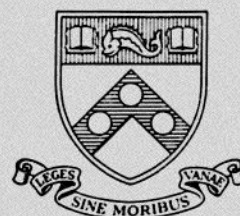


*The University of Pennsylvania:
A Five-Year Review*



by Martin Meyerson
President

OF RECORD



THE UNIVERSITY OF PENNSYLVANIA: A FIVE-YEAR REVIEW

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January, 1976

PREFACE

In the pages that follow, I have attempted to review the five years I have served as president of the University, beginning in the fall of 1970, and to describe a few of the issues before us in the next few years. A five-year review of an institution so large and complex as ours is an almost impossible undertaking. What follows is not history, nor necessarily a summary of the most important events. (The history I leave to future historians; the "most important events" I leave to us all to judge for ourselves.) Rather, it is a review of the particular impressions, challenges, satisfactions, and problems that preoccupy this presidency.

I dedicate this review to William L. Day and Thomas S. Gates. As chairman of the Trustees until his death in December, 1973, Bill Day was a magnificent friend of the University and an inspiration to all of us. Tom Gates, another tireless supporter of the University, has been serving as chairman of the Executive Board. He will soon become an Emeritus Trustee, and I know we will continue to enjoy his wisdom and devotion to the University. Both represent the most important attribute of the distinguished board we are so fortunate to have, as typified by our present chairman, Donald Regan: a dedication to the University that led them not to contentment but to aspirations for greater educational and scholarly quality.

This is not the place to begin acknowledging those colleagues whose contributions lie behind all of the University's achievements in these past five and one-half years. But I must single out the two who have served with me as Provost of the University. Curtis Reitz, who succeeded David Goddard, played a very special role for two years while I became reacquainted with the University. He was very much a part of the process of forming the early agenda I describe below, and has continued to help us in many ways since. Eliot Stellar began his apprenticeship as a future Provost as co-chairman of the Development Commission. Provost since January, 1973, Eliot Stellar has brought uncommon sensitivity and good spirits to a demanding job. To them and to many others, I owe thanks for all that has been rewarding over these years.

Several themes appear throughout the review and might be mentioned at the outset:

- *The Strength of One University Linking the Theoretical with the Applied.* This theme provides the focus for our Program for the Eighties and the source of many of the advances that we have been making in both teaching and research. Its familiarity must not let us treat it merely as a slogan and forget its profound message for our future development. Our ability to link the theoretical and the applied, as we have done since the mid-1700s, is the source of an extraordinary potential.

- *Financial Constraints.* No university today is untroubled by costs exceeding resources. Obviously we must concentrate on

the academic aims of the University, rather than just our finances. But we can do so only in the knowledge that the era of growth is mainly behind us and that academic development—which must continue—will demand sharper priorities and more sacrifices. What I fear most from financial pressures is not so much the loss of amenities. Rather, I fear the parochialism, the shortened vision, and the loss of collegiality that come from continuing financial pressures.

- *Selectivity.* No one denies that a quest for excellence—with or without financial troubles—demands that we be selective. And in many ways, we have been. The priorities of the Program for the Eighties, the budgetary allocations among schools and support services, and increasingly the allocation of scarce resources within the schools all reflect choices. But we have not been sufficiently selective. Too many of our decisions, both centrally and within the schools, are based on what we have done in the past—and on what, therefore, is easiest to do in the future. Every program at Pennsylvania ought to be a superlative one and we must allocate scarce resources to this end.

- *Strengthening Research and Extending Scholarly Expectations to All Schools, Departments, and Members of the Faculty.* Pennsylvania is, above all, a research university. Our contributions to knowledge have been strong in many areas, but mixed in others and weak in a few. We need never lose sight of our missions of teaching, training, and practical application of knowledge, but these functions should everywhere take place amid research and new scholarly contributions to our many fields.

- *Attention to Undergraduates.* Though the mission unique to our University is scholarship, the strength of an American institution—its reputation and its alumni support—also depends heavily on its ability to attract and serve a strong undergraduate student body. I believe we have improved the quality of the educational experience we offer our undergraduates, certainly in depth and increasingly in breadth, and we will continue to do so.

- *The Estimate of Pennsylvania.* Our self-image ranges between complacency and self-satisfaction on the one hand, and excessive modesty on the other. To the outside world—of peer institutions, potential faculty and students, foundations, and others—we are, by and large, neither known nor appreciated as much as we should be. What we need is a more realistic combination of much-deserved pride and a determination to become better—where we are already strong as well as where we are weak. We need to convey to the outside, more than we have, the attributes that make us a great research University dedicated to the highest quality education in the disciplines and professions and for graduate and undergraduate students alike.

These are a few of the themes of the last five years and of this report to the trustees, faculty, students, alumni, and friends of the University.

An Emerging Agenda

In 1970, I returned as president to the University of Pennsylvania which I had known 13 years before as a professor. In those intervening years, Pennsylvania had changed significantly. Most important, the faculty had improved tremendously. It had become less inbred. The recruits to it were much more attuned to the scholarly and other standards befitting a national and international university. The undergraduate students were more cosmopolitan. The University was bigger, of course, and the campus far more pleasant. Pennsylvania was becoming a residential university. For all these achievements I thank Gaylord Harnwell, David Goddard, and many other colleagues.

The University in 1970 had just passed through an extraordinary era in the history of American higher education. The phenomenal rise in federal support for research had brought new expectations and vast new resources into universities. Enrollments were increasingly rapidly and graduate schools could scarcely keep up with the demand for faculty to handle new and growing colleges. Public confidence in higher education was high—perhaps in retrospect too high—as colleges and universities were seen as the path to the good life and as the source of solutions to many of the problems of a complex industrial society. The half dozen years preceding 1970 had also seen the emergence of the student as a participant in the governance of colleges and universities. This student role was often naive and occasionally destructive, but its overall effect was to make our colleges and universities more responsive to all members of the academic community.

At the time of my first January meeting with the Trustees, five years ago, it was evident that this era had come to an end. Those of us in universities were entering the decade of the 1970s uncertain about how to manage without growth and a little stunned by our sudden fall from grace in the esteem of the larger society. An abrupt reduction in federal support and a mounting inflation (well before the energy crisis) brought budget deficits that marked the beginning of a period to be beset by financial problems. A slowdown in the growth of the traditional college-going age cohort plus an emerging skepticism regarding the value of a university education brought about a new concern for “holding enrollments” and signaled the approach of the decade of the 1980s when the national pool of 18- to 21-year-olds will decline by as much as 15 percent.

This was the larger context in which I had begun that fall and winter five years ago to assess the challenges for the University of Pennsylvania in the 1970s. It was a task of recognizing and articulating the problems and opportunities that existed. In those early months, I had the help of many: Gaylord Harnwell and David Goddard, of course, with their experience in the prior years; Herbert Callen, chairman of the Faculty Senate, and his colleagues; our new provost, Curtis Reitz; administrative associates like Alice Emerson, John Hobstetter, Harold

Manley, William Owen, and Jack Russell; and Trustees, particularly William Day, our chairman.

Four challenges were obvious. The *first* and most immediate problem was our financial condition. In the short run, we had to bring into balance a budget that in the previous fiscal year had consumed the entire reserve fund of \$1.6 million and run an uncovered operating deficit of \$700,000. (The successful fund drive of the 1960s had not been directed to operating costs.) The Trustees mandated a balanced budget within three years—a goal that was reached, only to be lost again with the upsurge of energy costs, an erosion of the value of our investments, and a failure of state aid to keep up with inflation. In the long run, of course, the financial challenge was to increase greatly our endowment and other private funds, and to begin eliminating services of low priority. The other fiscal alternatives, which I first pointed out in 1971, were to become a state-related school, thereby giving up much of our precious independence and selectivity, or to become an essentially “proprietary” institution, allocating our resources by financial rather than academic priorities.

Second, it was apparent that renewed attention had to be given to the undergraduate. Here, as at virtually all other major universities, the undergraduate had been neglected in favor of graduate education and research throughout much of the 1950s and 60s. Some small part of this neglect may have been a necessary and justifiable price to pay for the high quality of scholarship and graduate teaching that must be a principal mission of a national research university. Some of the neglect may also have been hidden by the growth in student demand for admission to institutions like the University of Pennsylvania—an excess of demand that, as in any market, made the supplier respond less to the needs of the consumer and the quality of the offerings. But no American university has remained great for very long without a distinguished undergraduate student body. It was obvious that in the decade of the 1970s, and more so the 1980s, there would be fewer qualified undergraduates for the institutions that aspired to a selective national student body. And it was obvious that an undergraduate student body could not remain (not to mention become more) distinguished without the provision of a kind and a quality of education that the gifted student cannot find elsewhere. In our case, this meant that there had to be more opportunities to work with faculty in small classes and tutorials; more rewards to faculty members, departments, and schools for attracting undergraduates; and superior kinds of cultural and social experiences available outside the classrooms. Our aim had to be to continue to attract an undergraduate student body that was very able and well prepared. We needed students who would use fully the vast resources of a research university. A revitalization of undergraduate education seemed key to attracting and retaining the students we sought.

Third, we needed to reconsider our mission in graduate education. In 1969-70, the year before I arrived, we admitted 574 new students to graduate work in 62 graduate programs. Yet it was apparent in 1970-71 (if less obvious than today) that the shrinking of financial support for graduate education and the imminent collapse of many academic job markets would make it increasingly difficult to maintain, much less to upgrade, the quality of our programs while attempting to serve so many students. The extraordinary cost of truly superlative graduate training meant that we were probably already overextended in number of programs and students. Despite extensive support for laboratories, library collections, and fellowships, and despite a high ratio of faculty to graduate students, neither we nor other major universities were able to continue increasing resources for graduate students in the face of rising costs and diminishing federal scholarships and other funds. The great American graduate schools so painstakingly developed in the previous two decades—surely they were the most outstanding centers in the world—were in jeopardy.

In both graduate and advanced professional education, our aim had to be selectivity and quality. One measure of success in graduate education ought to be the degree to which our young Ph.D.s are sought as junior faculty members by those universities whose graduates we recruit for our own junior faculty. One measure of success in advanced professional programs ought to be the degree to which our physicians, lawyers, M.B.A.s, city planners, engineers, and others go on to become not merely capable practitioners, but leaders of their professions—as sought after by others as we would like our faculty to be. By such measures, our record at the start of this decade was mixed: excellent in some professional schools; good to fair in others; and from most distinguished to passable in the various graduate arts and sciences.

Fourth, I sensed that in spite of the number of universities—most of them, I suppose—that lay claim to excellence or even to greatness, there is little room at the top, and many aspirants for the first dozen or so positions. I knew in January of 1971, and since, that we were within that top dozen. But I also believed that we should seek to be within the top half dozen even though this was becoming increasingly difficult. This was not because I expected position five or six to be vastly better than position 10 or 12—if indeed such ranks make sense. What I sought, rather, was the effect of the quest for relative betterment: the ambience of self-confidence on the one hand and of spirited self-criticism on the other, which one finds in an institution that is proud, but not content, with what it has achieved. My new colleagues were proud, and with justification, but no position is secure if the hunger for improvement wanes.

Thus, in my January, 1972, report to the Trustees, I addressed our need for sharpened directions, and I called for the formation of a University Development Commission to apply the wisdom of faculty, students, administrators, and trustees to the task. Ably led by Professors Robert Dyson and Eliot Stellar, the Development Commission worked through the spring, summer, and fall of 1972 to prepare recommendations on how the University might best meet the challenges and opportunities of the 1970s and beyond. In January, 1973, the Commission reported. It emphasized the theme of One University—a concept that stressed the extraordinary opportunity of an institution as diverse and yet compact as ours to flourish through the linkages among disciplines and professions, departments and schools, and between the theoretical and the applied in both teaching and research. The 94 recommendations of the Report of the Development Commission provided a necessary agenda for action. The Faculty Senate, the University Council, and most parts of the University tested the recommendations through their deliberations. In February of 1973 and again in January of 1975, my administrative colleagues and I reported

on implementation of the Development Commission's recommendations. These reports showed the impact of the Commission on virtually every aspect of University life, from the undergraduate curriculum to continuing education to the formation of the budget. Most recommendations have been implemented with the help of the deans, the University Council, and other bodies. Although we often lament the seemingly cumbersome way of change in a university, the fact remains that a far-reaching program for the University of Pennsylvania in the years ahead has come from the faculty, students, administration, and trustees—and much has been achieved.

But the Development Commission gave us something more than an agenda. It gave us the academic vision to launch the Program for the Eighties—the largest fund-raising drive in the University's history. Two more years of planning went into the preparations for this drive, formally announced last October. But by the time of the public announcement, our Trustees had already committed a total of \$32,435,584. An additional \$13,365,382 had been committed from other sources giving us a nucleus fund of \$45,800,966—an inspiring step toward our five-year goal of \$255 million. We now, in January, 1976, have contributions and pledges totaling \$57 million. This achievement, although still a long way from our ultimate goal, is a testament to the dedication of many trustees, alumni, friends, foundations, and corporations who believe in the future of the University and who are determined to keep it strong and independent. It is also a testament to the deans, faculty, students, and administrative colleagues who have given the Program for the Eighties a foundation of academic substance and who are constantly proving the vitality of our University.

Let me turn, then, to some of the highlights of the past five years, concentrating on events of the past two and leading to an assessment of where we are today.

Undergraduate Education

Students

Undergraduate fall enrollment in 1970-71 totaled 7588, of whom 1829 were freshmen drawn from a pool of over 8000 applications. Fall enrollment in 1974-75 was 7510, of whom 2331 were freshmen and transfers drawn from a combined pool of over 9000. Although the total undergraduate student body has remained approximately level in recent years, more students are graduating in less than four years, and the proportion of freshmen and transfers has increased. This past fall, over 2400 new students entered from a pool of over 10,700 applicants.

Quality, difficult as always to measure, is good. Entering Scholastic Aptitude Test scores have declined since the late 1960s, as have scores nationally (a national panel was commissioned by the Educational Testing Service of Princeton, New Jersey, to try to find out why), but our mean S.A.T. scores have declined less in the last five years than the mean scores nationally (by about 2.7 percent compared to 4.4 percent), and have held essentially constant for the last four entering classes. Considering the competition for top students—a competition which has been made more difficult in the private sector by an increasing gap between public and private tuitions—we are not unhappy about these measures. Nor, however, are we completely satisfied. We should have more of the ablest.

Early in 1971, I made several recommendations for strengthening our recruiting programs. I suggested a major

change and expansion of the Benjamin Franklin Scholars Program from a small (25 to 30) number of entering freshmen to perhaps 100 students, selected from our top applicants (regardless of financial need) who would be given not only the largest financial aid commensurate with their need, but entry directly into the general honors program if they wished it. The new Benjamin Franklin Scholars Program was begun in 1972-73. In the fall of 1975, 104 freshmen Benjamin Franklin Scholars enrolled, bringing the total number of undergraduate "Ben Franklins" to 532.

In 1971 I also recommended greater use of alumni in recruiting efforts through a revitalized network of Alumni Secondary School Committees. The future should also bring larger roles for faculty and students in recruiting alongside the able staff headed by our new Dean of Admissions, the Rev. Stanley Johnson.

Women constitute about one-third of the undergraduates in the arts and sciences, little changed over the past years. Freshman women in Wharton have increased from 40 in the fall of 1973 to 53—17 percent of the class—this year. Freshman women in Engineering increased from five in 1973 to 31—18 percent of the class. The number of entering minority students has declined slightly here as at other similar universities. However, minority students are still almost 10 percent of the undergraduate student body, and are considerably stronger academically than before. More than 600 of these are Black students, or about 7.5 percent of all undergraduates. Some 30 Chicano and Latino students entered this past fall, bringing the number of Spanish-speaking undergraduates to more than 80.

Although full financial aid figures are not yet available for the class entering last fall, something close to half of the freshmen entering in the fall of 1974 had financial assistance from the University. (Though we have less endowment for financial aid than any other Ivy institution we remain comparable to most of the others in our awards.)

APPLICATIONS, ADMISSIONS, & MATRICULATIONS

Freshmen and September Transfers
Entering in Fall 1970 through Fall 1975

	Applications	Admissions	Matriculations
1970	8,083	3,439	1,829
1971	8,563	4,211	2,283
1972	8,353	4,491	2,333
1973	9,087	4,383	2,251
1974	9,032	4,516	2,331
1975	10,707	4,923	2,439

Figures for Fall 1970 do not include transfers. From 1971 to 1975, the September transfer component increased from approximately 1300 applications, 475 admissions, and 350 matriculations to approximately 1690 applications, 680 admissions, and 450 matriculations. Spring term transfers are not included for any year, but increased between January 1973 and January 1976 from approximately 150 applications, 60 admissions, and 50 matriculations to approximately 330 applications, 135 admissions, and 110 matriculations.

ENROLLMENT

Fall Term, 1970-71 through 1974-75

	1970-71	1971-72	1972-73	1973-74	1974-75
Full time					
Undergraduate	7,588	7,720	7,813	7,394	7,510
Graduate	5,010	5,028	4,857	4,772	5,029
Professional	2,062	2,160	2,176	2,163	2,288
Total full time	14,660	14,908	14,846	14,329	14,827
Part time	4,796	4,489	4,596	4,846	5,228

Programs

Early in 1971, Provost Reitz and I prepared a set of recommendations for making our undergraduate programs more individually tailored, including combining for some students undergraduate with graduate and advanced professional programs, strengthening individualized majors, and beginning new "collegiate" programs tied to residences. These recommendations were reinforced in the report of the University Development Commission.

Seminars and Individual Instruction. The combination of the Freshman Seminar Program, launched in 1972, and the Thematic Studies Program, begun in the spring of 1972 with support from the Sloan Foundation, has made it possible for each freshman to enroll in at least one small seminar-type class. Last year, 194 courses were formally listed as freshman seminars, enrolling 1508 students. Another 37 courses, enrolling 915 students, were given under the Thematic Studies programs.

University Scholars. What Provost Reitz and I called a "Continental Option" in 1971 and the Development Commission subsequently labeled a University Scholars Program has been established. It is my hope that as many as 10 percent of the undergraduate students might soon gain early admission to graduate and advanced professional programs and begin as early as the freshman and sophomore years to blend their undergraduate baccalaureate studies with advanced work in our graduate and professional schools. Thirty students are currently University Scholars, pursuing the baccalaureate while simultaneously enrolled in the Graduate Arts and Sciences or in the Schools of Medicine, Veterinary Medicine, Dental Medicine, Wharton Graduate, Engineering, and Annenberg. Professors Otto Springer, Robert Schrieffer, Ward Goodenough, David DeLaura, and David Rowlands constitute the executive committee overseeing the program. Our aim is to greatly expand the University Scholars concept to become a magnet for many superbly qualified students who can make the most of our One University with its melding of professions and disciplines and its reduction of barriers between undergraduate and graduate education.

College Houses. In the fall of 1972, our first major experiment in the integration of academic and residential living began with the opening of the Van Pelt College House. The college house concept was subsequently strongly endorsed by the University Development Commission, which recommended the creation of six new college houses, most to be located in the Quadrangle. This recommendation was carried even further by a plan, approved by the Trustees in October, 1973, to convert all the undergraduate low-rise residences into college houses. While plans were being developed for the conversion of the Quadrangle to college houses, programs were installed in Stouffer, Hill and Low Rise North (the Dubois project). Smaller experimental programs were also developed last year in modern languages in the Class of 1925 House and this year in the arts (Harnwell House), Japan (Harrison House), and international living (Harnwell House). In all, the college house and related programs include some 1212 students, or 24 percent of the undergraduate student body in University residence. The college houses have been successful in part because of the remarkable leadership of the faculty masters: Richard Solomon, Skinner Professor of Psychology, and Joel Conarroe, Professor of English, in Van Pelt; Howard Arnold, Associate Professor of Social Work, in Dubois; Joseph Bordogna, Professor of Electrical Engineering, in Stouffer; Peter Conn, Associate Professor of English, in Hill; and Andre Von Gronicka, Professor of German, in Modern Language House.

Next year, we hope to have the first of the new Quadrangle houses in operation as a first step toward the renovation and conversion of the historic Quadrangle. The new house will

FACULTY

Fully-Affiliated Assistant, Associate,
and Full Professors by School, 1970-71 through 1974-75

	70-71	71-72	72-73	73-74	74-75
Allied Medical Professions	9	9	10	11	11
Annenberg	11	10	10	10	10
Arts and Sciences	500	486	498	502	518
Dental Medicine	46	48	57	65	73
Education	33	36	38	35	31
Engineering & Applied Science	93	85	86	84	88
Fine Arts	39	40	36	36	34
Law	28	23	26	27	26
Medicine	445	462	484	512	559
Nursing	6	6	6	7	12
Social Work	23	26	29	27	25
Veterinary Medicine	84	89	89	89	93
Wharton	107	98	100	114	137
TOTAL	1424	1418	1469	1519	1617

Figures include faculty supported in part or in whole by external sources, some of whose tenure or contracts are limited to the duration of those sources. Figures do not include faculty below the rank of assistant professor, although such faculty play an important teaching role in some schools such as Nursing and Allied Medical Professions. Some increases in numbers (e.g., in the Schools of Nursing and Medicine) reflect reclassification or promotion of instructors or associates to assistant professors or to fully-affiliated status. Wharton and Arts and Sciences have been adjusted to reflect the current departmental composition of those schools.

have an arts theme. A second house, to be developed around the theme of health and society, is well into the planning stage, and a prototype program around this theme will begin next year in the High Rises. Ten and one-half million dollars for college houses are being sought as part of the Program for the Eighties.

Pennsylvania-Edinburgh Exchange. Pennsylvania now has an agreement to begin a major exchange program with Edinburgh—the old world university which served as our principal model and mentor during our founding years two centuries ago. Our aim is to tie the two institutions together in such a way that many undergraduates, graduate and professional students, and faculty at each university will see in the other a place where they should normally expect to spend some time. With the help of Professor Richard Lambert, head of our International Programs Office, and others, we hope to make it possible next year for some honors undergraduates at Pennsylvania to spend a semester or a full year at Edinburgh—while enrolled here and continuing normal progress toward the baccalaureate. In turn, Edinburgh students would take courses here as part of their regular degree programs. The start of this program, which goes far beyond the conventional “year abroad” exchange, has been made possible by a Venture Grant from the Ford Foundation and by support from a friend of the University in Britain.

The Pennsylvania-Edinburgh program is but one of our international associations, all designed to further a sense of the world throughout the University at a time when higher education is generally (and tragically) abandoning its international character. Our long-standing ties to Pahlavi University in Iran were continued during the past year, particularly in the health area. A Pennsylvania-Israel program has been begun with major impetus from Professor Norman Oler. Students and faculty exchanges with Israeli universities are under way. Other significant exchanges are with the University of Compiègne in France and L'Aquila University in Italy.

The chateau La Napoule in France has been made available to the University and will serve as the center of continuing education for our European alumni who have formed themselves into an association they have titled EUROPEAN.

The Faculty

During the past half decade, twenty new faculty chairs have been added, including: in the Arts and Sciences, the Rhodes-Thompson Professorship of Chemistry, the Tarzian Professorship in Armenian History and Culture, the Watkins Assistant Professorship in the Humanities, and the Bers Assistant Professorship in Social Sciences; in Wharton, the Young Professorship of Accounting and the Hower Professorship; in Engineering, the Ennis Associate Professorship of Electrical Engineering and the 1907 Foundation Professorship of Transportation Engineering; in the Law School, the Gemmill Professorship of Tax Law and Tax Policy; in Medicine, the Bellet Assistant Professorship of Cardiology, the Magnuson Professorship of Bone Surgery, the Mudd Professorship in Obstetrics and Gynecology; in Veterinary Medicine, the Jenny Professorship of Orthopaedic Surgery, and the Mellon Professorship in Veterinary Medicine. Also, the Kenan and Greenfield chairs were filled for the first time. Perhaps no single device is so effective in attracting and rewarding top faculty as these chairs. Our aim in the five years of the Program for the Eighties is to add at least 50 chairs for both new and existing faculty.

For a large, diverse urban campus one of the greatest challenges is to create a sense of intellectual collegiality among faculty of disparate academic pursuits, most of whom live far from the campus and far from one another. One effort toward creating such a sense is the President's Lecture Series begun in 1974-75 to bring members of the academic community together to learn about and discuss the work of some of our most distinguished colleagues. Daniel Hoffman, Professor of English and Consultant in Poetry to the Library of Congress (1973-74), inaugurated this series in October, 1974, with a lecture on his work entitled “Others: Shock Troops of Stylistic Change.” The lectures and discussions surrounding this series have been occasions not only of learning about a new topic, as all good lectures should be, but also of learning more about ourselves and about colleagues whom we meet too rarely for the sheer love of ideas and lively interchange.

Major honors to our faculty are almost too numerous to be cited and are noted in other publications. I should point out however, that in 1973 three members of the University family, Professor Robert Schrieffer of Physics and two alumni, Christian Anfinsen of the National Institutes of Health and Gerald Edelman of Rockefeller University, received Nobel prizes. All were awarded honorary degrees by the University as well that year. Professor Britton Chance was awarded the President's Medal of Science for 1974 by Gerald Ford, the first received by a member of our faculty. Also in 1974, eleven faculty members received Guggenheim Fellowships (the largest number ever). Last year, five members of the University of Pennsylvania faculty were elected to the National Academy of Science, again the largest number in a single year for our University.

Between 1970 and 1975, our faculty salary levels were increased from a point near the bottom of comparable independent institutions to one near the top. Unfortunately, that progress has been eroded in the current fiscal year.

Women and Minority Faculty

Along with—and in every way reinforcing—our quest for the most able faculty has been our effort to broaden the faculty to include more women and minority group members. In 1971,

a committee headed by Professor of Biochemistry and Biophysics Mildred Cohn issued a report on the status of women at the University. The findings were the same as those reported in nearly all major universities: that there were fewer women in both academic and administrative ranks than availability would suggest, and that the women we had were found disproportionately in junior academic and administrative positions. The number of minority group members was almost small enough to count without a formal report, and constituted at least as great a challenge. The Provost and I committed ourselves to working to increase the numbers of both women and minority-group members in the University. With the help of many—including, to name only a few, James Robinson, Administrator of the Office of Equal Opportunity; Gerald Robinson, Executive Director of Personnel Relations; Professor Anna-Marie Chirico, head of the Academic Committee on Equal Opportunity in 1974-75; Phillip Delacy, Chairman of the Senate in 1974-75; Professor Phoebe Leboy; James Davis, Executive Assistant to the Provost; and Donald Stewart and Bruce Johnstone, my two Executive Assistants, we became the first university in our region to have an Affirmative Action Plan approved by the Department of Health, Education, and Welfare.

More important than a plan, of course, is accomplishment. In the last few years there has been considerable progress in increasing the percentage of women at both tenured and tenure-accruing ranks at the University. Women have moved from 10.4 percent of the total tenured and tenure-accruing faculty in all schools in 1970-71 to 13.1 percent in 1975-76, and from 4.3 percent of the tenured faculty in all schools in 1970-71 to 8.2 percent in 1975-76. Between 1970-71 and 1975-76, the male faculty in tenured and tenure-accruing rank increased by 62—a net increase of 4.3 percent. During this same period, the female faculty in those ranks increased by 58—a net increase of 34.5 percent.

A woman was appointed for the first time to a named chair in 1972 when Professor Lila Gleitman took the Carter Chair; later, Professor Adele Rickett became the Watkins Assistant Professor, Professor Irene Pernsley was installed in the Pray Professorship, and this year Professor Dorothea Jameson Hurvich became a University Professor. As chairman of the sociology department, Professor Renee Fox became the first woman chairman in the Wharton School and then in the Faculty of Arts and Sciences. In addition, as Dean of the School of Social Work, Louise Shoemaker is the first female dean of that school; and as Vice-Provost for Undergraduate Studies and University Life, Patricia McFate is the first female vice-provost at the University of Pennsylvania.

Progress toward more minority group faculty has been less satisfying. John Wideman, formerly Associate Professor of English and first Director of the Afro-American Studies program vividly described the need for a "Black Presence" at the University in 1972. Recruitment of Black faculty by Provost Eliot Stellar and the deans was aided by a special committee headed in 1973-74 by Professor Robert Engs and since then by Professor Houston Baker.

Since 1972, there has been a net increase of seven in the number of Blacks in tenured or tenure-accruing faculty ranks—from four full, six associate, and seven assistant professors in 1972 to six full, seven associate, and eleven assistant professors in the current year. The total number of appointments has been slightly higher, of course, as some have left the University. In addition, there have been increases in visiting and adjunct professorial ranks. Most satisfying was the achievement last year of the new Faculty of Arts and Sciences, which made seven new appointments for this fall of Black faculty members—three visiting, two adjunct, and two assistant professors. Also, in administrative ranks Blacks have been named to such posts as Associate Dean of the Faculty of Arts and

Sciences and Director of the College of General Studies, Vice-Dean of the Law School, Assistant Dean of the School of Social Work, Director of Wharton Graduate Admissions, Director of Personnel Information Services and Assistant Comptroller, Associate Dean of Students, Director of Recreation, and Director of the Community-Wharton Evening Program. There is no question but that these numbers should be higher and that our commitment must be maintained in spite of some progress and of the declining number of faculty appointments available to us.

The Library

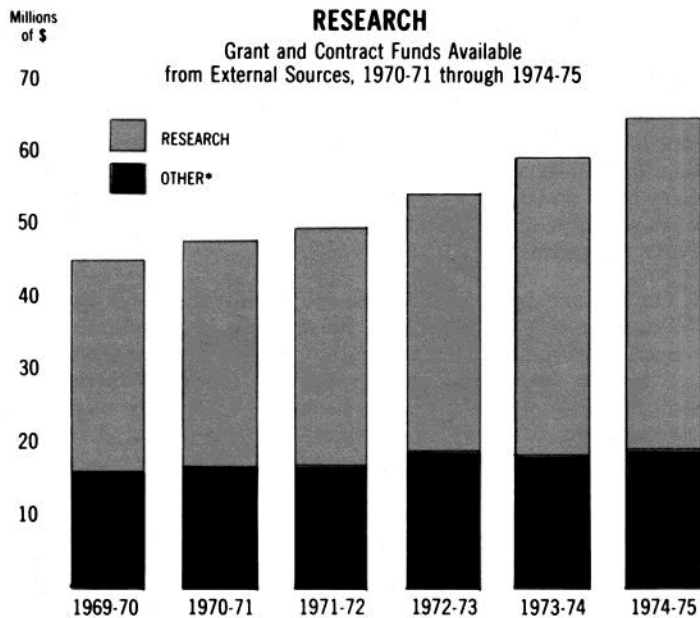
At the heart of any great research university must be a great library. Our library system includes over two and one-half million volumes and nearly a million microform items, used by over 5000 scholars and students a day. Among its special collections are the Horace Howard Furness Memorial Library of Shakespearean and Elizabethan drama, the Henry Charles Lea Library of Medieval and Renaissance History, the Edgar Fahs Smith collection in the History of Chemistry, and over 75,000 rare books and manuscripts.

In my first annual report of January, 1971, I identified the library as the single operation of the University that I intended to exempt from that year's budget cuts, and in fact to provide an increase. In the decade from 1960 to 1970, the University of Pennsylvania Library had slipped from the 10th to the 19th largest university library in total number of volumes. Most of this slippage was due to the rise in the 1960s of a number of growing state-supported universities' libraries. But it was obvious also that we were simply not keeping pace with the annual flow of vital new periodicals, books, and other materials.

Between 1970 and 1975, when the last survey was conducted, we have managed at least to hold our own. Our rank is slightly up, to 18th among university libraries. Total library expenditures rose during this period by 43 percent. Library expenditures also rose as a percent of the core academic budget (instruction, departmental research, and sponsored research) from 3.7 percent to 5.0 percent—a significant increase.

However, during that same period the costs of periodicals, books, and (due in part to devaluation) materials from foreign sources have risen even faster, thus eroding the real purchasing power of our library acquisition budget. Under the leadership of Library Director Richard DeGennaro, efforts have been taken to cut the non-acquisition costs and to provide more accessions to the library. We are also taking greater advantage of cooperative efforts. In 1973, we joined the Center for Research Libraries, a library's library from which can be obtained a wide variety of lesser-used materials, including an increasing number of microform collections. It provides access, through its own resources and those of the British Library Lending Division, to a large and growing number of periodicals in the sciences and the social sciences. Our library also helped establish in 1972 PALINET, a regional library network that is linked with a similar network in the Midwest.

However, the increasing volume of new books and periodicals essential to scholarship and the persisting inflation in their costs mean that more resources must be found to maintain and enhance the University Library. We will continue to favor the library in resources we can supply from unrestricted funds. But we need new resources and we need to begin to provide a base of endowment for library acquisition. We have earmarked \$8 million for the library in the Program for the Eighties. That amount will be difficult to raise, but it is among the most important of our fund-raising goals and we shall strive to surpass it.



*Includes training grants, career development awards, etc.

Research

The University of Pennsylvania is a research university. Contribution to knowledge is an expectation of every school, department, and faculty member. Training in research is the heart of our Ph.D. programs, and occupies a major role in our advanced professional programs. Undergraduates, too, are increasingly becoming engaged not simply in reading or hearing about new knowledge in their fields, but working with their professors as they create it.

Research is too much a part of all we do to attempt even to summarize the contributions that our faculty have made over the past five years. We can, however, gain some appreciation of the University's scholarly activity by looking at the trends in our outside research support. External support is only a partial measure of faculty research activity. A great amount of research is properly supported by the University. In some fields, little outside money is available. Often, little outside money is needed as long as the faculty member has time for research, access to the library, and the support of other University services. But the volume of externally funded research is a measure of how foundations, government agencies, and other sponsors view the scholarly potential of our faculty in certain fields as against other universities also seeking these limited funds. Externally funded research also provides financial resources for the support of faculty activities and graduate students.

In fiscal year 1975, available grant and contract dollars totaled \$46.6 million for research and another \$18.3 for related training grants, career development awards, and aid—a total of \$64.9 million in external support of scholarship. Total grants and contracts increased 43 percent from 1969-70 to 1974-75; the research component alone increased over this period by 58 percent. Although most of this increase has been absorbed by inflation, contract and grant support has increased by about 12 percent in constant dollars. And during the four years from 1971-72 through 1974-75, when federal support of basic research at universities increased by only 23 percent, our support was up by over 40 percent.

Thus, in spite of inflation and in spite of a diminution of federal support of research, Pennsylvania has done well over the past half decade. Moreover, the trend appears to be holding. New awards in fiscal year 1975 were up 9 percent over the pre-

ceding year. And new awards in the present fiscal year, as of January 1976, were running 25 percent ahead of the same period last year. These trends vary, of course, by school. Wharton grants and contracts have risen substantially. Medicine, Engineering, and Dental Medicine have been very strong. Veterinary Medicine has also increased its external research support. The Faculty of Arts and Sciences has maintained its dollar volume, but not quite kept up with rising costs.

In short, the resources available for research have, for most schools, been expanding during a period when most universities have suffered at least a real, and often a current dollar, decline. This strength is a tribute to both the quality of the faculty and to the leadership exercised by the deans, department chairmen, and heads of centers and institutes.

Environment

The work of creating a more attractive and liveable physical environment goes on. New shops have been built beyond 38th Street, and some of Walnut Street west of 34th Street has been cleared. Certain essential new buildings are under way. The campus has been enlivened by a gathering of the well-known R. Tait McKenzie bronzes of athletes into the Jones Gallery at Gimbel Gymnasium, and by the University's buying a number of outdoor sculptures under its obligation to spend one percent of the costs of all building financed by the Redevelopment Authority on works of art. The Visual Environment Committee, headed by Mrs. H. Gates Lloyd, purchased under this obligation a sculpture by Tony Smith and one by Alexander Liberman. A sculpture by Harry Bertoia was chosen by Trustee Walter Annenberg to decorate the upper and lower lobbies of the Annenberg Center. *Face Fragment* by Arlene Love has been donated to the Monell Center by Mrs. Philip Kind.

The University's Institute of Contemporary Art, supported largely by benefactors and by its own programs, provides the campus and the entire Delaware Valley with some of the newest forms of visual art. In addition to exhibitions, the ICA organizes children's programs, film series, and lecture series.

The Annenberg Center has presented the campus with outstanding theater, and has undertaken the well-known INTERACTS program of bringing the campus and the community into contact with visiting artists in before- and after-performance discussions, special workshops, and other gatherings. The Annenberg Center also sponsors Cinematheque to show important world cinema, a Black film festival, and professional space and staff for student productions, workshops, and communications festivals.

The University Museum maintains one of the great archaeological and ethnological collections, and strives increasingly to make those collections more accessible to the entire Commonwealth.

Organization

Major changes have been made in the past five and one-half years in the organization and administration of the University, both centrally and in the schools. Some of these changes stemmed from the Report of the Task Force on Governance, which was chaired by former Law Dean Bernard Wolfman and which delivered its report at the time I took office.

Probably the most significant of these changes—surely the most difficult to bring about—was the creation of the Faculty of Arts and Sciences. Last academic year, the Faculty was established and its first dean, Vartan Gregorian, appointed. It brought together the departments formerly administered under the old College and the Graduate School of Arts and

Sciences plus the social science departments from the Wharton School. At the same time, the advising, registration, and other student services that had been separated into the College and the College of Liberal Arts for Women were brought together into a unified undergraduate support system headed by Dean R. Jean Brownlee.

A similar consolidation took place in Engineering. Over the years, four separate schools and four separate faculties had emerged in engineering, held together by a Vice-President for Engineering Affairs. In the spring of 1972, Arthur Humphrey was made dean of a unified Faculty of Engineering and Applied Science, now reorganized into eight departments, three of which retain the name of the Moore School.

Another major reorganization was the separation of the hospitals from the School of Medicine. A new Director of Hospitals, Mark Levitan, was appointed to administer both the Hospital of the University of Pennsylvania and the Graduate Hospital, and steps were begun to transfer Graduate Hospital to a new community board to be affiliated with, but no longer a part of, the University of Pennsylvania.

A School of Public and Urban Policy was established in the summer of 1974. It was formed around the teaching and research programs of the Fels Center for Government, but is intended over time to serve as a coordinator of policy-oriented programs cutting across many schools. The new school formally is part of the Wharton School, and draws most of its faculty from other departments and schools. Almarin Phillips, Professor of Economics and Law, is the school's first dean.

Other new deans in the past two years include Louis Pollak in the Law School, Dell Hymes in the Graduate School of Education, and Edward Stemmler in the School of Medicine. Appointed earlier in my administration were Peter Shephard in the Graduate School of Fine Arts, Walter Cohen in the School of Dental Medicine, Donald Carroll in the Wharton School, Arthur Humphrey in the Faculty of Engineering and Applied Science, Robert Marshak in the School of Veterinary Medicine, and Louise Shoemaker in the School of Social Work.

I formed a Council of Academic Deans in 1971 to meet regularly with the Provost and me and other members of the central administration. The purpose in part is to further communication between the deans and the Provost and me—for us to hear their common concerns and to discuss with them University policies. The purpose is also for the deans to talk to each other about University-wide matters that transcend the immediate concerns of their schools and faculties, and to bring about an increasing sense of "corporate responsibility" on the part of our key academic leaders.

The central administration has also changed form and faces. Two vice-provostships were re-formed: a Vice-Provost for Undergraduate Studies to coordinate the efforts of the undergraduate schools, and a Vice-Provost for Graduate Studies and Research to oversee Ph.D. and advanced professional programs and to guide the University's research efforts.

Both posts have evolved. Drawing on recommendations of a Report on University Life, which was endorsed by the University Council, the new post of Vice-Provost for Undergraduate Studies and University Life was created to combine the functions of the Vice-Provost for Undergraduate Studies and the Dean of Students—the latter post having replaced what had once been a Vice-Provost for Student Affairs. In turn, some of the academic programs and services for undergraduates that had been administered centrally were turned over to the newly established Faculty of Arts and Sciences. Former Dean of Students Alice Emerson has left for the presidency of Wheaton College, and former Vice-Provost for Undergraduate Studies Humphrey Tonkin has returned to the English depart-

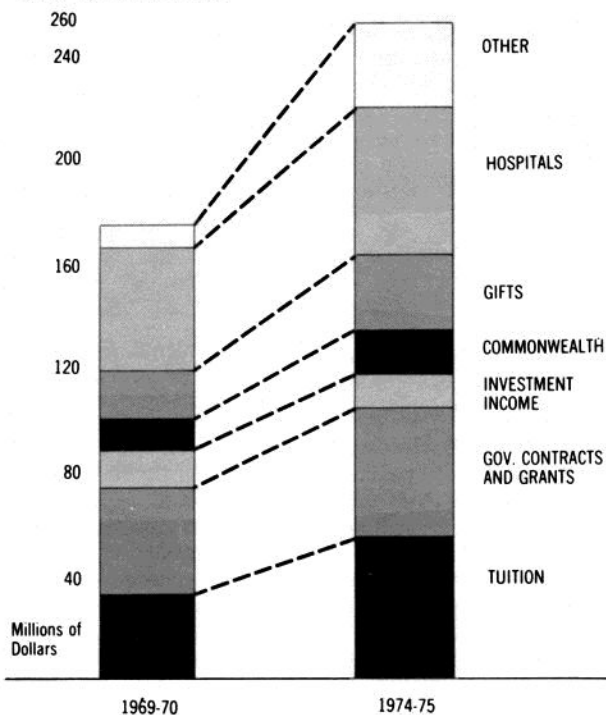
ment. Patricia McFate, who comes to us from the University of Illinois, has assumed the large portfolio and the somewhat unwieldy title of Vice-Provost for Undergraduate Studies and University Life. Donald Langenberg, Professor of Physics and former Director of the Laboratory for Research on the Structure of Matter, was appointed to the post of Vice-Provost for Graduate Studies and Research. Along with Dean Vartan Gregorian and Provost Eliot Stellar, he is concentrating on ways to improve quality and to better use our resources in all Ph.D. programs.

On the management side, the major organizational change—one that was recommended by the Task Force on Governance—was the creation of a Senior Vice-President for Management to oversee the entire range of supportive operations including comptrollership, maintenance of the physical plant, management of auxiliary services, personnel, and management information systems. Paul Gaddis, formerly a vice-president of Westinghouse, assumed this post early in 1972. Another recent key appointment in the management area is Fred Shabel, former Director of Intercollegiate Athletics, now Vice-President for Operational Services in charge of the offices of Physical Plant, Personnel, Security, and Auxiliary Services. This fall William Owen, former Secretary of the Corporation, was made Vice-President for Development and University Relations to complement the work of Craig Sweeten, Senior Vice-President, Program for the Eighties. In all of these organizational changes and appointments, our aim has been to upgrade the services rendered to the academic missions of the University while getting the most from our human, physical, and financial resources.

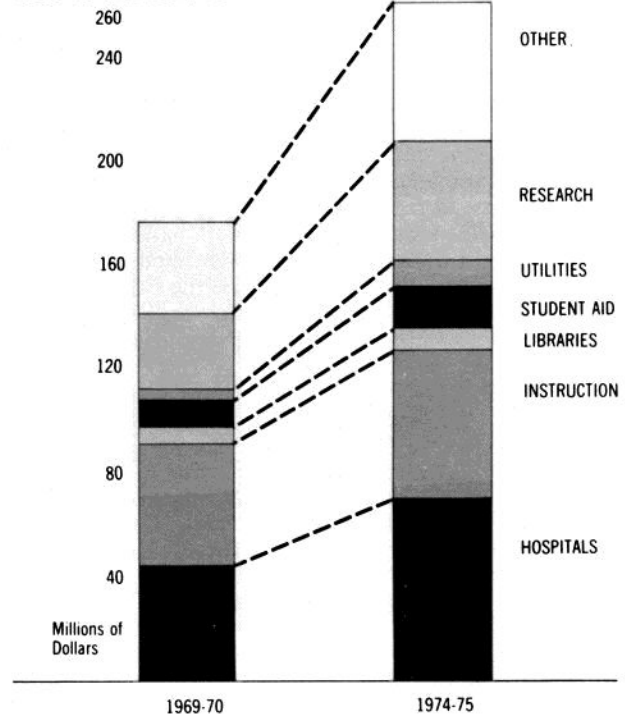
Our Trustees are men and women who bring to the University an extraordinary level of devotion, knowledge of Pennsylvania, and wisdom about the mission of a great university. We have, I believe, the strongest board of any university in the country. This is so in large part because they have chosen to support Pennsylvania not simply financially—although their financial support has been magnificent—but through involvement in the ongoing concerns of the University. In matters of fund-raising and alumni relations, investments, financial stewardship, budgets, Commonwealth relations, the hospitals, and others, they have given experience and wisdom in addition to time. It is a fortunate University that has a Donald T. Regan, a Robert G. Dunlop and a Thomas S. Gates bringing to its three chief roles on the board the same energy and foresight they have given to leading Merrill Lynch & Company, the Sun Oil Company and the Morgan Guaranty Trust Company—and to have a John W. Eckman as chairman of its Campaign Operating Committee of the Program for the Eighties.

This leadership has been made even more effective in recent years by a number of changes in Trustee composition and organization. Where there were no women Trustees in 1970, now there are five. Two Young Alumni Trustees were added in 1971, and have brought an invigorating contemporary perspective to the board. Drawing on our own Trustees, but also on other distinguished leaders, we have been creating Boards of Overseers for our schools: for Wharton, chaired by Trustee Reginald Jones; Engineering and Applied Science, chaired by Trustee C. B. McCoy; Social Work, chaired by Mrs. Anderson Page; Veterinary Medicine, chaired by J. Maxwell Moran; Graduate School of Fine Arts, chaired by Trustee Marietta Tree. Formation of our newest Board of Overseers, for the Faculty of Arts and Sciences, is now in progress under the leadership of Tom Gates. Through these boards and others to come, we hope to strengthen ties between our schools and those distinguished men and women who are leaders in the worlds to which the schools must relate.

**CURRENT REVENUES BY SELECTED CATEGORIES
1969-70 and 1974-75**



**CURRENT EXPENDITURES BY SELECTED CATEGORIES
1969-70 and 1974-75**



Finances

The Financial Dilemma of Higher Education

Over the past half dozen years, American colleges and universities—and particularly the independent ones—have been preoccupied with financial troubles. Sadly, the immediate future promises little relief.

The costs of higher education have been increasing like costs everywhere. Unlike much of the capital-intensive, goods-producing sector of the economy, we can rarely hold down our unit cost increases by the substitution of capital for labor. Because wages and salaries generally increase a bit faster than prices (the difference, of course, reflecting productivity gains that increase real per capita income), it follows that unit costs in education and other service sectors will rise faster than unit costs and prices in the economy generally. Prior to the 1960s, unit costs in higher education rose about 2.5 percentage points above the prevailing rate of inflation. In the 1960s, costs in higher education rose much faster than that.

Sources of income to colleges and universities have failed to keep pace with costs and thus have necessitated cuts. Nationally, the real academic purchasing power of federal research support has declined in the past five years. Income from endowments has declined in many cases in actual dollars—and much more, of course, in real purchasing power and in proportion of college and university income. State support, as in our case, has generally failed to keep up with inflation. One result has been great pressure upon tuitions and fees not only to keep pace with costs, but also to take up some of the gap left by the failures of other traditional revenue sources to keep up with costs. However, the ability of higher education—particularly the private sector—to cover increased costs with increased tuitions is limited by the demand side of the market. The postwar birth rate that fueled the expansion of the 1960s is over; the traditional pool of well-qualified 17- and 18-year-olds on which many colleges depend has already stabilized, and will soon begin to decline. Furthermore, the value of a college education has declined in the eyes of at least some

young people. Also, the effects of the current recession and the continuing price disparity between the public and private sectors has led to a shift in demand away from private colleges to lower-cost public institutions. These factors have affected, and will continue to affect, Pennsylvania less than most other institutions; but we must recognize the demographic and other changes that very likely will limit the revenue increases possible from students and their families.

All of this means, very simply, that while tuitions will continue to rise in the private sector at a rate about equal to, or in some cases slightly higher than, the rate of increase in costs, only the most attractive institutions will be able to maintain both the number and quality of students required to meet both financial and academic needs. It is essential Pennsylvania be in that category.

In view of this overall financial picture for higher education, the University of Pennsylvania has both advantages and disadvantages. On the positive side, our enrollments and our tuition revenue have been holding with no observable diminution in the quality of the student body. We remain a selective institution. And certain of our particular strengths in advanced professional education—such as in law, health, management—have been strong assets in the shifting demand of students for entry into such programs. Research and training grants have continued to increase—even faster than costs, which is not so at many other institutions. In addition, our gifts from alumni, foundations, and friends have remained strong. It is true that many of these gifts are for restricted purposes which carry additional costs and thus bring no relief to the core University budget, but the annual increases in gifts give us the greatest hope for the Program for the Eighties, much of which will provide needed budgetary relief and finance new opportunities for us.

At the same time, we have vulnerabilities. Our support from the Commonwealth, while essential and a model of public support to an independent university, makes us heavily dependent on the State for unrestricted income. Between fiscal 1969-70 and fiscal 1974-75, for example, prices rose some 36 percent, but the Commonwealth appropriation rose by only 24 percent,

reflecting a real decline in state support. We own and operate two hospitals, and hospitals have been among the most financially troubled of all institutions in recent years. We have made remarkable strides toward turning around the financial situation at least in the Hospital of the University of Pennsylvania, and we are close to an arrangement in which Graduate Hospital will become independent of the University but the ownership of a large teaching hospital (and, we might add, a large and a small animal clinic as well) will continue in the near future to constitute at the least a vulnerability. Finally, we are substantially underendowed for a major national research university and must draw heavily on unrestricted income from such sources as tuition, annual giving, and the Commonwealth for the support of financial aid and for long-range commitments to tenured faculty—both of which are supported heavily by endowment at other universities.

On balance, the University of Pennsylvania is in a somewhat stronger financial position than private higher education generally. With the hoped-for success in the Program for the Eighties, with continued strengthening in the finances of the hospital, and with improved budget setting and control, we can achieve a long-run financial stability. However, continuing inflation, a failure of the Commonwealth to increase its support, or an inability to maintain tuition revenue could again upset the fiscal balance we have worked so hard to achieve.

Financial Trends

Let us turn at this point to some indices of our financial fortunes over the past five years. The University doubled its operating expenditures from 1960 to 1965, and doubled them again from 1965 to 1970. The first half of the decade of the 1970s has seen much slower growth—and slower still if the effects of inflation are discounted and growth measured in real terms. In the years covered by fiscal 1969-70 through fiscal 1974-75:

- Total operating expenses of the University, including the hospitals, have risen from \$176.8 million to \$259.2 million—an increase of 46.6 percent. Operating expenses less the hospitals have risen from \$130.5 million to \$191.7 million. Expenses for instruction only have risen from \$48.7 million to \$62.4 million, or about 28.1 percent.
- Within this increase in expense are increases on the main campus in the costs of energy (steam and electricity) from \$2,325,000 to \$9,037,000 (almost 300 percent); in library operations and acquisition from \$3,100,000 to \$5,252,000 (about 69 percent); in total student aid from all sources, from \$10,800,000 to \$14,406,000 (about 33.4 percent); and total wages and salaries from \$96,211,000 to \$134,666,000 (about 40 percent).
- Of our principal sources of income, tuition and fees from 1969-70 to 1974-75 increased from \$32,856,000 to \$54,154,000 (or 64.8 percent); funds from federal sources from \$42,025,000 to \$53,668,000 (or 27.7 percent); income from investments declined from \$11,524,000 to \$11,130,000 (a decrease of 3.4 percent); appropriations from the Commonwealth rose from \$12,100,000 to \$15,060,000 (or 24 percent) and gifts and grants rose from \$18,839,000 to \$24,540,000 (or 30 percent). Most worrisome of these income sources has been the income from investments, which would have been even lower but for our taking portions of capital gains in recent years, and the Commonwealth appropriations, which have failed to keep pace with increasing costs, not to mention the increasing scale of University operations.
- After application of certain gifts that might otherwise have been placed in endowment and certain sales of property, the University ran operating deficits in five out of the past six years of \$2,328,000 in 1969-70; \$1,254,000 in 1970-71; \$2,087,000 in 1971-72, a small surplus of \$11,000 in 1972-73, and deficits of \$211,000 and \$3,297,000 in fiscal years 1973-74 and 1974-75. Our accumulated deficit, exclusive of the high-rise dormitories and the hospitals at the close of the last fiscal year June 30, 1975, stood at \$7,553,000.

The Allocation and Control of Financial Resources

The figures above illustrate our financial difficulties throughout the past five and one-half years. We succeeded in the course of three years in reducing our bank borrowings and in bringing expenditures and revenues into balance. Last year, fiscal 1975, we again operated at a large deficit; this year, we intend to end up with a balance. However, the degree to which we succeed in bringing revenues and expenditures into line in the current fiscal year will be attributable in large part to factors which do not reappear in fiscal 1977. Salaries and wages this year are lower than they might otherwise have been due to the deferral of wage and salary increases to January 1, 1976. (Our faculty and staff lost considerable ground in real compensation this year.)

In the light of continuing financial problems, let us look at some of the achievements and failures of the past five years in better allocating and controlling our resources.

Responsibility Center Budgeting. Prior to fiscal year 1973-74, the total University income projected for the fiscal year was allocated to the various schools, offices, and departments as direct expense authorization. No account was taken of the full costs—direct and indirect—of programs. Little or no account was taken of the degree to which schools generated income to support their programs or conversely depended upon support from otherwise unrestricted funds of the University. We had no way of determining real trade-offs—i.e., the degree to which more or less of one activity could be translated into less or more of another. And except for the obvious pressure on the central administration, there was little incentive on deans and faculty members to bring in new revenue; if anything, in fact, incentives were to maximize one's dependence on unrestricted funds.

Responsibility center budgeting, first introduced in preparation for the 1973-74 fiscal year, cannot itself make up for the income/expense gap that underlies our financial difficulties. And the responsibility center system has some problems of its own, including a need for financial information that has, until very recently, been beyond our capability to provide. But it addresses many of the weaknesses inherent in the former system of budgeting, and it provides a valuable tool for the allocation of University resources. The principle of responsibility center budgeting is simple. All expenses are apportioned to the responsibility centers—mainly the schools. The direct costs, of course, are the salaries, benefits, and current expenses under direct control of the center. The indirect costs are the centers' shares of the costs of general administration, student services, libraries, energy, and the like. The centers are then given "earned income"—from tuition, research grants, restricted funds, and earmarked gifts—and a share of the University's wholly unrestricted general income. All costs, direct and indirect, must be covered by attributed income plus the share of the University general income. The major benefits of responsibility center budgeting are four.

1. Full costs are revealed, at least at the school level and increasingly at the departmental and program level.
2. Reliance of a school (or a department or a program) on general University income is also revealed. The relative shares of general University income then call for some justification: for example, on the basis of inherently high or low teaching costs, or external benefits to other parts of the University, or the kind of quality that merits strong central financial support in spite of high costs and low income potential.
3. Deans, directors, and other responsibility center heads have an incentive to decrease their reliance on general University support and to increase their own revenues from tuition, grants, gifts, and other sources. Such an incentive, if fruitful, increases the net resources available to the University; it has also the effect in most schools of making the student, particularly the undergraduate, a resource to attract.

4. More responsibility for resource allocation is passed to the deans, who ought generally to be closer to strengths, weaknesses, and needs of their schools than the central administration. If a school has new needs, they may be supported by cutting activities of lower priority or securing new resources.

The benefits of responsibility center budgets have not come without problems. Some of these have been the inevitable technical problems of a new system. In many cases, we found ourselves unable to provide the kinds of accurate information needed by the responsibility centers. And the rules of the game (e.g., the way a certain indirect cost is allocated among centers) have had to be modified frequently in the initial period, each time creating added work, and sometimes unhappiness.

A more serious problem is the tendency of responsibility center budgeting to encourage a preoccupation with formulas, subventions, and other technical artifacts of the system rather than with the academic priorities upon which budgets must be based. Also, the awareness of tuition as a significant financial resource has at least a potential for encouraging the erection of academic trade barriers among schools. And finally, more complete and open knowledge of the full costs of schools and programs and of their quite different relative dependence upon central University resources has raised many questions—tough and proper questions that ought to be addressed in any university, but questions that can lead initially to unhappiness and even hostility. For example, what ought to be the cost per course in a program like, say, Law or Wharton Graduate as opposed to Graduate Arts and Sciences? What ought to be the costs for freshman English and history as opposed to senior physics and materials science? To what degree should high cost, centrality, and excellence justify a high dependence on central university resources as opposed to current income from teaching and research?

Much of the unhappiness directed at responsibility center budgeting comes from those who are being forced to cut back expenditures (as all units are, having nothing whatsoever to do with the budget system) and who believe (quite rightly) that many or all their problems would be solved if only they were to receive more of the pie—and someone else, of course, were to receive less. The budget system bears the news both of our limited university resources and of the way those resources are being allocated among competing users. And when the news is bad or surprising, as it often is, the bearer, as in days of old, may receive the wrath of those to whom the news is brought. But we are beginning not only to pose the questions but to answer them and to allocate our scarce resources accordingly. And in so doing, we are beginning to make budgets more and more our servants rather than our unseen masters.

More Effective Comptrollership. A budget allocates projected resources. But once allocated and the fiscal year begun, the Comptroller must maintain the integrity of that budget. Spending—over \$250 million worth from literally thousands of accounts—must be carefully monitored. A budget is an estimate. In fact, it is a summary of hundreds or thousands of estimates of both costs and revenues. The task of the comptroller is to monitor our financial performances and detect deviations from the expectations of the budget. When resources were more ample, deficits in some units could be more easily covered by surpluses in others at the end of the fiscal year. In a difficult financial situation, departures from the budget are less easily repaired. Furthermore, the installation of responsibility center budgeting imposed a whole new set of demands upon the comptroller's office, such as monitoring of income by schools as well as on a University-wide basis, and these demands led to some mistakes. However, with the installation of a new fund accounting system, by a revised payroll/personnel system this year, and a resolution of many

of the problems in responsibility center accounting, we have made great strides in acquiring the tools of better financial management.

Management of the Hospitals

No single financial problem in recent years has been so serious as the financial deterioration of the University-owned hospitals. Beginning in about 1970, the gap between hospital income and expenses widened alarmingly. By 1972, Graduate Hospital exhausted all of its reserves, and the Hospital of the University of Pennsylvania was projected to exhaust its reserves in a few years. In the absence of reserves, hospital deficits move directly onto the University deficit, and the prospect of the University literally bankrupted by its hospitals was one which, however frightening, we had to face.

In July, 1974, Mark Levitan was appointed Executive Director, University Hospitals, reporting to Vice-President for Health Affairs Thomas Langfitt. This position established a common administrative responsibility for both institutions, and subsequently resulted in a number of significant changes. The administrative structures were simplified, and a major program of cost reduction and revenue improvement was undertaken. As an indication of the success of these programs, reductions in staff at the Hospital of the University of Pennsylvania were approximately 10 percent, and at Graduate Hospital in excess of 20 percent, both accomplished without decreasing the level of care. Other steps were taken to improve the service levels and reimbursement, including the negotiation of a new contract with Blue Cross of Greater Philadelphia, and the replacement of two existing computer systems with a new computer service. Steps were taken to reduce a major source of loss in the outpatient area by transferring the clinic activity to physician responsibility.

As a result, during fiscal 1975 the deficit at the University Hospital was reduced to \$91,000 compared to \$1,233,000 for the previous year. At Graduate, we were not so fortunate. There we suffered a combined loss for the fiscal years 1974 and 1975 of almost \$3.9 million. However, for the current year at Graduate, the deficit is projected to be approximately \$450,000.

In addition, through the office of the Vice-President for Health Affairs, a study was undertaken to determine the future role of the Graduate Hospital. As a result of that study, a plan was adopted whereby the institution will be reorganized as an independent entity with a teaching affiliation with the University. The implementation of this plan is well under way, with the appointment of an Initial Board of Directors, who represent members of the community interested in the Hospital.

Another indication of our financial improvement at the University Hospital was our ability to successfully market \$34 million in hospital revenue bonds. A financial feasibility study performed in connection with this offering demonstrated that the Hospital of the University of Pennsylvania, under its current management, is capable of repaying from its own resources this debt for necessary new facilities.

Staff Relations

Full- and part-time faculty and staff, excluding the hospitals, last year numbered over 13,000, of whom just under half are full-time. The Hospital had an additional 2,000. Federal, state, and local governments have made new demands for purposes of affirmative action, pensions, and other regulations. Any of our faculty and staff can require special attention for job reclassification, benefits counseling, grievance, or a myriad of other needs. Many receive special training. More than 950 are

represented by 13 collective bargaining units, each with its own contract, often, as we have recently seen, requiring extensive negotiations. All of this activity and more constitute the tasks of the University's personnel and labor relations office.

During the past five years, we have professionalized our labor relations. Although we were not able to avoid a strike recently on the issue of wages, we finally concluded a settlement that we believe was equitable in view of the University's financial situation and our wage and salary policies for non-unionized personnel. More important, we are achieving new contracts that may bring longer-range stability to our labor relations and maintain a fair and proper balance between the needs and rights of both labor and management.

The benefits packages have been improved. The retirement age for staff and new faculty was lowered to age 65, with a system of voluntary early retirement for faculty. Training has been increased. In these and other ways, we have begun to create a personnel system that is better able to meet the needs of faculty, staff, and institution.

Information Systems and Planning. We have increasing demands for information and analysis—of personnel, budgets, payroll, funds, alumni records, course registration, student enrollment, and the like. A University Management Information System office was created in 1972 to upgrade our basic data system and to provide ongoing reports to users throughout the University. We are continuing to develop more complete and accessible information on students, facilities, faculty development activities and alumni.

Last year, an Office of Planning Analysis was created under the direction of Robert Zemsky to conduct special studies. Working with the offices of the President, of Provost Eliot Stellar, Associate Provost for Academic Planning John Hobstetter, and Senior Vice-President for Management Paul Gaddis—and drawing on the services of the new Budget Office headed by Jon Strauss—the Office of Planning Analysis has developed, among other things, a base of knowledge on our schools and methods of projecting resource levels for all the schools and centers.

The Schools

A review such as this must necessarily miss much that could be told of our past five years: for example, our remarkable achievements in Ivy athletics under the leadership of Fred Shabel and now Andy Geiger; the efforts of Professors Allyn Rickett, Sol Goodgal, and many others to find new ways of working with the surrounding community; the work of F. Otto Haas toward revitalization of the Morris Arboretum; the changes in our extracurricular campus life; and our growing cooperative arrangements with other schools—our undergraduate ties to Bryn Mawr, Haverford and Swarthmore Colleges and to universities such as Columbia, and our computer consortium, UNICOLL.

As much as we are One University and becoming more so, our achievements, our problems, and our goals are mainly those of our fourteen schools. Space does not allow reports on all of our schools. But the sections below report on some of the developments in five selected, large ones: Arts and Sciences, Engineering and Applied Science Law, Medicine, and Wharton School.

ARTS AND SCIENCES

From its start as an academy and then as a college in the mid-1700s, the University of Pennsylvania has welcomed applied and professional studies as well as the more theoretical disciplines. This welcome has been a source of strength to the University and one in which we can take pride. But no university in this country has achieved lasting greatness in applied and professional studies without a strong core of arts and sciences disciplines. (A few technological institutes have become truly distinguished in their fields, but the best, such as M.I.T., not only have strengths in the basic natural and physical sciences, but increasingly in the social sciences and other disciplines as well.) Quite aside from their own merits, the arts and sciences must remain strong if our applied and professional fields are to flourish. And to this end, we must add "their own merits"—as repositories of history, as summaries of man's tested wisdom, and as systems of perception and analysis.

The arts and sciences at the University of Pennsylvania have probably suffered some in the shadows of the oldest and best-established of our professional schools: Medicine, Wharton, and Law. The inclusion of a large portion of the basic biological

sciences within the health schools, and until recently the inclusion of most of the social sciences within Wharton, have almost certainly inhibited the balanced development of an arts and sciences core. And more recently (just when the organizational unity of the arts and sciences was nearly completed) the decline in federal support of basic research and the financial troubles of higher education generally have made the strengthening of the arts and sciences a somewhat slower process.

The principal event of the past five years in this metamorphosis has, of course, been the formation of the Faculty of Arts and Sciences. The story of its formation from the departments of the old College, the Graduate School of Arts and Sciences, and the social sciences from the Wharton School will not be repeated here. The real story of the Faculty of Arts and Sciences is its emerging agenda under the leadership of Dean Vartan Gregorian and his colleagues. It is, of course, an unfinished agenda (as all good agendas must be), but it is full of promise.

Undergraduate Education in the Arts and Sciences. Prior to the formation of the Faculty, men and women had different sets of requirements (under the College and the College of Liberal Arts for Women). Advising was considerably stronger in the College for Women than in the College. Many of the new programs for undergraduates had been initiated by the Vice-Provost for Undergraduate Studies and were still outside the regular school and departmental offerings. The College of General Studies was an entity quite removed from the regular faculty. A small percentage of our baccalaureates were going on to graduate work in the arts and sciences—a function, in part, of the times nationally and also of the preprofessional character of our undergraduate student body, but a percentage that might be increased with new opportunities for undergraduates to reinforce and to individualize their liberal education.

Much has changed. For the first time last fall, men and women entered the University in the arts and sciences under a common set of requirements. Freshman (and soon senior) seminars and thematic studies are now a regular part of the Faculty of Arts and Sciences undergraduate experience. General Honors has been expanded and tied to the Benjamin Franklin Scholars Program. Undergraduate academic advising has been improved and is to become an expectation of many faculty

members. The College of General Studies and the Summer School have been brought under the Faculty of Arts and Sciences with the aim of creating a curriculum staffed increasingly by our regular faculty.

With the help of the Faculty of Arts and Sciences Advisory Board, the Provost, the Vice-Provost for Undergraduate Studies and University Life, and others, the dean is beginning a re-examination of the role of general education for the Bachelor of Arts degree, particularly in the first two years. The question of what ought properly to comprise a basic general education in the arts and sciences has been asked many times. There is no answer, as such—no settlement of that ancient question. But we surely will come closer when we emerge fresh from a vigorous search.

This quest ought to be broadened to include the proper role of liberal education—which is partly but by no means exclusively the province of the arts and science disciplines—in the undergraduate professional programs.

Graduate Study and Research. Above all, Pennsylvania is a research University. In no other activity do our two missions of teaching and scholarship come together so completely as in the training of scholars for the Ph.D. Enrollments in various Ph.D. programs are partly the result of what the economist calls "exogenous" factors: prospects for employment, availability of financial support, and national trends that are hard to predict and virtually impossible to influence. But other measures of our Ph.D. students—the quality of entering students, their share of national fellowships, and the share of the limited new faculty posts in other major institutions going to our graduates—probably correlate highly with measures of quality of our departments and graduate groups.

It is easy to say that we should be excellent in all fields. It is more realistic to say that we should strive to be truly superlative where we either are or have a chance of becoming so. For what reputational surveys are worth (and they are undoubtedly worth something, although they must be accepted with many cautions), the Faculty of Arts and Sciences had three departments—anthropology, linguistics, and psychology—ranked in the top half dozen nationally in the 1969 American Council on Education study. Economics, classics, German, Romance languages, and Slavics were within the top 10. (Pharmacology and physiology, both in the medical school but with ties to arts and sciences, were also in the top ranks.) Our aim ought to be double or even triple those numbers of top-ranked fields. To do so will take added resources.

Selectivity is difficult. Priorities within the Faculty of Arts and Sciences must be set not merely according to prestige and reputation, but also according to teaching needs and centrality of disciplines as suggested by the Academic Planning Committee. For example, over half of all teaching in the Faculty of Arts and Sciences is done by seven of its 28 departments: English, history, sociology, biology, economics, mathematics, and Romance languages. Biology, in particular, is heavily strained by undergraduate majors and premedical enrollments. Other departments, such as history, are central to both undergraduate and graduate teaching. Still others, such as linguistics and oriental studies, do comparatively less teaching than most, but have earned strong national reputations for the quality of scholarship and graduate training, and may have strong claims in spite of relatively low student/faculty ratios. But paramount among the factors underlying the planning and resource allocation within the Faculty must be the academic excellence of the faculty and the graduate programs.

Success in doubling or tripling the number of our departments in the top half dozen nationally will take new resources as well. This will be difficult. With all the importance of the arts and sciences, the University's resources are severely limited. We hope to raise as much as \$45 million for the Faculty of Arts and Sciences in the Program for the Eighties. We

must recognize that that sum is so much more than has ever been raised for the arts and sciences that it will be a very hard goal to reach. But our chances will be greatly enhanced by the kinds of searching examinations of mission and priorities that have begun.

ENGINEERING AND APPLIED SCIENCE

Five years ago, engineering programs at the University of Pennsylvania were spread across four schools. Government support had dropped significantly. Undergraduate enrollment, here as at other engineering schools, was down. And the better-funded state university programs in engineering were beginning to surpass many of those in private universities.

Since that time, Pennsylvania's Faculty of Engineering and Applied Science has made considerable progress. Beginning in 1972-73, the four separate schools and faculties were integrated into a single Faculty of Engineering and Applied Science with eight departments. The departments of electrical engineering and science, computer and information science, and systems engineering retained their identity within the Moore School of Electrical Engineering, and joined the other five departments of the faculty which are bioengineering, chemical and biochemical engineering, civil and urban engineering, mechanical engineering and applied mechanics, and metallurgy and materials science. Each department offers both undergraduate and graduate curricula in addition to conducting a vigorous research program.

With the structural reorganization accomplished, the imaginative Dean Arthur Humphrey and the faculty turned to the improvement of undergraduate engineering and a re-orientation of graduate engineering education and research to focus on areas of societal concern. Two key components of these efforts, announced in January, 1974, are aimed specifically at undergraduates *not* aspiring to the engineering profession, but wanting a technologically oriented liberal education. The Bachelor of Applied Science program, implemented in the fall of 1974, provides a program of study in technology in the context of the liberal arts. This program has also been adopted for a combined program with Wharton in management and technology, and is being developed with an arts and sciences concentration in the history and sociology of science. Thirty-four students are in the Bachelor of Applied Science program this year; plans call for expansion to at least eighty.

Undergraduate students in the arts and sciences also can take courses in the Technological Literacy program. These courses apply a technological perspective with other disciplinary perspectives on contemporary topics: pollution control, transportation, the electric society, housing technology, urban development, and others.

The undergraduate professional engineering programs have been enhanced by increased emphasis on interdisciplinary work, thematic programs, and undergraduate research—all designed to give students a better understanding of the role of technology in the solution of society's major problems.

Freshman enrollment is up over 170—and approaching the goal of 200 a year that the faculty believes is appropriate for its size and its facilities. (This year, for the first time in many years, there has been a net transfer of undergraduates into engineering from the other University undergraduate schools.)

A vigorous and successful program of minority student recruitment, with special advising and tutoring, was begun in 1974. Minority students now comprise about 11 percent of the undergraduate engineering students. Enrollment of women, too, has risen greatly, now being about 17.5 percent of the freshman class.

In the long run, the reputation of the school, its financial strength, and its importance to the rest of the University depends on the quality of its research and graduate programs. At a time when many private university engineering schools have been losing ground to the large, heavily funded state schools, the goal of the dean and the faculty to bring at least half of the faculty's eight departments into the top ten nationally is a formidable challenge. Bioengineering and metallurgy and materials science are in the front ranks now, although these areas are not included in the conventional pantheon of engineering fields. These departments are almost certainly so ranked because of the ties between engineering and other departments and schools at the University. Bioengineering, for example, draws heavily on—and contributes heavily to—programs in all of the health schools and the arts and sciences. Research into bone, tooth, and tissue structure; into circulation, respiration, and environmental physiology; into bioelectrical behavior; and into bioinstrumentation are examples of One University at its most vigorous and productive. Similarly, metallurgy and materials science has achieved preeminence through its combined efforts with the department of physics and the Laboratory for Research on the Structure of Matter.

Chemical engineering is improving greatly. It ranked eleventh nationally (tied with Michigan and Northwestern) in quality of faculty according to a 1975 poll of engineering faculty. The same poll showed the major private universities losing ground in engineering as against the state institutions, with Pennsylvania faring better than most. However, it is clear that the private universities such as those in the Ivy group must clearly think through anew what their special contributions in engineering ought to be.

The record of Engineering and Applied Science over the past five years gives us every reason to believe that it will continue improving while it carefully examines its role, and that it will continue to develop in areas of natural collaboration with other schools and departments.

LAW

Five years ago, the Law School under its then dean, Bernard Wolfman, introduced a set of curricular reforms that have since been a casebook in themselves for legal education. The new curriculum, stemming from a study headed by Professor Robert A. Gorman, was in response to a number of problems and needs not then recognized by many other law schools. More clinical practice was introduced. More electives were offered, and new courses were introduced dealing, among other things, with social issues such as income maintenance, health law, environmental law, and poverty law. Joint-degree programs with Wharton (J.D./M.B.A.), City Planning (J.D./M.C.P.), Public Policy (J.D./Ph.D.) and others were strengthened. Students were brought into the school's governance and played a major role in developing such programs as public interest research.

Under Dean Wolfman, the school continued to reshape the curriculum and to add to its ranks of distinguished faculty. Also, in these last few years, the school has greatly increased its endowment through the Law School campaign which is a part of, but began ahead of, the Program for the Eighties. These efforts are continuing under the leadership of Louis H. Pollak, our first Albert M. Greenfield Professor of Human Relations and Law, former dean of the Yale Law School and now our new dean.

The student body is stronger than ever. There is more diversity. In 1970, fourteen per cent of the entering class were women and seven per cent were members of minority groups; today, these percentages are thirty and eighteen. And the high academic caliber of the students continued to climb.

Today's students are better equipped for the study of law when they enter the school, and better trained for the practice of law when they graduate.

In the last decade the numbers of young people graduating from law schools across the country have risen dramatically. But within the last three years recession has contracted the lawyer job market. However, graduates of our Law School are still eagerly sought by law firms, government agencies, corporations, public interest law offices, and other employers — gratifying evidence of the Law School's excellence.

In June, 1975, The American Assembly on Law and a Changing Society II issued a report on the future of legal education in the United States. It concluded:

If they are to fulfill their function of educating future lawyers to contribute to the solutions of the problems here presented, law schools should give greater emphasis to problems of cost, quality and delivery of legal services, to developing better systems of public legal health and justice, and to the broader responsibilities of lawyers to the society as a whole.

In legal education, the standards for approval of law schools and the qualifications for admission to the bar should permit experimentation with approaches to legal education, such as a broad variety of types of training of lawyers and of preparation for limited specialization in shorter periods of time.

We face this kind of challenge stimulated by the knowledge that we are among the leaders in responding to changing demands upon legal education while retaining and strengthening the traditional scholarly bases of the study of the law.

MEDICINE

Since its founding in 1765 as the nation's first medical school, our School of Medicine has played a major—in some ways and at some periods, dominant—role in the life of the University. This is in part a matter of scale. The School has about 600 fully-affiliated faculty—about 35 percent of the University's total. It generated in fiscal 1975 over \$23 million in externally funded research—55 percent of the University's total. The direct and indirect expenses of the School of Medicine in fiscal 1975 were over \$53 million, or about 21 percent of the total University budget. Adding the approximately \$70 million expenses of the hospitals brings the medical school and hospital share of the University budget to over 50 percent.

The impact of the medical school is more than one of scale. Its basic science departments provide much of the faculty for graduate programs in the life sciences. The school has ties not only to its fellow health schools, but to the Faculty of Arts and Sciences (in the sciences, sociology, economics, psychology, and other disciplines), Wharton (in health care economics and management), Engineering (in bioengineering), Law (in legal and ethical aspects of health care), and other schools. The hospitals together with the outreach programs in center city, Hazleton, Allentown, Williamsport, and other Pennsylvania cities are the most tangible evidence of the University to many in the Commonwealth.

Its impact is also great because of its standing. A poll a few years ago of 51 deans of schools of medicine did not find Pennsylvania's School of Medicine among the ten schools most frequently cited as one of the nation's top five. But only this month we received an advance copy of a study, to be published in February, rating schools of medicine on ten directly measurable (that is, nonreputational) criteria. Some of these criteria, too, have their faults and ought not be associated automatically with "quality." But it is significant that our medical school ranked third in the number of alumni and ninth in the percent

of alumni who are on faculties of other medical schools; tied for fourth in alumni who are medical school deans; and ranked fourth in percent of recent graduates and sixth in number of recent graduates who are board-certified in their specialties. The University of Pennsylvania, along with Chicago, Columbia, Johns Hopkins, and New York University, ranked in the top ten on five of the indices; Harvard ranked in six indices.

For all medical schools, the first half decade of the 1970s has been a period of coping with new social and political demands upon medical education. From the end of the Second World War through the mid-1960s, faculties and curricula were dominated by the enormous expansion of bio-medical research, funded predominantly by the federal government. The end of the 1960s brought recognition of some major imbalances in the health care establishment generally and in the medical schools that provided its base of knowledge, its training, and, through teaching hospitals, some of its most critical delivery. There were, perhaps, not enough physicians. More likely, there were not enough general practitioners. There had been insufficient attention to the development of new kinds of health professionals, such as physicians' assistants, and to new methods of health care delivery, such as health maintenance organizations. There were too many specialists in some fields, such as surgery, and not enough in others, such as geriatrics and degenerative diseases. The general practitioners and specialists who were in practice were poorly distributed, concentrated mainly in large metropolitan areas. Finally, too few women and too few members of minority groups were entering the medical profession.

In response to these imbalances, the federal government (and, to a lesser degree, state governments) began in the early 1970s to use public funding for the purpose of changing the nature of medical education. Funding slowed suddenly in some hitherto well-supported areas of basic research, and research attention turned more to clinical investigation of higher visibility problems such as cancer and heart disease. The Comprehensive Manpower Training Act of 1971 set as its goal a change not only in medical education, but in physician career choice, by providing funds for more students, shortened curricula, family practice training, and curricular revisions that de-emphasized basic science and emphasized early clinical practice and such courses as the sociology and the economics of health care.

Although designed to restore a certain kind of valuable balance to medical education (and thus some balance to health care generally), these governmental intrusions upon curriculum, career choice, and research are a source of great concern. Federal support will be necessary for medical education, and can undoubtedly lead to the kinds of advances—for example, in the delivery of health care—that federal support for research has already provided for basic medical science. My hope is that this new support can be substantial, steady, and respectful of the academic autonomy of our medical schools.

Our School of Medicine, like many, began to respond to new medical education needs before the passage of the new federal legislation. Major curricular reforms, which reduced the basic science requirements, opened new electives, and began earlier clinical experience, were in place by 1970 under the leadership of the then dean, Dr. Alfred Gellhorn. Enrollments increased and have held at that level since. Outreach programs were begun in Hazleton, Allentown, and elsewhere. Penn-Urb began at Graduate Hospital as a prototype urban health maintenance organization. And continuing education programs, which last year reached almost a thousand physicians in the Commonwealth of Pennsylvania alone, have become a regular part of our offerings.

Research, both basic and clinical, remains strong, especially in such fields as bioenergetics, immunology, neurological sciences, lung and pulmonary physiology, and neuropsychology.

Our strength is increasing in such fields as orthopaedics, hematology and oncology, and clinical gastrointestinal physiology. Sixteen programs in the broad categories of basic biochemical science, reproduction and early development, neuroscience and neurosensory disorders, and major chronic diseases have been selected for emphasis in the Program for the Eighties. Realization of the goal of \$45 million for the School of Medicine will provide much needed new facilities (mainly, the Medical Education Building, on which construction has already begun), endowment for faculty, and research and training support.

In spite of its present strengths, the School of Medicine faces some major tasks. The success of the fund drive is imperative if we are to be masters of our own academic fate. Too many of the school's long-range commitments are dependent on federal and other external research support. The faculty is large, particularly the partially-affiliated faculty for whom the University's financial responsibility is occasionally obscure. In some departments standards for appointments must be bolstered. The group practices, which have been brought into the University where they belong, need to be carefully managed. Greater collaboration must take place with the Faculty of Arts and Sciences and the other health schools in basic science education. And the School of Medicine must continue to seek more effective ways of developing in its students a sense of the social, ethical, economic, and psychological dimensions of health. I have great confidence in the faculty and in the devoted new dean, Edward Stemmler, and their capacity to respond to these objectives.

WHARTON SCHOOL

The story of Wharton over the past five years is a story of development. Enrollments and course units taught are up. Applications have risen, yielding stronger students in both undergraduate and graduate programs. (The mean score of incoming Master of Business Administration students on the Graduate Management Aptitude test is up from the 66th to the 90th percentile.) Contract research has increased from about \$1 million in 1971-72 to over \$5 million in the current year. The school's other vital signs—such as curricular strengthening, alumni activity, corporate involvement, executive education, and international activity—have all improved during Dean Donald Carroll's tenure.

Development has also, of course, meant change. In 1973, the social science departments left Wharton for the Faculty of Arts and Sciences. A year ago, Dean Carroll reported that the move had, if anything, increased fruitful collaboration between the social science and management faculties. A new decision sciences department was created in 1974-75 and a social system science unit was formed in 1973-74; both reflect the growing emphasis on the behavioral aspects of decision-making and organizational behavior. Last year, the School of Public and Urban Policy was formed as a part of the larger Wharton School. This school is autonomous in many ways, but is designed to draw especially on the faculty and staff of Wharton and in turn to bring new emphasis on policy analysis and the public sector to complement Wharton's private management education. Executive education has flourished with a growing evening school, a new weekend Executive Master of Business Administration program, and an emerging Executive Seminar Program. An Entrepreneurial Center was added in 1973; and established research centers such as the Busch Center, the Leonard Davis Institute of Health Economics, and the Rodney White Center for Financial Research have increased their activity. An international office was created in 1974 to further international alumni ties, research, and executive programs.

Wharton has had national trends in its favor during this period: students, corporations, and government agencies have

been turning toward the practical and applied, and business schools nationally are prospering. But Wharton has also more than held its own in the intense competition among the nation's top-ranked schools.

But more important than changes in scale, organization, or even reputation, have been the changes in the academic aims of the Wharton School. The undergraduate program has become less "vocational-professional" and more liberally oriented. Emphasis has shifted toward analytical skills and theoretical tools. Wharton undergraduate students are increasingly pursuing joint degrees and dual majors. Planned undergraduate programs in the School of Public and Urban Policy will give additional options for Wharton and other undergraduates interested in public policy analysis and the governmental and not-for-profit sectors.

Throughout the nation, we find many young people seeking an education that seems most immediately marketable. Some—often superior students—turn to Wharton. Yet Wharton is unique among undergraduate business schools (and the only one remaining in a major private university) and is demonstrating that it is possible to provide a liberal undergraduate education within a professional and preprofessional curriculum; to provide future leaders with a sense of history, culture, and philosophy; and to experiment with new curricula and teaching approaches which recognize management and the methodology of decision-making as a part of a liberal education.

The challenge to Wharton Graduate is not dissimilar. The core Master of Business Administration (M.B.A.) curriculum, revised last year, includes accounting, statistics, microeconomics, macroeconomics, operations research, organizational management, financial analysis, information systems, and marketing. The program is known for its emphasis on developing analytical skills. While this emphasis is a source of strength to the program, it must focus on our principal goal of developing top-level executives rather than pure analysts. Wharton is also extending—as it has from its origins—management, policy, and planning tools to not-for-profit organizations such as government regulatory agencies, law, health care, and education. Students are jointly pursuing M.B.A.s and other advanced degrees in law, medicine, social work, public policy, and the arts and sciences.

Here, as in the undergraduate programs, the progress is satisfying. The school continues to look for ways to provide a rigorous yet ever more versatile M.B.A. experience, and to add to its superlative training in management skills the kind of education that prepares leaders of both profit and nonprofit organizations.

Underlying the undergraduate and master's degree programs and their increasing emphases on analysis are the research activities of the faculty and the eleven Ph.D. programs within the Graduate Group in Managerial Science and Applied Economics. Perhaps half of the Ph.D. students will remain in research and teaching in schools of management. The Ph.D. programs have always drawn heavily on economics and statistics. They are beginning as well to draw on other fields such as sociology and psychology in the Arts and Sciences, systems engineering in the School of Engineering and Applied Science, and public policy analysis in the School of Public and Urban Policy. The Vice-Provost for Graduate Studies and Research and the rest of the Ph.D. graduate faculties will be

working with the Wharton faculty to achieve Ph.D. programs that have the theoretical base associated with the arts and sciences and the policy application associated with management, decision making, and organizational behavior.

OTHER SCHOOLS

There would be much to tell of our other schools, were space to permit. The dental school, under Dean Walter Cohen, has added outstanding faculty strength over the past five years. The School of Veterinary Medicine has continued to be in the front rank of veterinary schools; and it continues, too, to suffer from severe financial problems. We hope to persuade the Commonwealth to assume much more of the financial support of this state and national asset. Nursing will have a new dean next year replacing retiring Dorothy Mereness; the Nursing School is increasingly looking to graduate-level programs. The diploma program of the Hospital is in the final stages of being phased out. The School of Allied Medical Professions has been operating under the leadership of Acting Dean Eugene Michels while the Vice-President for Health Affairs, the Provost, and others work with the faculty to determine the long-range future of allied health professions at Pennsylvania.

The Graduate School of Fine Arts under Dean Peter Shephard has added strong new undergraduate programs in urban studies and the design of the environment. The Annenberg School and Dean George Gerbner have been working with the Faculty of Arts and Sciences to develop new undergraduate programs in communications. The Graduate School of Education is rebuilding its programs under the leadership of a new dean, Dell Hymes—the only scholar in anthropology to head a school of education. Education has consolidated many of its programs, and is planning to concentrate its strength in the fields of linguistics and learning. The graduate School of Social Work, under Dean Louise Shoemaker, has made great strides in increasing its research and applied scholarship.

None of these capsules does justice to the achievements—nor to the problems—of these schools. But they sum to a healthy vitality in the University and to the fact that our deans and their faculties are continuing to search for new ways of relating to one another and to increase their educational and scholarly activities.

* * *

This, then, is where we stand in 1976: a university profoundly affected by the economic and social changes of the seventies but academically strong as we prepare for the decade of the eighties that is close upon us. The Program for the Eighties is under way, and it has the dedicated support of our trustees, our faculty, our alumni, and our friends. Our task is to conserve and to reinforce. The key to our success in the years ahead will be the achievement of both the academic and the financial objectives of the Program for the Eighties. We require that success for ourselves, whether students, professors, or supporters. And we require it for the quality of American higher education. I am confident in this Bicentennial year that all of us will work together toward a future derived from our strengths and justifying the promise of our early predecessors when they titled Pennsylvania as America's first University.



PROGRAM FOR THE EIGHTIES

\$255 Million for the University of Pennsylvania

On October 3, 1975, the Trustees of the University of Pennsylvania launched the Program for the Eighties—a plan to augment the University's varied resources for achieving these broad aims:

To develop more fully the University's academic strengths in key fields—notably those in which it is already a national leader or within reach of leadership, and those fields that are central to its educational mission.

To join together Pennsylvania's diverse talents and programs in useful new combinations, correlating specialties with each other, and blending theory with practice and the perceptions of the liberal arts and sciences with the sense of social purpose of the professions—welding them into One University.

To provide a broad range of campus resources—intellectual, cultural, social, recreational and physical—that create an environment in which cultural life and learning flourish together.

And, basic to everything else: to put the University's finances on a durably strong foundation.

To carry out this program will require \$255 million in gift funds, now being sought in a five-year campaign. It is the largest development drive in the history of the University. Spurred by the drive, Pennsylvania last year raised more private funds than any other universities except Harvard, Stanford and the University of California system. The drive's success will insure the University's future as a fiscally sound private institution, yet closely allied to the Commonwealth of Pennsylvania. More than that, it will reinforce Pennsylvania as a distinctive kind of university—functionally unified, serving its students and our society with a style and quality all its own.