

Peterson's Guide to

*Graduate
& Professional
Programs*

An Overview 1992

Peterson's Guide to Graduate and Professional Programs: An Overview 1992

Twenty-sixth Edition

Peterson's Annual Guides to Graduate Study: Book 1

Peterson's Guides
Princeton, New Jersey

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Introduction

How to Use These Guides

OVERVIEW

The six volumes of Peterson's Annual Guides to Graduate Study, the only annually updated reference work of its kind, provide wide-ranging information on the graduate and professional programs offered by accredited colleges and universities in the United States and Canada. They are designed to be used by prospective graduate and professional students, placement counselors, faculty advisers, and all others interested in postbaccalaureate education.

Book 1, *Graduate and Professional Programs: An Overview*, contains information on institutions as a whole. Books 2 through 6 are devoted to specific academic and professional fields:

- Book 2—*Graduate Programs in the Humanities and Social Sciences*
- Book 3—*Graduate Programs in the Biological and Agricultural Sciences*
- Book 4—*Graduate Programs in the Physical Sciences and Mathematics*
- Book 5—*Graduate Programs in Engineering and Applied Sciences*
- Book 6—*Graduate Programs in Business, Education, Health, and Law*

The books may be used individually or as a set. For many readers—for example, those students who have chosen a field of study but do not know what institution they want to attend, as well as those who have a college or university in mind but have not decided what field to go into—the best place to begin is Book 1.

Book 1 presents several directories that help readers identify programs of study that might be of interest to them and that they can subsequently research further in Books 2 through 6. The directory *Graduate and Professional Programs by Field* lists the 309 fields for which there are program directories in Books 2 through 6 and gives the names of those institutions in the United States, Canada, and the U.S. territories that offer graduate degree programs in each. Degree levels are also indicated.

For geographical or financial reasons, some readers will be interested in attending a particular institution and will want to know what it has to offer. They should turn to the directory *Institutions and Their Offerings*, which lists the degree programs available at each institution, again, in the 309 academic and professional fields for which Books 2 through 6 have program directories. As in the *Graduate and Professional Programs by Field* directory, the level of degrees offered is also indicated.

Finally, the directory of *Combined-Degree Programs* lists the areas in which two graduate degrees may be earned concurrently and the schools that offer them.

CLASSIFICATION, FIELD DEFINITIONS, AND ACCREDITATION

Once you have identified the particular programs and institutions in which you are interested, you can use both Book 1 and the specialized volumes to obtain detailed information—Book 1 for information on the institutions overall and Books 2 through 6 for details regarding the smaller graduate units and their degree programs themselves.

Books 2 through 6 are divided into sections that contain one or more directories devoted to programs in a particular field. As indicated above, there are 309 program directories in all, and they list over 31,000 individual academic and professional units. Readers who do not find a directory devoted to the field they are interested in are urged to consult the *Index of Directories and Subject Areas* in Books 2–6 found in each book. Once you have identified the correct book, you should consult the *Index of*

Directories and Subject Areas in This Book, which indicates (as does the more general directory) what directories cover subjects not specifically named in a directory or section title. This index in Book 2, for example, will tell you that if you are interested in sculpture, you should see the directory entitled *Art/Fine Arts*. The *Art/Fine Arts* entry will direct you to the proper page.

Books 2 through 6 have a number of comprehensive directories. These directories have entries for every institution granting graduate degrees in that field. For example, the comprehensive *Education* directory in Book 6 consists of profiles for schools and colleges of education and for departments or programs in institutions that do not have larger education units. General education programs offered by noneducation units, such as English departments, are also profiled. Cross-references identify specific education programs offered by noneducation units, such as English education programs in English departments, and note whether an overall education unit exists at that institution.

Comprehensive directories are followed by other directories, or sections in Books 3 and 5, that give more detailed information about programs in particular areas of the general field that has been covered. The comprehensive *Education* directory, in the example above, is followed by more than thirty directories in specific areas of education, such as *English Education*, *Music Education*, and *Education of the Gifted*. Where the parts of a book covered by a comprehensive directory exceed a single section, this is noted in the introductory information preceding it.

Because of the broad nature of many fields, any system of organization is bound to involve a certain amount of overlap. Environmental studies, for example, is a field whose various aspects are studied in several types of departments and schools. Readers interested in such studies will find information on relevant programs in Book 2 under *City and Regional Planning*, *Environmental Policy and Resource Management*, and *Public Policy and Administration*; in Book 3 under *Ecology*, *Environmental Biology*, and *Natural Resources*; in Book 5 under *Energy Management and Policy* and *Environmental Engineering*; and in Book 6 under *Environmental and Occupational Health*. In order to make it easy for readers to find all of the programs that may be of interest to them, the introduction to each section of Books 2 through 6 includes, if applicable, a paragraph suggesting other sections and directories with information on related areas of study to consult.

The introductory pages of the different sections of Books 2 through 6 also present information related to the field or fields covered therein. Brief statements describing all fields of study appear under the heading *Field Definitions*. Written by educators who are experts in their field, these statements describe areas of research and applied work as well as employment prospects for graduates. In Books 2, 3, 5, and 6, the introductions to some sections include short essays contributed by the agency that accredits programs in one or more of the fields the section is devoted to. These essays present information about how programs are accredited and discuss the importance that accreditation may have for students entering a particular field.

SCHOOL AND PROGRAM INFORMATION

In all of the books, information is presented in three forms: profiles—capsule summaries of basic information—and the announcements and full descriptions written by graduate school and program administrators. The format of the profiles is constant, making it easy to compare one institution with another and one program with another. A description of the information in the profiles in Books 2 through 6 may be found below; the Book 1 profile description is found immediately preceding the profiles in Book 1. A number of graduate school and program administrators have attached brief announcements to the end of their profile listings. In these, readers will find information that an institution or program wants to emphasize. The two-page full descriptions are by their very nature somewhat more expansive and flexible than the profiles, and the administrators who have

written them may emphasize different aspects of their programs. All of these full descriptions are organized in the same way, however, and in each one the reader can count on finding information on the same basic topics, such as programs of study, research facilities, tuition and fees, financial aid, and application procedures. If an institution or program has submitted a full description, a boldface cross-reference appears below its profile. As is the case with the profile announcements, all of the full descriptions in the guides have been submitted by choice of administrators; the absence of an announcement or full description does not reflect any type of editorial judgment on the part of Peterson's Guides.

In addition to the regular directories that present profiles of programs in each field of study, many sections of Books 2 through 6 contain special notices under the heading Cross-Discipline Announcements. Appearing at the end of the profiles in many sections, these announcements call the reader's attention to programs described in a different section that he or she may find of interest. A biochemistry department, for example, may place a notice under Cross-Discipline Announcements in the Chemistry section (Book 4) to alert chemistry students to their current description in the Biochemistry section of Book 3. Cross-discipline announcements, also written by administrators wishing to highlight their programs, will be helpful to readers not only in finding out about programs in fields related to their own but also in locating departments that are actively recruiting students with a specific undergraduate major.

Data Collection and Editorial Procedures

DIRECTORIES AND PROFILES

The information published in the directories and profiles of all the books is collected through Peterson's Guides Annual Survey of Graduate Institutions, a series of questionnaires sent each spring and summer to the more than 1,440 accredited institutions in the United States and Canada offering postbaccalaureate degree programs. Deans and other

administrators complete these surveys, providing information on programs in the 309 academic and professional fields covered in the guides as well as overall institutional information. Peterson's editorial staff then goes over each returned survey carefully and verifies or revises responses after further research and discussion with administrators at the institutions. Extensive files on past responses are kept from year to year.

While every effort has been made to ensure the accuracy and completeness of the data, information is sometimes unavailable or changes occur after publication deadlines. All usable information received in time for publication has been included. The omission of any particular item from a directory or profile signifies either that the item is not applicable to the institution or program or that information was not available. Profiles of programs scheduled to begin during the 1991-92 academic year cannot, obviously, include statistics on enrollment or, in many cases, the number of faculty members. If no usable data were submitted by an institution, its name, address, and program name where appropriate nonetheless appear in order to indicate the existence of graduate work.

ANNOUNCEMENTS, BULLETIN BOARDS, AND FULL DESCRIPTIONS

While the profiles represent the result of Peterson's annual research project on U.S. and Canadian graduate education, covering over 31,000 administrative and academic units at over 1,480 institutions and forming a database as complete as possible, the announcements and full descriptions are supplementary insertions submitted by deans, chairs, and other administrators who wish to make an additional, more individualized statement to readers. Those who have chosen to write these insertions are responsible for the accuracy of the content, but Peterson's editors have reserved the right to delete irrelevant material or questionable self-appraisals and to edit for style. Statements regarding a university's objectives and accomplishments are a reflection of its own beliefs and are not the opinions of the editors. Since inclusion of announcements and descriptions is by choice, their presence or absence in the guides should not be taken as an indication of status, quality, or approval.

Beverly vonVorys-Norton
Series Editor

Phil Williams
Data Editor

INTRODUCING CONNEXION

Peterson's Connexion is a state-of-the-art recruiting service that matches people at all career levels with jobs or graduate school opportunities. By registering in Connexion, individuals can bring themselves to the attention of Fortune 500 multinationals, midsize and small companies, nonprofit groups, and academic institutions in one simple step. Organizations, in turn, get quick access to all appropriate candidates for their jobs, internships, or advanced study openings.

Companies of all sizes and in both the private and the nonprofit sectors are making Connexion an important part of their recruiting program. Among the varied and ever-expanding list of supporters are AT&T, the Department of the Navy, Memorial Sloan-Kettering Cancer Center, Merrill Lynch & Co., Parke-Davis, Warner-Lambert Company, Pepsi-Cola International, Price Waterhouse, Prudential-Pruco Vita, Unilever, Xerox Corporation, and Ziff Communications Company. Similarly, hundreds of graduate programs in all disciplines are using Connexion to identify individuals with the potential for further study.

To become part of Connexion, all you do is fill out a registration form giving your academic and employment background, specific skills such as languages or computer capabilities, and career objectives. Connexion does the rest, linking you to companies and graduate schools seeking someone with your experiences and talents. Once the match is made, follow-up is done by the organizations themselves.

Connexion revolutionizes national and international recruiting and puts more opportunities within your reach. Take advantage of Connexion by completing the response card bound in this book. Don't delay—a great opportunity may be waiting for you right now!

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The Graduate Adviser

This section consists of three essays and information on admissions tests and accreditation. The first essay, *Graduate Education in the Nineties*, is by Mary G. Powers, Dean of the Graduate School of Arts and Sciences at Fordham University. It covers a number of topics of general interest, including the historical developments and trends in graduate education and the demand for graduate education and faculty in the nineties. The second essay, *Applying to Graduate and Professional Schools*, is by Jane E. Levy of Cornell University and Elinor R. Workman of the University of Chicago. It covers a number of points of interest to students considering postbaccalaureate work, including types of degrees, choosing a specialization and researching programs, applying, and some issues for returning, part-time, and foreign students. The third essay is *Financial Aid for Graduate and Professional Education*, by Patricia McWade of Georgetown University. It discusses how and when to apply for aid, determining financial need, and types of aid available. All three essays appear in each of the six Graduate Guides. *Tests Required of Applicants* provides information on major standardized admissions tests. *Accreditation and Accrediting Agencies* gives information on accreditation and its purpose and lists first institutional and then specialized accrediting agencies.

Graduate Education in the Nineties

Graduate schools prepare the experts needed in almost every field of endeavor. They prepare most administrators and instructors in schools, colleges, and universities and increasing numbers of professional employees in industry, government, and other settings. As disciplines become more specialized, graduate training is increasingly necessary and employers look for persons with advanced degrees. Recent college graduates who began careers as teachers, chemists, management trainees, social workers, and the like will find that, in order to stay abreast of developments in their fields, they must pursue graduate education, usually in the form of a degree-granting program, but also in the form of workshops, seminars, and mini courses.

Graduate schools in the United States have adapted well to these new needs and demands. In addition to providing traditional training for careers in scholarship and research, graduate schools in the United States also offer programs geared toward professional advancement and personal enrichment. Institutional adjustments, at all levels, have been made to respond to a much broader student body than in the past and to the knowledge explosion resulting in new programs and organizational structures.

Historical Developments and Trends

With more than a century of experience behind them, graduate schools in the United States are widely recognized as major centers of scholarship and research. Indeed, while one finds ample, and frequently undeserved, criticism of other segments of the educational system, it is widely acknowledged that graduate education in the United States is second to none.

The enrollment of full-time graduate students, especially in the humanities, declined during the seventies and early eighties, as the demand for Ph.D.'s declined, particularly in academia, with the enrollment of small cohorts of traditional-age full-time students. The surplus of qualified persons seeking positions in colleges and universities in the seventies forced many of them to move into careers in other areas, and the number of U.S. citizens seeking doctorates began a decline that continued throughout the eighties. This was a response to a period experiencing a recession, an energy crisis, and high unemployment levels in many professions. Everyone had a story of the cab driver with a Ph.D. College graduates turned to other pursuits and the number of Ph.D.'s produced annually declined from the early seventies through the mid-eighties.

During this period of slow growth, graduate schools, nonetheless, made innovative changes and expanded their programs in a variety of ways. Numerous centers and institutes for research were established as were interdisciplinary and interdepartmental programs. The number of part-time students increased as did the number of women and minority students. By 1989 over half the graduate students enrolled in schools that were members of the Council of Graduate Schools were enrolled part-time. This varied considerably by type of school, however. Students in major research institutions were still predominantly men and full-time in 1989, whereas women were 62 percent of the students in master's institutions where three quarters of the students attended part-time. During the last several years, full-time enrollment is again increasing more rapidly than part-time enrollment—perhaps because of the perception of increased employment opportunities in the nineties and on into the twenty-first century. Other major changes in the graduate school population of the late seventies and throughout the eighties included increasing numbers of minorities from all groups and increasing numbers of women and international students.

The Demand for Graduate Education in the Nineties

The next century will bring major changes in higher education and will provide opportunities and challenges that require increased numbers of persons with a graduate education. Several forces will come together to create a demand for personnel with graduate degrees. These include: (1) the growth of college-age populations after 1995 and the pattern of college enrollment of this population, (2) the aging of the population and the pending retirements of existing doctoral personnel both within academia and elsewhere, and (3) the numbers of advanced degrees awarded in the recent past and likely to be awarded in the near future, which suggest a shortage especially in the sciences. All of these forces will affect the demand for and supply of college faculty with the Ph.D. and persons with M.A. and Ph.D. degrees in other settings.

Enrollment in Colleges and Universities

Enrollment trends in colleges and universities in the nineties will differ from what has been experienced throughout the eighties. The most recent National Research Council report on doctorate recipients indicated that about 25 percent of all doctorates awarded in 1989 were earned by non-U.S. citizens. Most international students were concentrated in the sciences and engineering. There was considerable variation, however. Non-U.S. citizens earned over one third of all doctorates in the physical sciences, one quarter in the life sciences, but only 10 percent in education. While many still plan to return home for employment, the proportion planning to remain in the U.S. increased over the decade from 39 percent in 1979 to 58 percent in 1989.

In addition to the increase in international students, enrollment in higher education institutions in the nineties will include escalating proportions of women and minorities. In particular, the enrollment of women at all levels of higher education has increased dramatically from about 5 million in the mid-seventies to over 7 million in 1990. It is expected that the enrollment of women in graduate programs will continue to grow faster than the enrollment of men. Similarly, the 1980s saw an increase in the enrollment of minority students in virtually all levels of higher education, including graduate education. On a year-by-year basis, there were some fluctuations throughout the decade, but there has been a sizable net gain, particularly in African-American and Hispanic enrollment in graduate education, with increases expected to continue during the nineties.

In the same way that the characteristics of enrolled students at the undergraduate level have changed to incorporate a smaller proportion of traditional four-year, full-time students, so, too, has the graduate student population changed. Graduate programs are now targeted to personal enrichment and professional advancement as well as to traditional academic programs leading to the Ph.D. Because of this, larger proportions of college graduates are attracted to graduate programs but are attending part-time and for different reasons than in the past. Some individuals feel the need to keep up with the ever-increasing changes in disciplines such as computer science, engineering, and economics. Some prepare for second careers. Others simply explore interests outside their own fields that were not fully attended to while in a career-oriented program.

In any case, it appears that the decade of the nineties will see some growth in both undergraduate and graduate enrollment. According to William G. Bowen and Julie A. Sosa in *Prospects for Faculty in the Arts and Sciences* (Princeton: Princeton University Press, 1989), the level of growth in undergraduate enrollment is projected to be very low because of the composition of the population reaching age 18. It will include larger proportions of minority and immigrant youth who have not attended college at the same rate as the majority population. The National Center for Education Statistics, on the other hand, suggests a modest level of

increase through the first decade of the next century. Growth at the graduate level has already begun and should help to prepare the faculty needed to teach the college students who will be enrolling in increasing numbers after 1995, just as professors are retiring in increasing numbers.

Demand for Faculty

Students interested in a particular discipline, such as physics, chemistry, mathematics, sociology, or English, will find increasing opportunities to work in that discipline in a university setting during the late nineties and into the twenty-first century. Several recent studies point to the potential shortage of faculty in the arts and sciences, which will be felt beginning in the second half of the 1990s. The underlying assumption is that the demand for faculty will be affected by the retirement of existing faculty, many of whom were hired in the sixties, and by enrollment trends noted previously, which will tend to rise slowly after 1995.

Several surveys indicate that, in the roughly 3,300 colleges and universities in the United States, the faculty was, on average, considerably older in 1990 than it was in the 1970s. Given the drop in the number of doctorates awarded in the seventies and eighties, the retirement of older faculty will lead to a shortage of faculty by the mid to late nineties, just as enrollments are projected to again increase.

Faculty shortages are already perceived in some fields, and most observers of the academic scene agree that major changes in the market are already under way. Whereas there were very few jobs in the humanities as recently as 1985, opportunities have increased dramatically in the past two years. Bowen and Sosa estimate that by 1997 there will be only about 7 qualified candidates for every 10 faculty openings in the humanities and social sciences and about 8 candidates for every 10 positions in the physical sciences and mathematics. Hence, the expectation of a faculty shortage at the end of the decade is real and should provide new opportunities for recipients of advanced degrees. Opportunities in sectors other than academia will also result from the retirement of persons in industry and government who earned their degrees in the fifties and sixties.

Nonacademic Demands

Research and development in American industry is heavily dependent on graduate education. It is expected that the demand for master's and doctoral personnel in industry will increase over

the next decade. In 1987, for example, over half of all doctoral scientists and engineers were 45 years old or over. This suggests that during the nineties there also will be increasing numbers of retirements in nonacademic sectors. Even in the absence of growth in government and industry, there will be a demand for new doctorates as replacements for some of the retiring cohorts. This, coupled with the estimates of large numbers of faculty retirements and increased enrollments in colleges, indicates an increased demand for master's and Ph.D. recipients in most arts and sciences disciplines.

The Future in Graduate Education

While all of the evidence suggests that national needs require more persons with graduate-level degrees and that the value of a graduate degree will increase in the economy of the nineties, ultimately the decision to seek a graduate degree is an individual matter. For those people who have developed a compelling interest in some discipline or area of knowledge and must go on to obtain a greater understanding, the decision is relatively easy. This love of learning and search for greater knowledge for its own sake is what traditional graduate programs were and are about. They need only to seek the specific program that will provide them with the best experience in research and scholarship in their area of interest.

If, on the other hand, they have concrete concerns about career advancement and earnings, there are many programs that will enhance both. They may have to spend some time deciding whether a degree in accounting, engineering, business administration, or some other field best meets their needs and interests, but there are many such programs available. Similarly, if people have an interest in a career in education, social work, or other areas that emphasize social service, regardless of salary, graduate study provides the foundation and career training that will help them reach their career goals.

Graduate education in the United States is large, diverse, and competitive. It is an unplanned system of colleges and universities that provide the best research training in the world along with a vast array of programs oriented to professional development and personal enrichment. The program that best meets the individual's needs and interests is part of that larger enterprise.

Mary G. Powers, Dean
Graduate School of Arts and Sciences
Fordham University

Applying to Graduate and Professional Schools

The decision to attend graduate school and the choice of an institution and degree program require serious consideration. The time, money, and energy you will expend doing graduate work are significant, and you will want to analyze your options carefully. Before you begin filing applications, you should evaluate your interests and goals, know what programs are available, and be clear about your reasons for pursuing a particular degree.

There are two excellent reasons for attending graduate school, and if your decision is based on one of these, you probably have made the right choice. There are careers such as medicine, law, and college and university teaching that require specialized training and, therefore, necessitate advanced education. Another motivation for attending graduate school is to specialize in a particular discipline—to broaden your expertise in that area, to do research, and to specialize in a subject that you have decided is of great importance, either for career goals or for personal satisfaction.

Degrees

Traditionally, graduate education has involved acquiring and communicating knowledge gained through original research in a particular academic field. The highest earned academic degree, which requires the pursuit of original research, is the Doctor of Philosophy (Ph.D.). In contrast, professional training stresses the practical application of knowledge and skills; this is true, for example, in the fields of business, law, and medicine. At the doctoral level, degrees in these areas include the Doctor of Business Administration (D.B.A.), the Doctor of Jurisprudence (J.D.), and the Doctor of Medicine (M.D.).

Master's degrees are offered in most fields and may also be academic or professional in orientation. In many fields, the master's degree may be the only professional degree needed for employment. This is the case, for example, in fine arts (M.F.A.), library science (M.L.S.), and social work (M.S.W.). (For a list of the graduate and professional degrees currently being offered in the United States and Canada, readers may refer to the appendix of degree abbreviations at the back of each volume of these guides.)

Some people decide to earn a master's degree at one institution and then select a different university or a somewhat different program of study for doctoral work. This can be a way of acquiring a broad background: you can choose a master's program with one emphasis or orientation and a doctoral program with another. The total period of graduate study may be somewhat lengthened by proceeding this way, but probably not by much.

In recent years, the distinctions between traditional academic programs and professional programs have become blurred. The course of graduate education has changed direction in the last thirty years, and many programs have redefined their shape and focus. There are centers and institutes for research, many graduate programs are now interdepartmental and interdisciplinary, off-campus graduate programs have multiplied, part-time graduate programs have increased, and the demand for graduate education is clearly on the rise. Colleges and universities have also established combined-degree programs, in many cases in order to enable students to combine academic and professional studies; for example, they might earn an academic master's degree and an M.B.A. As a result of such changes, you now have considerable freedom in determining the program best suited to your current needs as well as your long-term goals.

Choosing a Specialization and Researching Programs

There are several sources of information you should make use of in choosing a specialization and a program. A good way to begin is to consult the appropriate directories of these Guides, which will tell you what programs exist in the field or fields you are interested in and, for each one, will give you information on degrees, research facilities, the faculty, financial aid resources, tuition and other costs, application requirements, and so on.

Talk with your college adviser and professors about your areas of interest and ask for their advice about the best programs to research. Besides being very well informed themselves, these faculty members may have colleagues at institutions you are investigating, and they can give you inside information about individual programs and the kind of background they seek in candidates for admission.

The valuable perspective of educators should not be overlooked. If the faculty members you know through your courses are not involved in your field of interest, do not hesitate to contact other appropriate professors at your institution or neighboring institutions to ask for advice on programs that might suit your goals. In addition, talk to graduate students studying in your field of interest; their advice can be valuable also.

Your decision about a field of study may be determined by your research interests or, if you choose to enter a professional school, by the appeal of a particular career. In either case, as you attempt to limit the number of institutions you will apply to, you will want to familiarize yourself with publications describing current research in your discipline. Find related professional journals and note who is publishing in the areas of specialization that interest you, as well as where they are teaching. Take note of the institutions represented on the publications' editorial boards also (they are usually listed on the inside cover); such representation usually reflects strength in the discipline.

Being aware of who the top people are and where they are will pay off in a number of ways. A graduate department's reputation rests heavily on the reputation of its faculty, and in some disciplines it is more important to study under someone of note than it is to study at a college or university with a prestigious name. In addition, in certain fields graduate funds are often tied to a particular research project and, as a result, to the faculty member directing that project. Finally, most Ph.D. candidates (and nonprofessional master's degree candidates) must pick an adviser and one or more other faculty members who form a committee that directs and approves their work. Many times this choice must be made during the first semester, so it is important to learn as much as you can about faculty members before you begin your studies. As you research the faculties of various departments, keep in mind the following questions: What is their academic training? What are their research activities? What kind of concern do they have for teaching and student development?

There are other important factors to consider in judging the educational quality of a program. First, what kind of students enroll in the program? What are their academic abilities, achievements, skills, geographical representation, and level of professional success upon completion of the program? Second, what are the program's resources? What kind of financial support does it have? How complete is the library? What laboratory equipment and computer facilities are available? And third, what does the program have to offer in terms of both curriculum and services? What are its purposes, its course offerings, and its job placement and student advisement services? What is the student-faculty ratio, and what kind of interaction is there between students and professors? What internships, assistantships, and other experiential education opportunities are available?

When evaluating a particular institution's reputation in a given field, you may also want to look at published graduate program ratings. There is no single rating that is universally accepted, so you would be well advised to read several and not place too much importance on any one. Most consist of what are known as "peer ratings"; that is, they are the results of polls of respected scholars who are asked to rate graduate departments in their field of expertise. Many academicians feel that these ratings are too heavily based upon traditional concepts of what constitutes quality—such as the publications of the faculty—and that they perpetuate the notion of a research-oriented department as the only model of excellence in graduate education. Depending on whether your own goals are research-oriented, you may want to attribute more or less importance to this type of rating.

If possible, visit the institutions that interest you and talk with faculty members and currently enrolled students. Be sure, however, to write or call the admissions office a week in advance to give the person in charge a chance to set up appointments for you with faculty members and students.

The Application Process

TIMETABLE

It is important to start gathering information early in order to be able to complete your applications on time. Most people should start the process a full year and a half before their anticipated date of matriculation. There are, however, some exceptions to this rule. The time frame will be different if you are applying for national scholarships or if your undergraduate institution has an evaluation committee through which you are applying to a health-care program or law school. In such a situation, you may have to begin the process two years before your date of matriculation in order to take your graduate admission test and arrange for letters of recommendation early enough to meet deadlines.

Application deadlines may range from August (before your senior year) for early decision programs of medical schools using the American Medical College Application Service (AMCAS) to late spring or summer (after your senior year) for a few programs with rolling admissions. Most deadlines for the entering class in the fall are between January and March. You should in all cases plan to meet formal deadlines; beyond this, you should be aware of the fact that many schools with rolling admissions encourage and act upon early applications. Applying early to a school with rolling admissions is usually advantageous, as it shows your enthusiasm for the program and gives admissions committees more time to evaluate the subjective components of your application, rather than just the "numbers." Applicants are not rejected early unless they are clearly below an institution's standards.

The timetable that appears below represents the ideal for most students.

Junior Year, Fall and Spring

- Research areas of interest, institutions, and programs.
- Talk to advisers about application requirements.
- Register and prepare for appropriate graduate admission tests.
- Investigate national scholarships.
- If appropriate, obtain letters of recommendation.

Junior Year, Summer

- Take required graduate admission tests.
- Write for application materials.
- Visit institutions of interest, if possible.
- Write your application essay.

- Check on application deadlines and rolling admissions policies.
- For medical, dental, osteopathy, podiatry, or law school, you may need to register for the national application or data assembly service most programs use.

Senior Year, Fall

- Obtain letters of recommendation.
- Take graduate admission tests if you haven't already.
- Send in completed applications.

Senior Year, Spring

- Register for Graduate and Professional School Financial Aid Service (GAPSFA), if required.
- Check with all institutions before the deadline to make sure your file is complete.
- Visit institutions that accept you.
- Send a deposit to your institution of choice.
- Notify other colleges and universities that accepted you of your decision so that they may admit students on their waiting list.
- Send thank-you notes to people who wrote your recommendation letters, informing them of your success.

You may not be able to adhere to this timetable if your application deadlines are very early, as is the case with medical schools, or if you decide to attend graduate school at the last minute. In any case, keep in mind the various application requirements and be sure to meet all deadlines. If deadlines are impossible to meet, call the institution to see if a late application will be considered.

OBTAINING APPLICATION FORMS AND INFORMATION

To obtain the materials you need, a neatly typed or handwritten postcard requesting an application, a bulletin, and financial aid information is all that is necessary. However, you may want to request an application by writing a formal letter in which you briefly describe your training, experience, and specialized research interests. Either type of request should be sent to the admissions office directly. If you want to write to a particular faculty member about your background and interests in order to explore the possibility of an assistantship, you should also feel free to do so. However, do not ask a faculty member for an application, as this may cause a significant delay in your receipt of the forms.

NATIONAL APPLICATION SERVICES

In a few professional fields, there are national services that provide assistance with some part of the application process. These services are the Law School Data Assembly Service (LSDAS), American Medical College Application Service (AMCAS), American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS), American Association of Colleges of Podiatric Medicine Application Service (AACPMAS), and American Association of Dental Schools Application Service (AADSAS). Many programs require applicants to use these services because they simplify the application process for both the professional programs' admissions committees and the applicant. The role these services play varies from one field to another. The LSDAS, for example, analyzes your transcript(s) and submits the analysis to the law schools to which you are applying, while the other services provide a more complete application service. More information and applications for these services can be obtained from your undergraduate institution.

MEETING APPLICATION REQUIREMENTS

Requirements vary from one field to another and from one institution to another. Read each program's requirements carefully; the importance of this cannot be overemphasized!

Graduate Admission Tests

Colleges and universities usually require a specific graduate admission test, and departments sometimes have their own requirements as well. Scores are used in evaluating the likelihood of your success in a particular program (based upon the success rate of past students with similar scores). Most programs will not accept scores more than three to five years old. The various tests are described a little later in this book.

Transcripts

Admissions committees require official transcripts of your grades in order to evaluate your academic preparation for graduate study. Grade point averages are important but are not examined in isolation; the rigor of the courses you have taken, your course load, and the reputation of the undergraduate institution you have attended are also scrutinized. To have your college transcript sent to graduate institutions, contact your college registrar.

Letters of Recommendation

Choosing people to write recommendations can be difficult, and most graduate schools require two or three letters. While recommendations from faculty members are essential for academically oriented programs, professional programs may seriously consider nonacademic recommendations from professionals in the field. Indeed, often these nonacademic recommendations are as respected as those from faculty members.

To begin the process of choosing references, identify likely candidates from among those you know through your classes, extracurricular activities, and jobs. A good reference will meet several of the following criteria: he or she has a high opinion of you, knows you well in more than one area of your life, is familiar with the institutions to which you are applying as well as the kind of study you are pursuing, has taught or worked with a large number of students and can make a favorable comparison of you with your peers, is known by the admissions committee and is regarded as someone whose judgment should be given weight, and has good written communication skills. No one person is likely to satisfy all these criteria, so choose those people who come closest to the ideal.

If you are returning to school after working for several years, you may not be able to find professors at your undergraduate institution who remember you. If this is the case, contact the graduate schools you are applying to and see what their policies are regarding your situation. They may waive the requirement of recommendation letters, allow you to substitute letters from employment supervisors, or suggest you enroll in relevant courses at a neighboring institution and obtain letters from professors upon completion of the course work. Programs vary considerably in their policies, so it is best to check with each institution.

Once you have decided whom to ask for letters, you may wonder how to approach them. Ask them if they think they know you well enough to write a meaningful letter. Be aware that the later in the semester you ask, the more likely they are to hesitate because of time constraints; ask early in the fall semester of your senior year. Once those you ask to write letters agree in a suitably enthusiastic manner, make an appointment to talk with them. Go to the appointment with recommendation forms in hand, being sure to include addressed, stamped envelopes for their convenience. In

addition, give them other supporting materials that will assist them in writing a good, detailed letter on your behalf. Such documents as transcripts, a résumé, a copy of your application essay, and a copy of a research paper can help them write a thorough recommendation.

On the recommendation form, you will be asked to indicate whether you wish to waive or retain the right to see the recommendation. Before you decide, discuss the confidentiality of the letter with each writer. Many faculty members will not write a letter unless it is confidential. This does not necessarily mean that they will write a negative letter but, rather, that they believe it will carry more weight as part of your application if it is confidential. Waiving the right to see a letter does, in fact, usually increase its validity.

Application Essays

Writing an essay, or personal statement, is often the most difficult part of the application process. Requirements vary widely in this regard. Some programs request only one or two paragraphs about why you want to pursue graduate study, while others require five or six separate essays in which you are expected to write at length about your motivation for graduate study, your strengths and weaknesses, your greatest achievements, and solutions to hypothetical problems. Business schools are notorious for requiring several time-consuming essays.

An essay or personal statement for an application should be essentially a statement of your ideas and goals. Usually it includes a certain amount of personal history, but, unless an institution specifically requests autobiographical information, you do not have to supply any. Even when the requirement is a "personal statement," the possibilities are almost unlimited. There is no set formula to follow, and, if you do write an autobiographical piece, it does not have to be arranged chronologically. Your aim should be a clear, succinct statement showing that you have a definite sense of what you want to do and enthusiasm for the field of study you have chosen. Your essay should reflect your writing abilities; more important, it should reveal the clarity, the focus, and the depth of your thinking.

Before writing anything, stop and consider what your reader might be looking for; the general directions or other parts of the application may give you an indication of this. Admissions committees may be trying to evaluate a number of things from your statement, including the following things about you:

- Motivation and commitment to a field of study
- Expectations with regard to the program and career opportunities
- Writing ability
- Major areas of interest
- Research and/or work experience
- Educational background
- Immediate and long-term goals
- Reasons for deciding to pursue graduate education in a particular field and at a particular institution
- Maturity
- Personal uniqueness—what you would add to the diversity of the entering class

There are two main approaches to organizing an essay. You can outline the points you want to cover and then expand on them, or you can put your ideas down on paper as they come to you, going over them, eliminating certain sentences, and moving others around until you achieve a logical sequence. Making an outline will probably lead to a well-organized essay, whereas writing spontaneously may yield a more inspired piece of writing. Use the approach you feel most comfortable with. Whichever approach you use, you will want someone to critique your essay. Your adviser and those who write your letters of recommendation may be very helpful to you in this regard. If they are in the field you plan to pursue, they will be able to tell you what things to stress and what things to keep brief. Do not

be surprised, however, if you get differing opinions on the content of your essay. In the end, only you can decide on the best way of presenting yourself.

If there is information in your application that might reflect badly on you, such as poor grades or a low admission test score, it is better not to deal with it in your essay unless you are asked to. Keep your essay positive. You will need to explain anything that could be construed as negative in your application, however, as failure to do so may eliminate you from consideration. You can do this on a separate sheet entitled "Addendum," which you attach to the application, or in a cover letter that you enclose. In either form, your explanation should be short and to the point, avoiding long, tedious excuses. In addition to supplying your own explanation, you may find it appropriate to ask one or more of your recommenders to address the issue in their recommendation letter. Ask them to do this only if they are already familiar with your problem and could talk about it from a positive perspective.

In every case, essays should be typed. It is usually acceptable to attach pages to your application if the space provided is insufficient. Neatness, spelling, and grammar are important.

Interviews, Portfolios, and Auditions

Some graduate programs will require you to appear for an interview. In certain fields, you will have to submit a portfolio of your work or schedule an audition.

Interviews. Interviews are usually required by medical schools and are often required or suggested by business schools and other programs. An interview can be a very important opportunity for you to persuade an institution's admissions officer or committee that you would be an excellent doctor, dentist, manager, etc.

Interviewers will be interested in the way you think and approach problems and will probably concentrate on questions that enable them to assess your thinking skills, rather than questions that call upon your grasp of technical knowledge. Some interviewers will ask controversial questions, such as "What is your viewpoint on abortion?" or give you a hypothetical situation and ask how you would handle it. Bear in mind that the interviewer is more interested in *how* you think than in *what* you think. As in your essay, you may be asked to address such topics as your motivation for graduate study, personal philosophy, career goals, related research and work experience, and areas of interest.

You should prepare for a graduate school interview as you would for a job interview. Think about the questions you are likely to be asked and practice verbalizing your answers. Think too about what you want interviewers to know about you so that you can present this information when the opportunity is given. Dress as you would for an employment interview.

Portfolios. Many graduate programs in art, architecture, journalism, environmental design, and other fields involving visual creativity may require a portfolio as part of the application. The function of the portfolio is to show your skills and ability to do further work in a particular field, and it should reflect the scope of your cumulative training and experience. If you are applying to a program in graphic design, you may be required to submit a portfolio showing advertisements, posters, pamphlets, and illustrations you have prepared. In fine arts, applicants must submit a portfolio with pieces related to their proposed major.

Individual programs have very specific requirements regarding what your portfolio should contain and how it should be arranged and labeled. Many programs request an interview and ask you to present your portfolio at that time. They may not want you to send the portfolio in advance or leave it with them after the interview, as they are not insured against its loss. If you do send it, you usually do so at your own risk, and you should label all pieces with your name and address.

Auditions. Like a portfolio, the audition is a demonstration of your skills and talent, and it is often required by programs in music, theater, and dance. Although all programs require a

reasonable level of proficiency, standards vary according to the field of study. In a nonperformance area like music education, you need only show that you have attained the level of proficiency normally acquired through an undergraduate program in that field. For a performance major, however, the audition is the most important element of the graduate application. Programs set specific requirements as to what material is appropriate, how long the performance should be, whether it should be memorized, and so on. The audition may be live or taped, but a live performance is usually preferred. In the case of performance students, a committee of professional musicians will view the audition and evaluate it according to prescribed standards.

MAILING COMPLETED APPLICATIONS

Graduate schools have established a wide variety of procedures for filing applications, so read each institution's instructions carefully. Some may request that you send all application materials in one package (including letters of recommendation). Others—medical schools, for example—may have a two-step application process. This system requires the applicant to file a preliminary application; if this is reviewed favorably, he or she submits a second set of documents and a second application fee. Pay close attention to each school's instructions.

Graduate schools generally require an application fee. Sometimes this fee may be waived if you meet certain financial criteria. Check with your undergraduate financial aid office and the graduate schools to which you are applying to see if you qualify.

ADMISSION DECISIONS

At most institutions, once the graduate school office has received all of your application materials, your file is sent directly to the academic department. A faculty committee (or the department chairperson) then makes a recommendation to the chief graduate school officer (usually a graduate dean or vice president), who is responsible for the final admission decision. Professional schools at most institutions act independently of the graduate school office; applications are submitted to them directly, and they make their own admission decisions.

Usually a student's grade point average, graduate admission test scores, and letters of recommendation are the primary factors considered by admissions committees. The appropriateness of the undergraduate degree, an interview, and evidence of creative talent may also be taken into account. Normally the student's total record is examined closely, and the weight assigned to specific factors fluctuates from program to program. Few, if any, institutions base their decisions purely on numbers, that is, admission test scores and grade point average. A study by the Graduate Record Examinations Board found that grades and recommendations by known faculty members were considered to be somewhat more important than GRE General Test scores and that GRE Subject Test scores were rated as relatively unimportant (Oltman and Hartnett, 1984). This indicates that some graduate admission test scores may be of less importance than is commonly believed, but this will of course differ from program to program.

Some of the common reasons applicants are rejected for admission to graduate schools are inappropriate undergraduate curriculum; poor grades or lack of academic prerequisites; low admission test scores; weak or ineffective recommendation letters; a poor interview, portfolio, or audition; and lack of extracurricular activities, volunteer experience, or research activities. To give yourself the best chances of being admitted where you apply, try to make a realistic assessment of an institution's admission standards and your own qualifications. Remember, too, that missing deadlines and filing an incomplete application can also be a cause for rejection; be sure that your transcripts and recommendation letters are received on time.

Returning Students

Many graduate programs not only accept the older, returning student but actually prefer these "seasoned" candidates. Programs in business administration, social work, law, and other professional fields value mature applicants with work experience, for they have found that these students often show a higher level of motivation and commitment and work harder than 21-year-olds. Many programs also seek the diversity older students bring to the student body, as differences in perspective and experience make for interesting—and often intense—class discussions. Nonprofessional programs also view older students favorably if their academic and experiential preparation is recent enough and sufficient for the proposed fields of study.

Many institutions have programs designed to make the transition to academic life easier for the returning student. Such programs include low-cost child-care centers, emotional support programs for both the returning student and his or her spouse, and review courses of various kinds.

Other than making the necessary changes in their life-style, older students report that the most difficult aspect of returning to school is recovering, or developing, appropriate study habits. Initially, older students often feel at a disadvantage compared to students fresh out of an undergraduate program and accustomed to preparing research papers and taking tests. This feeling can be overcome by taking advantage of noncredit courses in study skills and time management and review courses in math and writing, as well as by taking a tour of the library and becoming thoroughly familiar with it. By the end of the graduate program, most returning students feel that their life experience gave them an edge, because they could use concrete experiences to help them understand academic theory.

If you choose to go back to school, you are not alone. One out of 5 adults is currently enrolled in some kind of educational program in order to make his or her life or career more rewarding.

Part-Time Students

As graduate education has changed over the past thirty years, the number of part-time graduate programs has increased. Traditionally, graduate programs were completed by full-time students. Graduate schools instituted residence requirements, demanding that students take a full course load for a certain number of consecutive semesters, because it was felt that total immersion in the field of study and extensive interaction with the faculty were necessary in order to achieve mastery of an academic area.

In most academic Ph.D. programs as well as many health-care fields, this is still the only approach. However, many other programs now admit part-time students or allow a portion of the requirements to be completed on a part-time basis. Professional schools are more likely to allow part-time study because many students work full-time in the field and pursue their degree in order to enhance their career credentials. Other applicants choose part-time study because of financial considerations. By continuing to work full-time while attending school, they take fewer economic risks.

Part-time programs vary considerably in quality and admissions standards. When evaluating a part-time program, use the same criteria you would use in judging the reputation of any graduate program. Some schools use more adjunct faculty members with weaker academic training for their night and weekend courses, and this could lower the quality of the program; however, adjunct lecturers often have excellent experiential knowledge. Admissions standards may be lower for a part-time program than for an equivalent full-time program at the same school, but, again, your fellow students in the part-time program may be practicing in the field and have much to add to class discussions. Another concern is placement opportunities upon completion of the program. Some schools may not offer placement services to part-time students, and

many employers do not value part-time training as highly as a full-time education. However, if a part-time program is the best option for you, do not hesitate to enroll after carefully researching available programs.

Foreign Students

If you are a foreign student, you will follow the same application procedures as other graduate school applicants. However, there are additional requirements you will have to meet in order to study in the United States.

Since your success as a graduate student will depend on your ability to understand, write, read, and speak English, you will be required to take the Test of English as a Foreign Language (TOEFL), or a similar test, if English is not your native language. Some schools will waive the language test requirement, however, if you have a degree from a college or university in a country where the native language is English or if you have studied two or more years in an undergraduate or graduate program in a country where the native language is English. As for all other tests, score requirements vary, but some schools admit students with lower scores on the condition that they enroll in an intensive English program before or during their graduate study. Some programs may also be willing to accept the TOEFL score as a substitute for that of the normally required graduate admission test. You should ask each school about its policies.

In addition to scores on your English test, or proof of competence in English, your formal application must be accompanied by a certified English translation of your academic transcripts. You may also be required to submit certain health certificates and documented evidence of financial support at the time of application. However, since you may apply for financial assistance from graduate schools as well as other sources, some institutions require evidence of financial support only as the last step in your formal admittance and may grant you conditional acceptance first.

Once you have been formally admitted into a graduate program, the school will send you Form I-20, Certificate of Eligibility for Non-Immigrant Student Status. You must present this document, along with a passport from your own government and certain health certificates, to a U.S. embassy or consulate in order to obtain a foreign student visa.

Your own government may have other requirements you must meet in order to study in the United States. Be sure to investigate those requirements as well.

Once all the paperwork has been completed and approved, you are ready to make your travel arrangements. If your port of entry into the United States will be New York's Kennedy Airport, you can arrange to be met and assisted by a representative of the YMCA International Student Service (ISS). This person, at no cost to you, will help you through customs and assist you in making travel connections. He or she can also help you find temporary overnight accommodations, if needed. If you are interested in this assistance, you should provide ISS with the following information: your name, age, sex, date and time of arrival, airline and flight number, college or university you will be attending, sponsoring agency (if any), and connecting flight information. Include a passport photo to help ISS find you, and note if you need overnight accommodations in New York. This information should be sent well in advance to International Student Service, Arrival Program, 356 West 34th Street, Third Floor, New York, New York 10001. You can also reach ISS by telex (ISS 620675), by telefax (212-563-3783), and by phone (212-563-0966).

When you arrive on your American college campus, you will want to contact the foreign student adviser. This person's job is to help international students in their academic and social adjustment. The foreign student adviser often coordinates special orientation programs for new foreign students, which may consist of lectures on American culture, intensive language instruction, campus tours, academic placement examinations, and visits to places of cultural interest in the community. The

foreign student adviser will also help you with immigration and financial concerns.

A number of nonprofit educational organizations are available throughout the world to assist foreign students in planning graduate study in the United States. To learn how to contact these organizations for detailed information about international education, write to the U.S. embassy in your country.

Jane E. Levy
Associate Director for
Preprofessional Advising
University Career Center
Cornell University
and
Elinor R. Workman
Director of Alumni and
Career Management
Graduate School of Business
University of Chicago

Financial Aid for Graduate and Professional Education

If you are considering attending graduate school but do not have sufficient resources to finance such a costly endeavor, do not despair. Aid for graduate study does exist, and the prospects for future graduate education funding are brighter.

Basically, there are three ways to finance a graduate education—grants, loans, and work—and there are several sources of graduate support. Federal and state governments, private foundations, and, most significantly, universities themselves are all good sources of graduate aid. If you are seriously interested in graduate study, you should not be discouraged by a lack of personal funds; rather, you should energetically investigate *all* sources of graduate funding and apply for all the types of aid for which you may be eligible.

How and When to Apply

If, after estimating your expenses at the graduate schools that interest you, you conclude that you will need some help in meeting these costs, you should apply for financial aid. Do not write off any school as too expensive until you know what financial aid it offers.

Because every institution has its own application process, as well as its own system for awarding aid, you should communicate directly with each school and in some cases with each academic department that interests you. At the graduate and professional school level, financial aid sometimes is administered by the academic departments, unlike the way aid is handled at the undergraduate level. Also, you should read the school's application, brochures, and catalogs for information about financial aid.

Application deadlines vary. Some schools require you to apply for aid when applying for admission. Other schools require that you be admitted before applying for aid. Aid application instructions and deadlines should be clearly stated in each school's application material.

The process of applying for aid can be confusing and time consuming, especially for the first-time applicant. You can alleviate some anxiety and even increase your chances of getting aid by doing the following:

- Apply to as many sources as you can find.
- Make sure you have completed all of the forms required by each school. Many schools use a document such as the Graduate and Professional School Financial Aid Service (GAPSFAS) form or the Financial Aid Form (FAF), provided by the College Scholarship Service (CSS), to assist them in determining your financial need. This process is called need analysis. GAPSFAS can be reached toll-free at 800-448-4631. Some schools require their own institutional forms in addition to the FAF or GAPSFAS form. There are other federally approved need analysis services used by graduate schools or by the school's central financial aid office. You may also be asked to submit copies of your federal income tax forms and financial aid transcripts from schools you attended previously. Be sure you read the schools' financial aid application instructions and complete the correct forms.
- Complete all forms legibly and accurately. Check your applications; errors and omissions often cause problems.
- Follow up on your aid application if you receive no response within a reasonable period of time.
- Keep copies of all forms.
- Apply for aid every year if you feel you need it. If you have special circumstances, communicate them directly to the financial aid officer both before and (if necessary) after the aid decision is made.
- In investigating financial aid opportunities, be aware that programs may change from year to year. It is up to you to find out if any changes have occurred.

Determining Financial Need

Most federal, most state, and some university aid is awarded on the basis of need. Need is normally defined as the difference between your basic educational budget—the cost of education including tuition and living expenses—and your resources. Resources may include such things as savings from summer earnings, earnings during the school year, spouses' earnings, and savings.

According to the federal government, you are independent if you are 24 years of age or over, or if you are under 24 and not claimed as a dependent for income tax purposes for the first calendar year of the year in which you are seeking financial aid. For example, those who indicate they will not be claimed as dependents in 1991 will be considered independent for the 1991-92 academic year.

Keep in mind, however, that while some schools do not view parents as a source of financial support, others require parental information and expect a contribution from those who are able to provide it, even if you are an independent student. Moreover, most schools expect the spouse of a married student to provide at least a contribution toward living expenses.

As noted above, many graduate schools use the GAPSFAS form or FAF. Both of these forms ask for information about your income, assets, and debts and, in some instances explained above, the income, assets, and debts of your parents. Once you submit the appropriate form to the processing center, a need analysis document is sent to the schools you have designated. Individual schools then make financial aid awards according to their own standards. (Neither GAPSFAS nor CSS awards financial aid.)

Types of Aid Available

The range of financial assistance available at the graduate level is very broad. There are three basic types of aid—grants and fellowships, work programs, and loans—and various sources—the federal government, state governments, educational institutions, foundations, corporations, and other private organizations such as professional associations.

GRANTS AND FELLOWSHIPS

Most grants and fellowships are outright awards that require no service in return. Often they provide the cost of tuition and fees plus a stipend to cover living expenses. Some are based exclusively on financial need, some exclusively on academic merit, and some on a combination of need and merit.

The meanings of these terms are often misunderstood. As a rule, grants are awarded to those with financial need, although they may require the recipient to have expertise in a certain field. The term "fellowship" (sometimes used interchangeably with "scholarship") connotes selectivity based on ability. Financial need is usually not a factor in awarding fellowships.

As a result of the Tax Reform Act of 1986, money provided by grants, scholarships, and fellowships is considered taxable income. That portion of the grant used for payment of tuition and course-required fees, books, supplies, and equipment is excludable from taxable income. Other student support, such as stipends and wages paid to research assistants and teaching assistants, is taxable income. Student loans are not taxable.

Federal Support

Several federal agencies fund fellowship and traineeship programs providing over \$200-million in support for graduate and professional

students. These agencies include the National Institutes of Health, National Science Foundation, National Aeronautics and Space Administration, U.S. Information Agency, and U.S. Departments of Agriculture, Defense, Education, and Energy. The amounts and types of assistance offered through federally funded fellowships vary considerably. For example, National Science Foundation Fellowships include tuition and fees plus an annual stipend (currently \$14,000) for three years of graduate study in engineering, mathematics, the natural sciences, the social sciences, and the history and philosophy of science. The application deadline is in early November. For more information, contact the Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418 (telephone: 202-334-2872).

The Jacob Javits Fellowship Program is a grant program for students in the arts, humanities, and social sciences to use at the school of their choice. Graduate students apply directly to the U.S. Department of Education. The school the Javits Fellow attends receives up to \$6000 toward the cost of tuition. If the tuition exceeds \$6000, the school is obliged to cover the additional tuition cost in the form of a grant. In addition, Javits Fellows receive as much as \$10,000 in stipend, depending upon financial need and available funding. Application requests should be addressed to Dr. Allen Cissell, Director, Jacob Javits Fellowship Program, U.S. Department of Education, 400 Maryland Avenue, SW, ROB-3, Washington, D.C. 20202-5251 (telephone: 202-708-9415). The application deadline is in early February.

The National Institutes of Health offer training grants administered through schools' academic departments. Training grants provide tuition plus a monthly stipend of \$708.

The G.I. bill has been replaced by a series of programs. Veterans may use their educational benefits for training at the graduate and professional level and should contact their regional office of the Veterans Administration for more details.

State Support

Some states offer support for graduate study. Those with the biggest programs are California, Michigan, New York, Oklahoma, and Texas. Over \$40-million is awarded nationally in grants, loans, and work programs for graduate study each year; two thirds of the awards are need based, and one third are based upon academic merit. Due to fiscal constraints, some states have had to reduce or eliminate their financial aid programs for graduate study.

To qualify for a particular state's aid, you must be a resident of that state. Residency is established in most states after you have lived there for at least twelve consecutive months prior to enrolling in school. Many states provide funds for in-state students only; that is, funds are not transferable out of state. You should contact your state scholarship office directly to determine what aid it offers.

Institutional Aid

Educational institutions using their own funds provide between \$1.5-billion and \$2-billion in graduate assistance in the form of fellowships, tuition waivers, and assistantships. Consult each school's catalog for information about its aid programs. In graduate programs in the arts and sciences, much of the funding is awarded on a basis of merit. At the professional schools (law, business, medicine, etc.), much of the aid is need based.

Corporate Aid

Corporations provide several sources of support to students. One is in the form of the research they sponsor at universities. Another source is the tuition support they provide for their employees, usually so that they may attend school part-time while working. Most employees who receive this type of aid study at the master's level or take courses without enrolling in a particular degree program. *Corporate Tuition Aid Programs: A Directory of College Financial Aid for Employees at America's Largest Corporations*, by Joseph P. O'Neill (distributed for Conference University Press by Peterson's Guides, P.O. Box 2123, Princeton, New Jersey 08543-2123), contains information about the employee educational benefits provided by 735 of the largest banks, industrial firms, utilities, retailers, and transportation companies in the country.

Aid from Foundations

Foundations provide support in areas of interest to them. For example, the Howard Hughes Institute funds students in biomedical sciences and the Spencer Foundation funds dissertation research in the field of education.

The Foundation Center in New York City publishes several reference books on foundation support for graduate study. The center is located at 79 Fifth Avenue, 8th Floor, New York, New York 10003-3050 (telephone: 212-620-4230). They also have a computerized databank called Comsearch, which, for a fee, will produce a listing of grant possibilities in a variety of fields.

Researching Grants and Fellowships

Before undertaking graduate study, you should vigorously research all funding possibilities. The books listed below are good sources of information on grant and fellowship support for graduate education and should be consulted before you resort to borrowing.

Annual Register of Grant Support: A Directory of Funding Sources 1989-90. 23rd ed. Wilmette, Illinois: National Register Publishing, 1988. A comprehensive guide to grants and awards from government agencies, foundations, and business and professional organizations.

Corporate Foundation Profiles. 6th ed. New York: Foundation Center, 1990. An in-depth, analytical profile of 234 of the largest company-sponsored foundations in the United States. Brief descriptions of all 701 company-sponsored foundations are also included. There is an index of subjects, types of support, and geographical locations.

The Foundation Directory, 13th edition, edited by Stan Olson (New York: Foundation Center, 1990), with supplement, gives detailed information on U.S. foundations, with brief descriptions of their purpose and activities.

The Grants Register 1989-91. 11th ed. Edited by Roland Turner. New York: St. Martin's. Lists grant agencies alphabetically and gives information on awards available to graduate students, young professionals, and scholars for study and research.

Peterson's Grants for Graduate Study. 3rd ed. Princeton: Peterson's Guides, 1992. Nearly 700 grants and fellowships are described. Originally compiled by the Office of Research Affairs at the Graduate School of the University of Massachusetts at Amherst, this guide is updated periodically by Peterson's.

Scholarships, Fellowships and Loans. Volume 8. Edited by S. Norman and Marie Feingold. Bethesda: Bellman Publishing, 1986. Lists U.S. foundations and agencies offering financial support for undergraduate and graduate research and study. Sources are primarily for U.S. citizens or U.S. permanent residents, although some of the information may be helpful to foreign nationals.

Graduate schools sometimes publish listings of support sources in their catalogs, and some provide separate publications, such as the *Graduate Guide to Grants*, compiled by the Harvard Graduate School of Arts and Sciences (GSAS). Copies may be obtained for \$18 (includes shipping and handling) by contacting GSAS, 8 Garden Street, Cambridge, Massachusetts 02138 (telephone: 617-495-1814).

WORK PROGRAMS

Certain types of support, such as teaching, research, and administrative assistantships, require recipients to provide service to the university in exchange for a salary or stipend; sometimes tuition is also provided or waived. For example, resident assistants live in an undergraduate dormitory in exchange for free or partially funded room and board. Assistantship responsibilities vary from school to school and from department to department.

Teaching Assistantships

If you pursue an advanced degree in a subject that is taught at the undergraduate level—for example, in the arts and sciences—you may have a good chance of securing a teaching assistantship. Such a position may involve delivering lectures, correcting classwork, grading papers, counseling students, and supervising laboratory groups; usually about 20 hours of work is required each week.