be addressed in a broader context than the current departmental structure provides. They also consider that the creation of a Research Institute structure could be both an appropriate and effective response to the challenges that now face the two Divisions, and a renewed assertion of the University's traditional claims to intellectual leadership in graduate education.

At the very least, we believe that the proposal to set up such an Institute structure offers the focus for a constructive discussion of the problems that now face the Humanities and Social Sciences Divisions; and we suggest that alternative solutions that may be proposed in the course of such discussion be weighed against it. In this chapter, therefore, we shall develop the arguments in favor of such a change, so as to clarify the nature and goals of the arrangements we envisage, and answer in a preliminary way some questions and objections regarding their implications.

A. The Case for a Research Institute Structure As a Context for Advanced Graduate Work

At the University of Chicago, the Ph.D. is essentially a research degree. Our claims for it rest on the conviction that the ability to identify a significant problem, the discipline to inquire into the relevant issues critically and systematically, and the creative power to bring the inquiry to an effective conclusion, are developed and demonstrated in the course of the research and writing required for the dissertation. Yet paradoxically, while we insist upon the character of the Ph.D. as a research degree, we fail to provide a clearly defined institutional context for many students in the Humanities and Social Sciences Divisions who are at the research stage of their graduate school careers. In the natural sciences, students typically move into a research environment early in their graduate education (usually by the end of the first year). They develop their intellectual interests and sharpen their research skills by working in a laboratory or participating in a research group which provides a systematic and sustained context for their own work until the completion of the dissertation (and even for their further postdoctoral work). Their training is essentially a research apprenticeship. In the humanities and social sciences, by contrast, such contexts for graduate research rarely exist, though the Department of Economics workshops and the research activities of some research centers offer notable exceptions to this statement.

Of course, it can be argued that a period of individual work in relative isolation is necessary for the develop-

ment of the intellectual discipline required for creative research in the humanities and social sciences, which is by its nature solitary and individualistic. But the image of the solitary scholar is surely an oversimplified one, even in those fields where it seems most natural. Individual scholars define their own research interests in relationship to those of others; the questions they ask take on significance within a structure of arguments and assertions, problems and assumptions, that constitutes the present state of the disciplines they seek to address; they raise their individual voice to shape a dialog that is publicly defined and continuously refined through the common activity of scholars. Students are more likely to understand this process, and to enter into it effectively, if they see it in action and participate in it directly with other students and faculty members in regular, continuing seminars or workshops, in which individual research ideas are elaborated and tested against critical consideration, and issues of common concern are defined and explored. We need to provide more effective institutional expression, in the Humanities and Social Sciences Divisions, of a fundamental principle of this University expressed by President Levi: "we do not regard the learning process as having ended for anyone, and this is one of the reasons, regarding faculty and students as involved in the same search for understanding, where the joint reformulation of questions is so important, [that] we have tended to emphasize...a continuing dialog."¹

Apart from these strictly academic considerations, there are additional reasons which make it appropriate and desirable in current circumstances to emphasize and institutionalize this understanding of the collegial dimensions of scholarly research. Our claim is that the skills and abilities developed in the course of dissertation research and writing are by no means limited in their applicability to our scholarly enterprise. They are invaluable in any complex human endeavor which relies upon the capacity to define the essential question in a set of issues, consider and respond to alternative arguments, engage the views and opinions of others, and reach cogent well-substantiated conclusions. They are not only intellectual skills but public skills. If they are understood and fostered as such within the University, and effectively practiced as such by our students, they are more likely to be recognized and rewarded as such in the non-academic contexts upon which they may be brought to bear.

These considerations suggest the desirability of creating standing workshops or seminars that would offer a more clearly structured framework for graduate work at the research stage. Seminars and workshops of this kind would normally bring together several faculty members committed to exploring problems and approaches of common interest and concern, as well as

students whose dissertation research interests fall within the general purview of the seminar. Students would participate with faculty in the common intellectual enterprise of the seminar or workshop, try out their research ideas, and present their findings in this context. Such activity should enhance the development of research skills, improve the quality of research, shorten the time to degree, decrease the risk of attrition, and exemplify the argument that rigorous research training develops the ability to see significant problems. The 1954 *Report on the Behavioral Sciences at The University of Chicago*, which considered graduate education in the social sciences in some detail, had at least some of these goals in view when it recommended:

That as one means of developing a relationship of senior-junior collegiality between faculty and a larger number of students, and of improving research training, departments and committees who grant degrees be encouraged to develop the present tendency to give responsible authority for the advanced stages of Ph.D. training to committees and other small groupings of common interest in problems and methods. (These now appear as thesis committees, research centers and research teams, and projects.) The department might certify, as early as it responsibly can, that the student is prepared at the Ph.D. level in the subject-matter of the discipline and formally entrust to the small group the remainder of the student's training, including supervision of and examination over his doctoral research.²

The principal function of the Research Institute structure we propose would be to create and sustain seminars and workshops for advanced research in the humanities and social sciences, thereby establishing a clearer institutional definition of—and a more supportive and stimulating context for—the research stage of graduate work in the two Divisions. We anticipate that graduate students would be admitted to the Research Institute upon completion of the preliminary course work required for the Ph.D. (which, as we have earlier recommended, should be reduced to the equivalent of no more than six quarters full-time study), and subject to clear demonstration of their research promise. The Research Institute would then provide an institutional locus for their research and writing until they had completed the dissertation. As members of the Research Institute, students would be expected to continue acquiring the specialized knowledge and skills necessary for the achievement of their scholarly goals. They would also be expected to participate in one or more seminars, workshops, or research groups, normally conducted by a small group of faculty members who would commit themselves to systematic investigation of common problems as a means both of advancing their own scholarly interests and of providing an appropriate intellectual context for graduate student apprenticeship in research. The introduction of a Research Institute structure into the Humanities and Social Sciences Divi-

sion would thus create an institutional and intellectual framework that would place less exclusive emphasis on conventional course work and greater emphasis on an apprenticeship in research as the essential dimension of advanced graduate training.

As a Context for Faculty Research

In the preceding discussion, the case for a Research Institute structure in the Humanities and Social Sciences Divisions has been presented in terms of its potential for the strengthening of graduate education at the research stage of the graduate student's career. However, the arguments for such a structure are not restricted to these considerations. We believe that an arrangement of this kind would strengthen the intellectual life of the two Divisions more generally, stimulating and directing renewed energies in a manner consistent with our strongest traditions and aspirations, and responding creatively to the intellectual and practical challenges these Divisions now face.

The University is renowned for its commitment to basic research and its institutional flexibility. Disciplines have not been simply cultivated here, but created; not simply accepted as given, but on occasion dismantled and transformed. The liveliness and creativity of the University have depended upon the maintenance of a longstanding tension between the urge to advance disciplinary claims as far and as rigorously as possible, and the contrary urge to subject these claims to critical scrutiny and supra-disciplinary considerations. We have recognized that administratively separated disciplines in the humanities and social sciences are not intellectually separable, either in their objects or their methods. They share (and compete for) a common terrain; they draw on a common inventory of postulates and approaches that does not correspond to disciplinary divisions; they proceed by way of research strategies that constantly threaten to undermine departmental boundaries. For this reason, there has been a carefully fostered tradition of institutional flexibility at this University, expressed in patterns of joint appointment and the readiness to create interdisciplinary committees and centers responsive to the changing research interests and needs of the faculty. The strength and liveliness of the University, its reputation as a center of intellectual creativity, have depended upon a healthy disrespect for conventional boundaries.

Such intellectual and institutional flexibility has perhaps never been more important than it is now. There seems to be a growing sense among humanists and social scientists that the customary disciplinary divisions are collapsing. New forms of intellectual discourse are appearing that are erasing the conventional lines of demarcation between the humanities and

social sciences, on the one hand, while realigning their component disciplines on the other. Clifford Geertz has described these developments as "a phenomenon general enough and distinctive enough to suggest that what we are seeing is not just another drawing of the cultural map—the moving of a few disputed borders, the marking of some more picturesque mountain lakes—but an alteration of the principles of mapping."³ We may well be experiencing a sea change in the human sciences, a transformation of intellectual boundaries and a reorientation of intellectual interests comparable to that which created the principal disciplines as we know them scarcely a century ago.

Such a situation offers a challenge which the University of Chicago, by temper and tradition, should be particularly well suited to meet. But are we in the best possible condition to do so? Many members of the Division of the Social Sciences appear to think that we are not. A recurrent theme in our committee's conversations with faculty members in the Social Sciences Division involved the sense that the interdisciplinary impulse within the Division was fainter than it had once been. It would seem from these discussions that one of the longterm effects of the expansionary era of the 1960s has been a strengthening of conventionally defined departmental interests and a weakening of the common intellectual life of the Division as a whole. Many faculty members look back to a time when the Social Sciences Division was smaller and departmental faculties were less scattered; when there were cross-disciplinary seminars organized by the Dean to address topics of fundamental interest for the social sciences as a whole; when collective explorations of common problems from differing disciplinary perspectives were more emphatically supported; when there was a greater sense of openness and challenge.

It must be emphasized that we found no unanimity in the Social Sciences Division regarding such developments. Some faculty members described a decline of interdisciplinary concerns with a sense of considerable loss; others denied that decline, or welcomed the strengthening of disciplinary claims it seemed to imply. Some insisted that there was still extensive cross-disciplinary activity at Chicago in the social sciences; others complained that the location of this activity seemed to be shifting from the institutional center of the Division of Social Sciences to its periphery, most specifically to a space defined by the intersection of the Division and the National Opinion Research Center (NORC). Some complained that increased teaching obligations (particularly at the undergraduate level) were preventing Divisional faculty from pursuing their most important responsibility—to reconsider the nature of their discipline and its relationship to other fields; others felt, on the con-

trary, that the reluctance of Divisional faculty to commit themselves to the development of new core courses in the social sciences was as much a result of a failure of interdisciplinary nerve as it was a function of the pressure of other activities.

We believe that the creation of a Research Institute structure would offer an opportunity and challenge to faculty in the social sciences to combine advanced graduate teaching with the exploration of fundamental research concerns—whether they be thought of as disciplinary or interdisciplinary—in a manner that would enhance the liveliness of both. It would offer renewed emphasis on the character of the University as a center of basic research, while offering faculty members of the institutional flexibility to advance their intellectual interests in whatever directions they may lead.

This would be as true of the Humanities Division as of the Social Sciences. But there is a further reason for suggesting the desirability of a Research Institute structure in the Humanities Division at this particular juncture. Faculty morale in the Humanities Division is low, especially in those departments that have been most directly affected by declining enrollments. This is understandable, given the larger crisis in the humanities, and we can sympathize with colleagues who find themselves in such a situation. At the same time, it seems crucial to the health of the Humanities Division, and of the University as a whole, to avoid a siege mentality. There is a great danger that declining enrollments will lead to insecurity and defensiveness among departmental faculty, to fears that any institutional initiative must mask plans to abolish or consolidate departments, to an emotional commitment to protect disciplinary interests and departmental claims until conditions improve and the enrollment tide turns. It would be disastrous for faculty in the Humanities Division to “hole up for the winter”; and it would be tragic if the institutional strains produced by an enrollment crisis prevented our faculty from engaging as effectively and enthusiastically as possible in the transformation of humanistic disciplines that now seems to be underway. One of the principal arguments for a Research Institute structure in the Humanities Division is that it would encourage and support faculty members in their most pressing assignment: to transform the nature of their disciplines.*

*Nor is the issue of support irrelevant here. Research funds in the humanities and social sciences are likely to become increasingly difficult to obtain in the 1980s. Competition for reduced federal funds will become more intense; and more generous support—if it occurs—may require increased flexibility in dealing with a larger number of agencies. In the social sciences, in addition, there may well be a continuation of the shift of federal support for basic research away from the universities and towards non-academic competitors, and the proliferation of agencies supporting social research through specific contracts rather than more general grants. Success in this environment will require more specialized, more flexible, more intensive

As a Center of Intellectual Leadership

Finally, an effective and vigorous Research Institute would not wish to limit itself to advancing faculty research and fostering graduate training. It would serve as the appropriate home for the post-doctoral appointments desirable to support the most promising young scholars in the social sciences and humanities until they are able to find appropriate academic employment. It would serve as an intellectual center for the increasing number of Ph.D.s who will be seeking to maintain their scholarly research interests while pursuing occupations outside academic life. (The example of the Institute for Historical Research in New York offers a fascinating challenge to universities in this respect. Created to meet the needs of historians without academic employment who could find no intellectual home within the conventional university structure, it has developed into a very successful intellectual center. But this is a proper function for universities: they cannot guarantee academic employment, but they can undertake to remain responsive to the intellectual interests they stimulate.)

A Research Institute would also serve as a vehicle for the exercise of the University's intellectual leadership, regionally, nationally, and internationally: by organizing conferences on topics of fundamental importance for research in a variety of fields (the seminars organized by the Center for Continuing Education for faculty of midwest colleges offer a fruitful model here); by developing summer or other seminars; by creating opportunities for university researchers and non-academic leaders to share perspectives on issues of concern to government, industry, and the general public. These are only examples. The essential point is that a Research Institute structure should be developed in a way that would extend the University's intellectual leadership in the humanities and social sciences and make its resources available more effectively to the larger academic and non-academic world.

B. Organization and Implementation

How might such a Research Institute structure be organized in the Humanities and Social Sciences Divisions? How might it be implemented? What should be its relationship to, and implications for, existing institutional structures and patterns of responsibility? It would be premature to offer too detailed a blueprint for an

administrative support for more energetic faculty efforts to secure research funds. A Research Institute could generate faculty enthusiasm for new research projects of potential interest to foundations and funding agencies. At the same time, it could be provided with a staff adequate to identify appropriate sources of support for particular research projects and to help faculty members in search of grants and contracts (applications for which have been falling in the Social Sciences Division in recent years). Thus one of the possible attractions of the Research Institute structure is that it might be developed in a way that would enhance the University's ability to attract funds and facilities for research in the humanities and social sciences.

idea that must be shaped by extensive faculty discussion. However, we offer the following proposed arrangements as a basis for further deliberation, and as an indication of the kind of structure we envisage.

1. Students would be admitted to the Research Institute after the completion of six-quarters' full-time study (or their part-time equivalent), during which they would be expected to complete the required course work for the Ph.D. (reduced to eighteen courses from the current twenty-seven courses) and demonstrate capacity for advanced research. Their admission to the Research Institute, which would be subject to recommendation for such admission by the faculty of their department or program, would coincide with their formal admission to doctoral research.

2. Within the context of the Research Institute, students would pursue the research and writing leading to the completion of the Ph.D. dissertation under appropriate faculty supervision, as determined by their department or program. They would be expected to continue acquiring the specialized knowledge and skills necessary for the achievement of their scholarly goals. They would also be expected to participate in the regular work of one or more organized seminars, workshops, or research projects appropriate to their intellectual interests and research goals.

3. Students would be expected to maintain formal membership in the Research Institute until they had completed their dissertation. Tuition arrangements would be those proposed earlier in this report (see Chapter 4, Section B). Membership in the Research Institute would carry with it the normal privileges of access to University facilities enjoyed by registered graduate students. To the extent possible, it would also carry access to the special facilities for advanced graduate student research discussed in chapter 4, section B.

4. All faculty members of the Humanities and Social Sciences Divisions would also be members of the Research Institute, which would in this sense represent an institutional expression of the research and advanced graduate teaching activities of the two Divisions, rather than an institutional entity separate from them.

5. Groups of faculty members would be invited to form standing seminars or workshops to investigate fundamental problems of mutual intellectual interest, and to provide an appropriate framework for the continued research training of advanced graduate students. While they would be encouraged to do so without limitation by departmental or Divisional boundaries, there would be no expectation that seminars and workshops would necessarily draw their membership from more than one department. Some of them would naturally tend to be disciplinary; others would naturally tend to be cross-disciplinary. The subjects of the seminars would be publicly announced by the Research Institute on an an-

nual basis, though many of them would be expected to continue for more than one year.

6. Faculty members would participate most responsibly in the seminars and workshops, and use them most effectively as a teaching instrument, if they received adequate credit for this activity as part of their obligations to the University. They would be unable to devote themselves to this enterprise if it were simply to become an additional task over and above their current responsibilities. Creation of a Research Institute structure would therefore require a reconsideration of existing course offerings, requirements, and teaching patterns. Departmental course requirements might need to be reduced and reshaped, if only to prepare students effectively, within the initial two years of graduate study, for admission to the Research Institute. Assuming the attractiveness of the Research Institute idea to a large enough body of the faculty members in the Humanities and Social Sciences Divisions, this reconsideration might encourage broader interest in identifying or creating courses that could answer the needs and purposes of several programs or departments in a general way, while eliminating any unnecessary proliferation of parallel courses in different departments. (This is a matter of particular importance in the Humanities Division, where the total number of courses offered and the course load per faculty member appears to be unnecessarily high.)

7. Since we envisage Research Institute membership as belonging to all regular, full-time faculty members in the Humanities and Social Sciences Divisions, we must ask what relationship the Research Institute structure would most appropriately have to these Divisions? There are several alternative possibilities in this respect:

(i). A separate Research Institute might be created for each Division. In this case, each Research Institute would then represent a clearer institutional expression of aspects of the life of the relevant Division. The Dean of the Division could then appropriately serve as Director of the Research Institute, perhaps with an Executive Committee to advise him on general matters of policy. This would be the most straightforward way of implementing the Research Institute idea, but it has one important drawback. It would replicate in the structure of the two Institutes a dichotomy between the humanities and social sciences that seems now to be growing increasingly problematic, and that itself requires re-examination by scholars in a variety of disciplines. Many of our most interesting intellectual endeavors already disregard that dichotomy, or suggest that its epistemological foundations may be weakening. It would be desirable to overcome it in any new arrangements.

(ii). The immediate alternative to separate Research Institutes in the Humanities and Social Sciences would be

to create a single Research Institute in the Human Sciences embracing the entire range of intellectual interests in the Humanities and Social Sciences Divisions. In that case, it would presumably be necessary to appoint a Director of the Research Institute who would work closely with the two Divisional Deans. Such an arrangement would maximize the flexibility possible in the Research Institute, but it is open to the objection that it might create an organization that would be too large to be really effective.

(iii). A third, and perhaps potentially the best, option would be to have a single Research Institute in the Human Sciences divided into several sub-units—or possibly several separate Research Institutes—organized along lines of intellectual interest that would cut across the existing institutional demarcations between the two Divisions of Humanities and Social Sciences. We regard it as premature to offer any definite proposal for the intellectual remappings that this kind of organization would require, but we look forward to the challenge of debating its principles with our colleagues.

C. Some Objections Considered

In discussing the idea of creating a Research Institute structure in the Humanities and Social Sciences Divisions, the Commission has anticipated a number of possible objections to its implementation. We shall consider these objections here as a means of clarifying the grounds for further discussion of the proposal among the faculty at large. Broadly speaking, they relate to the implications of the proposed Research Institute structure for the autonomy of individual faculty members, for the corporate responsibilities of departments, and for the administrative clarity of the present Divisional arrangements; and to the degree to which its essential goals could be achieved by less dramatic changes.

Faculty Autonomy

One possible objection is that the proposed Research Institute would institutionalize a certain style of intellectual work which may not accord with the tastes and interests of many faculty members in the Humanities and Social Sciences Divisions: either because they may prefer to work in their own seminars, or individually with students, rather than in a common seminar or workshop; or because their research interests do not lend themselves to collective exploration of common themes and problems in concert with other faculty members and their students.

Our response to this objection is that while we expect the joint workshops or seminars to be the defining feature of the Research Institute, we do not expect them to comprise the exclusive activity of its members. Individually taught research seminars would, of

course, continue to be given: they would remain an essential dimension of the preparation for research offered to graduate students in their first two years; they would continue to be open to graduate students in continued pursuit of the knowledge and skills necessary for the achievement of their scholarly goals in the following years. Similarly, the close personal interaction between individual faculty members and individual students engaged in dissertation research under their direction would, of course, continue to be an essential feature of our graduate education, to be complemented rather than superseded by the more public interaction of the joint seminars and workshops.

Individual research activity in its turn—whether it be carried out by faculty or students—would, of course, remain the dominant mode of inquiry in many fields. The intention of this proposal is not to diminish the private, individual dimensions of intellectual work, but to enhance its public dimension in ways that would strengthen graduate education in the two Divisions and make it more attractive to the best students, stimulate individual creativity, and foster intellectual advances through shared attention to fundamental problems of common interest. We doubt that there are many of our colleagues who do not share such problems with their fellows, or would shrink from the intellectual challenge of articulating and exploring them in common seminars and workshops. This kind of intellectual inquiry was envisaged as an important goal of the Divisional structure at the University of Chicago when the Divisions were first created. It may, therefore, be appropriate to reiterate in a new context the claim then offered by President Hutchins: "Any program that attempts to coerce investigators into such research will fail. Any program that does not provide the fullest opportunity for such research is reactionary."⁴

Departmental Responsibility

A second possible objection to the creation of a Research Institute structure in the Humanities and Social Sciences Divisions concerns its relationship to the departments and degree-granting committees in the two Divisions. It might be argued that the creation of a Research Institute would undermine the departments' responsibility to determine the requirements for doctoral programs, rob them of their advanced students, erode their ability to further the disciplines through the supervision of dissertation research, and usurp their authority to recommend candidates for the Ph.D.

In our view, the relationship of the departments and the proposed Research Institute in the Humanities and Social Sciences, regarding degree requirements, would be much the same as it now is between the Research Institutes and the relevant departments in the Physical Sciences Division. Departments and committees, in other words, would continue to establish degree re-

quirements as they do now, subject to more general University and Divisional policies. They would continue to exercise the responsibility for the supervision of dissertation research, as they do now, by delegating it to an appropriate faculty member or committee of faculty members. It would be the function of the Research Institute to provide a more effective, sustained, and supportive context for advanced graduate research, not to be a degree-granting body itself.

A Research Institute in the Humanities and Social Sciences would, moreover, provide a no less effective context for advancing the pursuit of disciplinary than of interdisciplinary problems and concerns. It is important to emphasize, from this point of view, that the most powerful institutional model for the seminars and workshops we envisage as the distinctive activity of a Research Institute is a departmental one. The workshops organized by the Department of Economics have been eminently successful in the effort to test the accepted limits of a particular discipline by pressing its concepts and methods as far as possible. The vigorous cultivation of this impulse to transcend the limits of particular disciplines—as it were, from within—would surely be no less characteristic an expression of the intellectual life of an active Research Institute in the Humanities and Social Sciences Divisions than an equally vigorous cultivation of the contrary impulse to transcend the limits of particular disciplines—as it were, from without—through cross-disciplinary explorations and research. We have argued earlier that the traditional vitality of the University of Chicago has rested in large part on its ability to maintain a tension between these contrary intellectual impulses. The purpose of a Research Institute in the Humanities and Social Sciences Divisions would be to preserve that tension, and secure its benefits for the advancement of scholarly research, in the decades to come.

Administrative Clarity

Another possible objection to the Research Institute proposal is that it would complicate the organizational structure of the Humanities and Social Sciences Divisions, and add to the administrative burden of the two Deans. The answer to this objection would vary somewhat according to which of the alternative administrative arrangements considered in section B of this chapter were chosen. But the important consideration is that the Research Institute would represent an effort to clarify a dimension of the present life and purposes of the two Divisions—and to strengthen the achievement of their essential goals—rather than the imposition of an entirely separate structure upon them. If a separate Research Institute were established in each Division, either the Dean could serve as its Director or an Associate Dean could accept subordinate respon-

sibility for its administration. If a single Research Institute were established, it would probably be necessary to appoint a Director, who would work closely with the Divisional Deans in supervising its activities. While there would be some administrative costs to either of these arrangements, we would expect them to be relatively small in comparison to the benefits to accrue from the creation of a Research Institute.

There is also one respect in which a Research Institute structure might reduce tendencies towards administrative complexity in the Humanities and Social Sciences Divisions by offering a flexible framework for the elaboration and pursuit of changing scholarly interests. Separate committees established expressly to bring a group of faculty and students together to pursue common intellectual concerns require considerable time and energy to create, and still more to dismantle. A Research Institute structure would provide faculty and students the opportunity to come together to explore common intellectual interests for as long as that seemed necessary and desirable, without the costs involved in special Committee arrangements.

Economy of Innovation

Consideration of administrative costs suggests a final objection to the creation of the kind of Research Institute structure we propose: the suggestion that its principal goal—the establishment of seminars and workshops providing a more stimulating and supportive context for advanced graduate students engaged in research—might be achieved without its establishment, simply by urging departments and committees in the Humanities and Social Sciences Divisions to institute their own departmental seminar arrangements.

The appeal to institutional economy must always be a powerful one, but in this case we do not regard it as convincing. First, there are forces of inertia at work in many departments that make it unlikely that the kinds of seminars and workshops we regard as important could be set up separately on a departmental basis in the absence of the strong encouragement implied in a more general commitment to the idea at the University and Divisional level. The creation of a Research Institute structure in the Humanities and Social Sciences Divisions would express that commitment and supply that encouragement. Second, the establishment on a departmental basis of the seminars and workshops we propose would require a more general reassessment of curricular priorities and teaching patterns on a Divisional basis. This broader reassessment the Research Institute proposal is designed to stimulate. Third, while departmentally organized seminars and workshops would be an important feature of the work of the Research Institute, those pursuing intellectual interests across departmental and Divisional lines would be no

less significant. A supra-departmental and cross-Divisional form of organization would be necessary to support the development of these latter. Fourth, the Research Institute structure would provide a more clearly defined environment for graduate students throughout the two Divisions who had completed their course work and were embarking on their dissertation research, in a way that would make advanced graduate work at the University of Chicago both more attractive and more stimulating. Fifth, the establishment of a Research Institute would not only effect the changes we propose, thereby strengthening the quality of graduate education at the University at a critical moment in its history. It would also give bold institutional expression to the conception of graduate work for which the University stands, symbolize its commitment to maintaining the essential tension between disciplinary and interdisciplinary work, and testify to the continued strength of its determination to continue a powerful tradition of intellectual leadership in the field of graduate education.

We urge faculty in the Humanities and Social Sciences Divisions to consider the arguments for the Research Institute structure proposed here, and to weigh its prospective benefits against other possible means of responding to the problems to which it is addressed. To provide an effective focus for such discussion, and to translate it into appropriate action, we also recommend the creation of a committee charged to gather and examine faculty views regarding this proposal and to prepare more detailed recommendations for its implementation.

Chapter 7: CONCLUSION

In the course of the preceding discussion, we have offered a relatively large number of recommendations, some more wide-ranging in their implications than others. An index of these recommendations follows this conclusion, in which we present a brief recapitulation of the principal themes of our report.

We have insisted in general upon the national importance of maintaining vigorous programs of graduate education at the highest level of creativity; and we have emphasized, in particular, the distinctive vision of that enterprise to which the University of Chicago stands committed. We have argued for a broad conception of graduate education, conceived as a means of preparing individuals to ask questions and formulate problems in a manner critical to understanding and achievement in many human endeavors. We have defended the training such a conception entails as appropriate to a

number of ends—academic and non-academic—and we have offered recommendations aimed at strengthening our students' ability to define and pursue these ends effectively.

We have insisted, too, on the essential nature of the Ph.D. as a research degree. In doing so, we have argued particularly for the creation of a clearer and more supportive institutional environment than now exists in the Humanities and Social Sciences Divisions for the research phase of graduate work. Our recommendations in this respect are intended to shorten the time during which principal emphasis is placed on course work and course requirements (which now consume the greater part of the student's period of formal registration in these two Divisions); to encourage students to embark more directly and self-consciously upon the research phase of their work; and to permit them to remain in residence longer than is now normally the case, in order to benefit more fully from the institutional and intellectual resources of the University during their dissertation research and writing. We have also offered a proposal for a Research Institute structure in the Humanities and Social Sciences, designed to create a more attractive and challenging context for graduate study at this crucial advanced stage.

Thus our aim has been to conceive of graduate education at the University of Chicago as a whole, from matriculation to graduation. We have attempted to gauge the University's ability to recruit the most promising prospective applicants for graduate study and to offer recommendations for its improvement. But we have also argued the need for financial aid and other policies sensitive to the overall rhythm of graduate work, and appropriate to sustain the best efforts of our graduate students throughout a difficult and demanding career.

Finally, we have considered the University's traditional commitment to excellence in the pursuit of knowledge and understanding, and we have sought to identify some of the difficulties its faculty now faces in the pursuit of that goal. We do so in the conviction that this University must continue to regard itself as more than a loose assemblage of units engaged in a collective race for prestige with other universities. Its enduring greatness rests upon the distinctive wholeness of its vision of the tasks of an intellectual community, and on the common determination of each generation of its members to pursue that vision anew.

Notes

1. Murphy and Bruckner, *The Idea of The University of Chicago*, p. 74.
2. Self-Study Committee, *The University of Chicago, A Report on the Behavioral Sciences at The University of Chicago* (Chicago, 1954).
3. Clifford Geertz, "Blurred Genres: The Refiguration of Social Thought," *The American Scholar*, 49 (1980), p. 168.
4. *The Idea of the University of Chicago*, p. 372.

INDEX OF RECOMMENDATIONS

- | Page | Recommendation |
|-------|---|
| 3-100 | That each department or committee initiate an evaluation of its graduate programs in response to the questions raised and the recommendations offered in this report. |
| 3-100 | That a regular review procedure be instituted, providing for the evaluation of each department (or group of departments) at least every ten years; this procedure to begin with an accelerated cycle of three to five years. |
| 3-103 | That an advisory committee on the use of graduate students in the College be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creative use of graduate students in undergraduate education. |
| 3-103 | That other arrangements also be considered to provide opportunities for graduate students to gain experience in, or otherwise prepare for, teaching. |
| 3-105 | That the role of the Career Counseling and Placement Office be expanded to provide fuller counseling and assistance to graduate students in relationship to non-academic careers. |
| 3-106 | That the faculty identify opportunities to create more general programs of graduate study linking particular fields and disciplines in ways that would offer a broad preparation for academic and non-academic careers alike. |
| 3-106 | That individual students be allowed greater flexibility to cross the lines between the graduate Divisions and the professional schools. |
| 3-107 | That a committee be appointed, including appropriate Deans, to create the arrangements necessary to establish joint graduate/professional school programs. |
| 3-107 | That each department examine its requirements and offerings, with a view to avoiding premature specialization in introductory graduate work. |
| 3-108 | That Deans assume greater responsibility for common curricular matters at the Divisional level. |
| 3-108 | That M.A. programs be clarified where necessary to represent demanding programs of study, completion of which should provide clear evidence regarding a student's potential for advanced research; and that they be completed within a maximum of six quarters of full-time study (or its part-time equivalent). |
| 3-108 | That faculty seek to identify opportunities to create new M.A. programs that might provide a broad context for intellectual training appropriate for non-academic as well as academic careers. |
| 3-108 | That the current twenty-seven course requirement for the Ph.D. be replaced with an equivalent residency requirement of nine quarters. |
| 3-108 | That formal course work for the Ph.D. normally not extend beyond a period equivalent to six quarters full-time residency at a normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability. Unless explicit permission is granted to the contrary, students denied formal admission to doctoral research should be expected to terminate their graduate study at this point. |
| 3-109 | That a clearer context be created in the Humanities and Social Sciences Divisions for the dissertation writing and research that constitute the essence of Ph.D. training at the University of Chicago. |
| 4-119 | That there be a thorough review of recruitment procedures at the level of the four Divisions. |
| 4-121 | That an up-to-date pamphlet describing Hyde Park be published and included with every offer of admission to the University. |
| 4-121 | That there be energetic experimentation with campus visits for applicants admitted to graduate study, in departments where these do not now occur. |
| 4-121 | That the statistical function of the office of the Dean of Students be enlarged to include maintenance of records of indicators of the academic quality of applicants and matriculants for graduate study; and that a regular survey of applicants be conducted on a biennial basis. |
| 4-126 | That students who have satisfactorily completed six quarters in residence (or its part-time equivalent), and who have been formally admitted to doctoral research, be allowed to substitute a further six quarters of residency at half tuition for their remaining three quarters of residency at full tuition. |
| 4-127 | That students who have completed payment of full tuition for nine quarters in residence be permitted to continue formal residency until the Ph.D. is conferred by maintaining FTC (Full Time Certification) status at a reduced fee. |
| 4-127 | That students no longer in residence who remain active candidates for the degree be ex- |

- pected to maintain their official status as such by a form of continuous registration (at a nominal fee) and by regular quarterly reports on the progress of their dissertation.
- 4-127 That unless explicit permission is granted to the contrary, students who have not submitted an acceptable dissertation within five years of their formal admission to doctoral research be dropped from active candidacy for the degree.
- 4-128 That a high priority be placed on the utilization of space on campus, as it becomes available, to provide more adequate facilities for graduate student research.
- 4-130 That there be further exploration of the feasibility of creating a Graduate Student Center.
- 4-135 That there be a continuation of the new policy of guaranteeing continued aid at the same level for three years to incoming students in the Humanities and Social Sciences Divisions, subject to clearer definitions of appropriate performance and adequate flexibility to reward superior work by students admitted without aid.
- 4-136 That, where the cost of FTC registration is not borne by financial aid from external sources, the University make available tuition support to defray this cost for students who have not completed more than fifteen quarters residency.
- 4-136 That particular emphasis be placed on the importance of providing adequate financial support for students at the dissertation stage of their graduate work.
- 4-136 That appropriate steps be taken to prevent students from accumulating an impossibly large debt.
- 4-136 That the University consider alternatives to existing loan arrangements in the event that current federal loan programs are modified, including the feasibility of offering deferred partial tuition loans to students who meet strict criteria of need.
- 4-136 That the University seek foundation support for a program of post-doctoral fellowships for outstanding young scholars in the arts and sciences.
- 4-136 That a committee be appointed to consider the special issues relating to the recruitment of foreign students.
- 5-143 That a new proposal for a Mathematics Research Institute be developed in order to clarify the various possibilities regarding the size, scope, structure, and functions of such an institute.
- 5-162 That the Division of Humanities reconsider the proposal to create a Language Institute.

- 5-166 That a committee be created to study whether the University should establish a Department of Computer Science.
- 6-174 That a committee be established to gather and examine faculty views regarding the proposal to create a Research Institute structure in the Humanities and Social Sciences, and to prepare more detailed recommendations for its implementation.

APPENDIX A The Reliability of Enrollment Projections

The confidence with which demographic or econometric projections of enrollments are announced reflects the analyst's conviction that the model employed is theoretically correct and the input data reasonably accurate. These assumptions are often (perhaps usually) justified, but it does not follow that the resulting projections are sufficiently accurate to be useful. Indeed, this seems to be implicitly acknowledged by the forecasters themselves in that they make no attempt to specify precisely "error bounds" for the projections, relying instead on vague subjective (and unverifiable) statements of anticipated accuracy. A true assessment of projection accuracy would seem to require a retrospective empirical evaluation of past forecasts. Such a study is made difficult by a variety of circumstances surrounding past projections, and the fact that most have tended to be "one-shot" affairs. Without replication, the assessment of accuracy is a vexed question.

One notable exception to this lack of replication of projections is the long-running series published by the National Center for Education Statistics (NCES). Since 1965, NCES has published annual volumes, *Projections of Education Statistics to 19XX-XX* which in each case contains (among many other things) forecasts of the October enrollments at both public and private institutions of higher education. Because national aggregates for a large group of institutions are being forecast, we might expect greater accuracy (in percentage terms) in such predictions than could be realized if only graduate enrollment or only University of Chicago enrollments were being forecast. The NCES predictions of college enrollments have a demographic basis—essentially, they take, for each of the next ten years, the best available estimate of that year's population aged eighteen to twenty-one years and multiply it by an estimate of the enrollment rate. (This latter estimate is based on the assumption that present trends in the enrollment rate continue; see the NCES reports for details.) The predictions are updated each year.

Tables 1 and 2 were compiled from several years' volumes of the NCES *Projections*. For each year they show, for both public and private institutions, the actual enrollments and the NCES predictions of that year's enrollment that had been made one year before, two years before, and three, four, five, six, eight, ten years before. For example, the actual October enrollment in public institutions in 1976 was (in thousands) 8,653. One year before 1976 it had been predicted this enrollment would be 9,298; three years before it had been predicted the 1976 enrollment would be 7,910; five years before the prediction had been 8,754; six years before it was 9,560; ten years before it was 7,390. These predictions for 1976 ranged from 7,390 to 9,560! This range is comparable to that for the public enrollment series itself for the seven years from 1970-76.

The prediction errors themselves are tabled in Table 3. For purposes of comparison, the enrollments were also forecast by a naive method that did not disaggregate by type of institution or sex (as the NCES does), and that ignored census figures. This naive method simply predicted that the future would be like the past: in any given year it forecast that the change in enrollment over the next year would be the same as the change over the past year, that the change over the next five years would be the same as the change over the past five years, etc. What is remarkable is that the two methods give comparable results; in fact, the naive method does somewhat better. Where one might expect that forecasts made on a demographic basis would have a decisive edge, it instead appears that they operate at a slight disadvantage. Of course, there is no guarantee that the same will remain true in the future under different demographic conditions, but the comparison is not encouraging.

A similar table was constructed from NCES projections of graduate enrollments alone. However, the interpretation of these figures is complicated by a lack of uniformity in the series: apparently accurate enrollment counts before 1970 are not available (the figures given are estimated from surveys), and from 1972 on extension enrollments have been included in both actual and projected figures.

The lesson we draw from these tables is that such predictions can be very unstable, and that predictions made as far as ten years in the future tend to be far off base. Predictions for private institutions have tended to be more accurate than those for public institutions, but only because the private enrollments have changed

less. And even for the private institutions the eight- and ten-year-ahead predictions have missed the major patterns by a large margin (1976 was an exception here; in that year it was the *short-term* projections that were off by amounts comparable to several years' variation in the series.)

These projections do not do well because they fail to incorporate changes that are more influential than the factors they do include, that is, unanticipated changes in economic and social conditions. One of the latter is the dramatic increase in the number of women and older Americans in higher education. For example, the following table illustrates the magnitude of the change in one age bracket:

	1968	1978
Men	20.5	19.1
Women	8.3	13.6

Table 4. Percents of men and women aged twenty-two to twenty-four attending school. From *Digest of Education Statistics*, 1980, p.9.

Trends in other relevant age groups (20-21, 25-29, 30-34) are in almost the same proportion. A recent article in the *Chronicle of Higher Education* noted this surprising increase, calling it an "Enrollment boom among older Americans" (4 May 1981).

When we look at the relationship between individual university enrollments and national figures, we must become even more pessimistic about the possibility of forecasts that will be useful for individual institutions. Many major universities have experienced enrollment decreases over the past decade (despite national and demographic increases). This lack of a strong (or even positive) relationship between these series, and the variation within individual institutions, among schools, divisions, and departments, belies the existence of a predictable general national pattern.

There remains the possibility that a university's own data can, by itself, provide sufficient information for useful predictions. We have pursued this question with data from our own institution, the University of Chicago, and find that they do not, at least without incorporating strong subjective judgments about the detailed persistence of social and economic trends, a persistence that does not seem warranted by the limited data available. When the enrollments are viewed alone, they behave very much like a "random walk," a mathematical model that describes the behavior of stock prices and other economic series where future changes are unrelated to the past.

TABLE 1: NATIONAL CENTER OF EDUCATION STATISTICS PROJECTIONS
FOR U.S. PUBLIC INSTITUTIONS OF HIGHER EDUCATION^a

	ACTUAL	1 YR BEFORE	2 YR BEFORE	3 YR BEFORE	4 YR BEFORE	5 YR BEFORE	6 YR BEFORE	8 YR BEFORE	10 YR BEFORE
1961	2,469								
1962	2,753								
1963	3,066								
1964	3,468								
1965	3,970								
1966	4,349	4,385							
1967	4,816	4,781	4,775						
1968	5,431	5,185	5,123	5,095					
1969 ^b c	5,840/5,986	5,619	5,354	5,269	5,225				
1970	6,428	6,169	5,913	5,623	5,504	5,443			
1971	6,804	6,988	6,562	6,270	5,951	5,797	5,708		
1972	7,071	6,986	7,511	7,001	6,668	6,319	6,134		
1973	7,420	7,235	7,503	8,012	7,450	7,072	6,691	6,337	
1974	7,988	7,525	7,402	7,615	8,538	7,881	7,459	6,790	6,915
1975	8,835	8,359	7,707	7,615	8,352	9,076	8,305	7,394	7,390
1976	8,653	9,298	8,683	7,910	7,819	8,754	9,560	8,194	8,018
1977		9,090 ^d	9,716	8,970	8,126	7,999	9,136	9,070	8,848
1978			9,368	10,118	9,218	8,292	8,143	10,390	9,806
1979				9,653	10,464	9,408	8,406	9,790	10,953
1980					9,941	10,747	9,567	8,265	10,315
1981						10,149	11,012	8,514	8,214
1982							10,311	9,726	8,360
1983								11,232	9,503
1984								10,516	11,070
1985									10,653
1986									
1987									

a. The first column after the year gives the actual October enrollment (in thousands); "projections" of that year's enrollment made one to ten years before are given to the right.

b. In 1971 Edition the 1969 Actual Public was reported as 5,897, this figure then appeared in subsequent volumes.

c. A/B; A—Actual Reported in 1969 Edition; B—Actual Reported in 1970 Edition.

d. Represents intermediate projection; also published were high and low projections.

TABLE 2: PROJECTIONS FOR U.S. PRIVATE INSTITUTIONS OF HIGHER EDUCATION

	ACTUAL	1 YR BEFORE	2 YR BEFORE	3 YR BEFORE	4 YR BEFORE	5 YR BEFORE	6 YR BEFORE	8 YR BEFORE	10 YR BEFORE
1961	1,578								
1962	1,651								
1963	1,700								
1964	1,812								
1965	1,951								
1966	2,041	2,104							
1967	2,096	2,190	2,237						
1968	2,082	2,184	2,281	2,329					
1969	2,078/2,108	2,077	2,187	2,284	2,338				
1970	2,153	2,106	2,110	2,229	2,328	2,389			
1971	2,144	2,217	2,152	2,162	2,292	2,393	2,454		
1972	2,144	2,138	2,262	2,212	2,225	2,367	2,463		
1973	2,183	2,150	2,172	2,295	2,269	2,285	2,440	2,615	
1974	2,235	2,184	2,166	2,191	2,330	2,318	2,337	2,606	
1975	2,350	2,260	2,196	2,187	2,210	2,364	2,359	2,562	2,750
1976	2,859	2,395	2,281	2,219	2,215	2,223	2,382	2,422	2,718
1977		2,408	2,430	2,296	2,245	2,243	2,232	2,413	2,650
1978			2,414	2,454	2,300	2,265	2,263	2,381	2,477
1979				2,426	2,464	2,294	2,273	2,233	2,451
1980					2,453	2,467	2,280	2,252	2,324
1981						2,420	2,465	2,277	2,217
1982							2,411	2,231	2,202
1983								2,411	2,217
1984								2,344	2,107
1985									2,290
1986									2,250
1987									

TABLE 3: PROJECTION LEAD TIME*

Year	Actual Enrollment	1 YR	2 YR	3 YR	4 YR	5 YR	6 YR	8 YR	10 YR
1966	4,349	-36 (-123)							
1967	4,816	35 (88)	41 (-58)						
1968	5,431	246 (148)	308 (201)	336 (244)					
1969	5,986	367 (-60)	632 (324)	717 (354)	761 (515)				
1970	6,428	259 (-113)	515 (-85)	805 (264)	924 (483)	985 (764)			
1971	6,804	-184 (-66)	242 (-352)	534 (-88)	853 (238)	1,007 (575)	1,096 (998)		
1972	7,071	85 (-109)	-440 (-354)	70 (-552)	403 (-323)	752 (192)	937 (649)		
1973	7,420	185 (82)	-83 (-202)	-592 (-620)	-30 (-582)	348 (-376)	729 (257)	1,083 (1,376)	
1974	7,988	463 (219)	586 (274)	63 (-189)	-550 (-519)	107 (-516)	529 (-121)	1,198 (1,324)	
1975	8,835	476 (279)	1,128 (799)	1,220 (679)	483 (43)	-241 (-51)	530 (-71)	1,441 (1,337)	1,920 (2,491)
1976	8,653	-645 (-1,029)	-30 (-252)	743 (241)	834 (-58)	-101 (-606)	-907 (-735)	459 (67)	1,263 (1,747)
Average Error		271 (211)	400 (290)	564 (359)	605 (345)	506 (440)	788 (472)	1,045 (1,026)	1,591 (2,119)
Public Enrollment (in thousands)									
1966	2,041	-63 (-49)							
1967	2,096	-94 (-35)	-141 (-106)						
1968	2,082	-102 (-69)	-199 (-188)	-247 (-169)					
1969	2,108	31 (40)	-79 (-133)	-176 (-274)	-230 (-216)				
1970	2,153	47 (19)	43 (30)	-76 (-227)	-175 (-278)	-236 (-237)			
1971	2,144	-73 (-54)	-8 (24)	-18 (-69)	-148 (-348)	-249 (-360)	-310 (-320)		
1972	2,144	6 (9)	-118 (-80)	-68 (-31)	-81 (-208)	-223 (-397)	-319 (-426)		
1973	2,183	33 (39)	11 (3)	-112 (-27)	-86 (-82)	-102 (-281)	-257 (-431)	-432 (-391)	
1974	2,235	51 (13)	69 (100)	44 (29)	-95 (-30)	-83 (-169)	-102 (-278)	-371 (-461)	
1975	2,350	90 (63)	154 (128)	163 (170)	140 (158)	-14 (-5)	-9 (-166)	-212 (-404)	-400 (-336)
1976	2,859	464 (394)	578 (533)	640 (646)	644 (653)	636 (612)	477 (365)	437 (207)	141 (81)
Average Error		96 (71)	140 (132)	172 (182)	200 (247)	220 (295)	246 (284)	363 (366)	270 (208)
Private Enrollment (in thousands)									

*Projection errors in NCES forecasts of U.S. higher education enrollment, computed as observed minus projected. Average errors (without regard to sign) are also shown. Figures in parentheses are corresponding errors made by the naive method which does not disaggregate and predicts that future changes will be identical to past changes over the most recent period of the same length.

THE UNIVERSITY OF CHICAGO RECORD
Room 200, Administration Building