

Directory of Graduate Programs: 1990 & 1991

Volume C

Physical Sciences

Mathematics

Engineering

Twelfth Edition

Directory of Graduate Programs: 1990 & 1991

Volume C

Physical Sciences

Mathematics

Engineering

*A service of the Graduate Record Examinations Board
and the Council of Graduate Schools*



Educational Testing Service
Princeton, New Jersey 08541-6000

Sponsored by the Graduate Record Examinations Board and
the Council of Graduate Schools

Published by
Educational Testing Service, Princeton, NJ 08541-6000

The Graduate Record Examinations Board and Educational Testing
Service are dedicated to the principle of equal opportunity,
and their programs, services, and employment policies are guided
by that principle.

Graduate Record Examinations and Educational Testing Service are U.S.
registered trademarks of Educational Testing Service. GRE, ETS, and
the ETS logo design are registered in the USA and many other countries.

In association with Warner Books, Inc., a Warner Communications
Company

Copyright © 1989 by Educational Testing Service. All
rights reserved.

Library of Congress Catalog Number: 82-642078

ISBN Numbers:

Volume A: USA, 0-446-39079-8; CAN, 0-446-39078-X

Volume B: USA, 0-446-39082-8; CAN, 0-446-39081-X

Volume C: USA, 0-446-39083-6; CAN, 0-446-39084-4

Volume D: USA, 0-446-39085-2; CAN, 0-446-39086-0

**Services Committee of the
Graduate Record Examinations Board
1989**

Harold L. Allen, University of Toledo

Anthony Barnard, The University of Alabama at Birmingham

Sarita E. Brown, University of Texas at Austin

Robert E. Bunselmeyer, Yale University

Helen S. Cairns, Queens College of CUNY

Donald V. DeRosa, University of North Carolina at Greensboro

Jeanne E. Gullahorn, The University at Albany, SUNY, *Chair*

Lee B. Jones, University of Nebraska, Lincoln

Madelyn M. Lockhart, University of Florida

Suzanne Reid-Williams, Western Illinois University

Reuben W. Smith, University of the Pacific

Other Services of the Graduate Record Examinations Board

The **Fee Waiver Program** provides certificates that are acceptable in lieu of GRE® test fees. The aim of the program is to assure that the test fees themselves are not a barrier to graduate study. Fee waiver certificates are supplied to participating undergraduate institutions in the United States, Puerto Rico, and U.S. Territories to be distributed to their seniors who qualify on the basis of United States citizenship and financial need, usually upon request by the student to the undergraduate financial aid office.

The **Graduate Student Locator Service** and the **Minority Graduate Student Locator Service** assist institutions in recruiting qualified applicants for their programs and help students locate programs that meet their needs. Both services are offered at no charge to prospective graduate students, and registration for these search services does not require registration for GRE tests. To be included in the GRE Locator Services, students complete the appropriate sections of the GRE registration form and supply information about their backgrounds, educational goals, and geographic preferences. The computer files are searched five times a year using selected criteria. The names and background information of students located in the search are reported to the institution by a variety of reporting options for further action. For additional information about these programs, write to: GRE Locator Services, Educational Testing Service, P.O. Box 6010, Princeton, NJ 08541-6010.

A **practice GRE General Test**, registration instructions, and test preparation information is included in each annual edition of the *GRE Information Bulletin*. The *GRE Information Bulletin* is free, and it is available at most undergraduate colleges or upon request from Educational Testing Service, Princeton, NJ 08541-6000.

Preface

The prospective graduate student, starting with an intended field of study in mind, must first find out which graduate schools offer programs in that field and how and where to obtain further information about the institutions that appear most promising in this initial exploration.

The *Directory of Graduate Programs* is intended to facilitate this initial step. By following the directions given in the section, "How to Use This Directory," and using the work sheets on pages 3-4, prospective students should be able to identify many programs they will want to investigate further.

The *Directory of Graduate Programs* is published under the sponsorship of the Graduate Record Examinations Board and the Council of Graduate Schools. The Services Committee of the GRE Board provides policy direction and general supervision. The members of the Services Committee are listed at the front of this volume.

The twelfth edition of this publication includes more than 800 accredited graduate institutions in the United States. These institutions have been accredited, or are approved candidates for accreditation, by one of the regional accrediting associations recognized by the Council on Postsecondary Accreditation (COPA). Accreditation by a regional association indicates that all departments of an institution contribute to the achievement of objectives of quality the institution strives to uphold. The associations are listed at the end of Section V.

The *Directory*, provides tabular information for each institution on such topics as highest degree and number of degrees awarded, number of faculty and students, tuition and fees, admission prerequisites, and financial aid. Narrative information on such topics as application deadlines, degree requirements, library holdings, and research and computer facilities is also presented. We hope that all users will find this information helpful in their search for graduate programs.

Jeanne E. Gullahorn
Chair
Services Committee
Graduate Record Examinations Board

Introduction

The *Directory of Graduate Programs* includes a wealth of information about graduate schools. It is, therefore, a comprehensive, useful preliminary source if you are seeking answers to questions about graduate study. The *Directory* can help you identify institutions and programs you will want to investigate further. Statistical data and other reference information have been provided by the responding institutions, along with addresses where you may obtain specific application information and other details about housing, loans, and admission requirements.

All accredited institutions in the United States listed in the 1987-88 Accredited Institutions of Postsecondary Education of the Council on Postsecondary Education that offer master's or higher degrees were invited to supply information for this twelfth edition of the *Directory of Graduate Programs*. Graduate programs leading to traditionally professional degrees such as J.D., D.D.S., D.V.M., and M.D. were not included. Because all the information in the *Directory* was provided by the institutions that responded, neither the sponsoring organizations nor Educational Testing Service can guarantee its accuracy or completeness.

The list of programs included in this volume precedes Section I. Programs included in each of the other three volumes are listed at the end of the book. Each volume also includes an alphabetical index that references entries in all four volumes.

The volumes are divided into related subject fields as follows:

Volume A: Agriculture, Biological Sciences, Psychology, Health Sciences, and Home Economics

Volume B: Arts and Humanities

Volume C: Physical Sciences, Mathematics, and Engineering

Volume D: Social Sciences and Education

The book begins with a description of the *Directory* and how to use it and includes work sheets to help you assemble comparative information about programs and institutions that interest you. This is followed by general information about application procedures and financial aid that is intended to supplement the data you will gather from the tabular and narrative sections. We hope that the explanations in the next few pages will help you begin to formulate your plans for graduate study.

Volume C:

Table of Contents

Preface	v
Introduction	vii
Description of the <i>Directory of Graduate Programs</i>	1
How to Use This Directory	2
The Admissions Process	5
Financial Aid	7
Section I: Programs in This Volume	11
Section II: Special and Interdisciplinary Programs	117
Section II: Listing by State and Institution	148
Section III: Institutions	155
Section IV: Narratives	175
Section V: Addresses	285
Regional Institutional Accrediting Associations	313
Additional Resources	314
Programs in Other Volumes	316
Alphabetical Index of Programs	320

Description of the *Directory of Graduate Programs*

This introductory description is intended to explain and amplify the contents of the *Directory of Graduate Programs*.

Section I: Programs

There are 84 program tables divided among the four volumes of the *Directory*. Each program table represents a field of study included in the *Directory's* listing of programs or taxonomy. The tables describe programs that may include several subfields within them or that may be part of a larger structure. A program table may represent a single field of concentration offered in some institutions or may represent a subarea of a field as it is offered in other schools. For example, the biology departments of some institutions offer zoology in addition to some or all of the programs listed in the biology table, but the *Directory* provides a separate table for zoology and its several specialties. Thus, the biology table should not be presumed to represent the biology department of any graduate school.

No inference can be drawn about the organizational structure of any institution because of programs listed in any of the program tables. In like manner, no conclusion can be drawn about department size from the tables. The numbers given indicate the number of faculty members active in a given discipline without regard for departmental affiliations or allocations of faculty time.

Section II: Special and Interdisciplinary Programs

Section II of each volume is a single Special and Interdisciplinary Programs table describing programs and fields of concentration that do not fit into the *Directory's* taxonomy.

In assigning programs to this table, an effort was first made to fit the programs into the overall classification scheme. The governing principle in classifying programs was to list them where prospective students would be most likely to look for them. All four volumes of the *Directory* contain the same Section II. The programs of Section II are not categorized by discipline but are listed alphabetically by program name. An institutional listing for Section II appears at the end of the section.

Section III: Institutions

Section III summarizes general information about each institution in the volume and is arranged alphabetically by state.

The Section III table allows comparison of institutions on the basis of size. The numbers of graduate degrees awarded are

reported as three-year totals to smooth out year-to-year fluctuations such as those that might result from adding or dropping a program or group of programs.

Graduate tuition and fees shown in the table are those charged in academic year 1988-89 stated (at the option of the institution) either as the cost per credit hour or as the total cost for the academic year exclusive of summer session. Charges change from year to year, and in some institutions they are not uniform for all divisions; you should, therefore, be particularly careful to consult current graduate school catalogs concerning costs associated with the programs in which you are interested at the time you plan to enroll. Similar care should be taken with financial aid deadlines; these may differ from department to department; each institution's official catalog is the definitive source of information about all aspects of financial aid.

The institutions that appeal to you on your first skimming of a program table are likely to be much more distinguishable from each other as you pursue each one through the institutions table and through additional program tables. The entries in the right-hand column of the institutions table guide you to program tables that show the activities of each institution in other fields, some of which may be closely related to your field of interest. Such related activities may be important in comparing graduate schools with one another.

Section IV: Narratives

Section IV contains supplemental information in narrative form about the graduate schools that appear in one or more of the tabular sections and that submitted this information for publication in the *Directory*. These brief narratives should help you decide which institutions you want to learn more about.

Section V: Addresses

The addresses to write to for further information about each institution that appears in one or more of the tabular sections are listed in Section V.

Alphabetical Index of Programs

The alphabetical index lists programs that appear in all four volumes of the *Directory*. Program names that appear in the *Directory* are in standard type; similar or equivalent programs that institutions have reported are in italic type followed by names or code numbers in parentheses to identify the corresponding taxonomy names.

How to Use This Directory

You probably have a field of study in mind as you begin. The alphabetical index at the end of the volume will direct you to a program or programs of interest to you. You may also know some institutions you might like to attend. One of the chief uses of this *Directory* is to supply information about the programs you are considering. An equally important use, however, is to expand the number of institutions you will initially consider and then help you narrow this list to the institutions and programs that most effectively meet your needs and interests. The following suggestions are designed to help you make the most effective use of the *Directory*.

Turn to the page indicated in Section I of the appropriate volume to locate the program table for the program you have chosen. Note that, for some programs, a group of specific fields is identified by program codes in the upper right corner of the table. These codes also are included in the list of programs preceding Section I.

If you are uncertain about programs appropriate for you, seek help from your advisor or academic counselor. If you do not find a program appropriate to your interests among the program tables, you may want to consult the Special and Interdisciplinary Programs section. This section, Section II, is identical in each volume. The programs listed are special programs or cross-discipline programs that do not fit into the *Directory's* classification scheme. The programs are listed alphabetically by the name used at each institution. A listing of special and interdisciplinary programs by state and institution follows this table.

Using the Work Sheets

To begin, write the program name, and, if applicable, the program code or codes, on work sheet A in the upper left corner. Begin the entries on your work sheet by state, using as your guide the area of the country where you would most like to be located. This will serve as a way to limit your list. If you begin, for example, with a program code such as D10, anthropology, you will find that there are 123 graduate institutions offering anthropology. You might want to list all these institutions on your work sheet, in which case you will need to make photocopies of the work sheet on page 3 in this book; or you might select those located in certain regions. Either way, begin by listing the institutions you identify in the left column of work sheet A.

The headings at the top of the program table show the information provided for the programs in the *Directory*. Try to consider the information that is most important to you. For

example, you may be seeking a fellowship. Look across the headings to the first two columns under the heading "Financial Aid." Below the heading, there is a listing of the number of fellowships and traineeships available. This is subdivided further into total and first-year.

Reading down the column, you can select by state and then by institution those institutions offering fellowships to first-year students in the program you have chosen. Enter the figures from the fellowships and traineeships column in the table into column 17 of work sheet A, opposite each institution you have already listed.

When you have completed this step, go to the category of next greatest interest to you. Perhaps you want to be sure that the highest degree offered at each institution is a doctorate. Enter on your work sheet the highest degree offered by each institution you have listed or any other data you consider important in applying to graduate school. At this point, you would not add new institutions but would be interested in increasing the information about institutions you have already identified. Draw a line through institutions on the list that do not meet your requirements. In this case, cross out institutions that do not meet your requirements of offering first-year fellowships and a doctor's degree.

Perhaps the number of faculty available to the program area is of next greatest concern to you. You might decide on a faculty-student ratio of one faculty member per ten students as desirable. For the purpose of estimating faculty-student ratios, assume that all part-time faculty and part-time students are half-time. Therefore, you must first convert the figures given in the table for part-time faculty and students (columns 6 and 9) to estimated full-time equivalents by dividing the numbers in those columns in half. These numbers should be added to number of full-time faculty (column 5) and total number of full-time students (column 7), respectively. Then divide the resulting number of full-time equivalent students by the number of full-time equivalent faculty to get an estimated faculty-student ratio. For those institutions that meet your desired criterion for this ratio, enter in columns 5 and 7 on your work sheet the calculated figures for full-time equivalent faculty and students. Draw a line through the institutions that exceed the ratio you have decided is most appropriate.

Continue in this manner, selecting categories from the column headings until you have used all that are significant to you. You will find that your work sheet is beginning to show a selective list of institutions whose requirements are in keeping with your interests and prerequisites. When you have narrowed your choices to a reasonable number by identifying those programs that meet your absolute requirements, turn to the institutions table, Section III.

Program:

List state and institution name below:

[illegible]

This form may be photocopied.

Directory of Graduate Programs – Worksheet B

[illegible]

In this table, turn to each *state* you have listed on work sheet A and locate the *institutions* you listed there. Next, select from the column headings in this table a category of interest to you, such as tuition.

As before, read across the top of the column headings to columns 9 and 10 headed "Graduate Tuition and Fees, Academic Year 1988-89," and read down those columns to the first state and first institution within that state of interest to you. On work sheet B, enter the information for any institution already selected on work sheet A for which the amount of tuition is at or below the level you are able to pay. Continue listings until you have entered all institutions that have suitable tuition. Note in the comments and calculations column at the right any institution for which the tuition appears to be too high but which meets your other requirements. Later you may want to refer to the "Financial Aid" section on page 7 for information about financing your education.

Proceed in this manner until you have developed a list of institutions that meet all or most of your requirements. Turn to Section IV to see if the narrative descriptions of the institutions you have chosen will help you narrow your choices further. You may also find it helpful to consult one or more of the field-specific guides listed under "Additional Resources," particularly if any of the institutions on your list did not submit a narrative for inclusion in the *Directory*. Finally, turn to Section V, the addresses section, and write for further information about the programs and institutions you have selected.

Postcards for use in writing to graduate schools are included near the back of the *Directory*. These may be copied or duplicated if you need additional cards.

The Admissions Process

Generalizations about graduate admissions practices are not very helpful because each institution operates in its own way. Nevertheless, some general statements can be made about the admissions process that may help you plan an individual strategy.

General Requirements

All graduate schools and departments have requirements of some kind that applicants for admission must meet. Typically, these include undergraduate transcripts (used to obtain information about grade point average and course work applied toward a major), admission test scores, and letters of recommendation. In some fields such as art and music, samples of previous work—portfolios or sound recordings, for example—

may be required instead of or in addition to other evidence of talent. In others, an undergraduate major in the contemplated graduate field may be required.

Most institutions appraise each applicant individually on the basis of the applicant's total record, and the weight accorded any given factor varies widely from institution to institution and even from program to program and applicant to applicant.

Admission Tests

Two major examination programs are used in graduate admissions—the Graduate Record Examinations (GRE), sponsored by the Graduate Record Examinations Board and administered by Educational Testing Service, Princeton, New Jersey, and the Miller Analogies Test (MAT), produced by The Psychological Corporation, San Antonio, Texas.

The Miller Analogies Test is administered at about 600 licensed testing centers in 50 states and a number of foreign countries. The test is 50 minutes in length and consists entirely of analogies. You can obtain a list of test centers and a *Bulletin of Information*, which contains instructions for taking the test, by writing to The Psychological Corporation, Controlled Test Center, 555 Academic Court, San Antonio, Texas 78204.

The Graduate Record Examinations consist of a General Test measuring verbal, quantitative, and analytical abilities and Subject Tests measuring achievement in the following 15 fields:

Biology	Engineering	Music
Chemistry	Geology	Physics
Computer Science	History	Political Science
Economics	Literature in English	Psychology
Education	Mathematics	Sociology

The tests are given at centers throughout the United States and in foreign countries on specified dates throughout the year. You can obtain more information about the tests and registration for them by consulting the *GRE Information Bulletin*, available either from an undergraduate college or from Educational Testing Service. (Refer to the address on the back of the title page of this book.)

This *Directory* indicates which of the Graduate Record Examinations, if any, an institution requires or recommends as a prerequisite for admission. (It may be necessary to ask the institution which Subject Test is required, since this is not always obvious.)

If you expect to apply for admission to a program that requires any of the Graduate Record Examinations, you should select a test date well in advance of the application deadline.

Factors Involved in Selecting a Graduate School or Program

Choosing a graduate school and a specific program is a highly individual matter. Program and course offerings, the nature, size, and location of the institution, admission requirements, cost, and the availability of financial aid are among the important factors that bear on one's choice of institution. Other factors that should be carefully considered are the quality of the faculty, the job placement and achievements of the school's graduates, and the study resources available such as libraries, laboratories, and computer facilities.

The following steps may help narrow the range of individual choices.

- Study the information in this *Directory* carefully. It pertains to several of the areas enumerated above. Work sheets and suggestions for use of this *Directory* are provided on pages 2-5.
- Talk to alumni of the graduate programs or schools you are considering. You can often find informed graduates of those schools or programs on your campus or on one nearby. Remember that graduate school requirements change so be sure to get the most up-to-date information possible.
- Talk to department faculty and the graduate adviser at your college. They often have special insights about programs in graduate schools.
- Write to the graduate schools you are interested in, asking for a graduate catalog (addresses are provided in Section V of this book). It will be helpful to indicate the field of graduate study you have in mind. You might also write to the chairman of the department you are interested in, requesting information about your chosen field of concentration.
- If possible, visit the schools that interest you. You can learn much about an institution by looking at its physical facilities, talking to its students, and, usually by appointment, talking with the graduate adviser of the department you are interested in.

Above all, learn as much as you can about the graduate programs you are considering. Time and effort can be saved by narrowing the choices before you apply—and money, too, since most graduate schools charge a nonrefundable application fee.

When to Apply

To procrastinate in planning for graduate school can be a serious mistake. You should begin making applications at least

12 months before you expect to begin graduate study. Find out each institution's deadline; many institutions have provided information about application deadlines in their narratives in Section IV of this *Directory*. Completed applications, including test scores, references and undergraduate transcripts, should be received by the institution prior to the application deadline. Enclose a self-addressed postal card with your application, so you will receive confirmation that the application has been received. You should allow about 10 days for the return of the postal card before initiating further inquiries.

As mentioned above, make sure you take any required tests (such as the GRE or MAT) in time for the scores to be reported by the stated deadline. Also, remember that your undergraduate instructors and professors are asked to write many letters of recommendation and that they must write these letters in addition to their regular duties. Give them plenty of time.

If you plan to apply for financial aid, it is imperative that you file early. Check the institution's financial aid deadline in Section III of this book and make sure you make application well in advance of that date. *Note that often an institution's financial aid deadline may be earlier than the admissions application deadline.*

How to Apply to a Graduate School

When you make the initial contact with a graduate school, include your name and address and your intended field of study. It is important to describe your field of interest as clearly as possible. The quality of the responses you receive may depend upon the clarity and completeness of your inquiry. The postcards at the end of this volume may be used for this purpose. Send your request to the "General Information" address in Section V of this book. When the materials arrive, read them carefully, making sure that you thoroughly understand the programs offered and the institution's application procedures.

Once you have decided to apply to a specific graduate school, fill out the application form carefully and thoroughly. Assume that the school wants to know everything it asks for on the form and that the admissions officer will be sensitive to the neatness and the overall quality of what you submit.

The school may ask at least one question that will require a three- or four-paragraph answer. Devote serious thought and ample time to your response. Remember that the school wants to know how you think and how well you can transfer your thoughts to paper. Keep your statement brief and to the point, while at the same time including all pertinent information about your past experiences and your educational goals.

Individual statements vary widely in style and content, and this is desirable because it allows admissions directors to

differentiate among various applicants. Many graduate departments use these statements along with scores, transcripts, and recommendations, often weighting them as heavily as other factors being considered. It is, therefore, important to take the job of preparing a statement seriously. A well-prepared statement can highlight your abilities and achievements and help you make a good overall impression.

Find out early what supporting documents must accompany your application, such as undergraduate transcripts, test scores, and letters of recommendation, and make sure they can be provided in time to meet the stated deadline. Choose carefully the people you will ask to write letters of recommendation; give them stamped, addressed envelopes (postage for dozens of letters is expensive!) and follow up to see that the letters have been sent. It is generally best to ask former professors to write the letters unless the graduate school specifically says it wants someone else, such as the dean of the college, for example, to provide references. Make sure the people you select to write recommendations will be able to attest to your intellectual ability, motivation, and willingness to do work required of a graduate student.

Do not submit more information than a school requires. For example, additional recommendations will probably not be helpful. Since institutions usually do not act on an application until all materials have been received, it is well to keep in touch with them until you can ascertain that your transcript and all of your references have been received. This can be done by telephone to the graduate or departmental secretary or through postal cards you supply to the institution.

How Admission Decisions Are Made

The specific department an individual applies to has much to do with his or her admission. Although the final decision is usually made either by the graduate dean (or an associate) or by a faculty admissions committee, recommendations from faculty members of each department will weigh heavily.

Each graduate school chooses among applicants in its own way, basing its deliberations on the materials supplied by the applicants. In addition to undergraduate transcripts, test scores, applications, personal statements, and letters of recommendation, some graduate programs incorporate a selection interview into the decision process.

A Special Note for Foreign Students

In addition to the steps already described, there are some special procedures that may pertain to foreign students who

intend to apply for graduate study in the United States. All graduate schools require an indication of competence in English. This may take the form of a satisfactory score on the Test of English as a Foreign Language (TOEFL), administered by Educational Testing Service for the College Board and the Graduate Record Examinations Board, or a satisfactory score on a test devised and administered by the graduate school itself. The TOEFL test is offered every month at centers throughout the world. Information can be obtained by writing to Educational Testing Service, P.O. Box 6154, Princeton, NJ 08541-6154. If the TOEFL is required, you will need to have your official score report sent by ETS to the graduate school as part of your application for admission.

If you are a foreign student, you should apply especially early because of the problems of submitting scores, transcripts, and supporting documents. Moreover, many United States graduate schools have a limited number of places for foreign students and receive many more applications than they can accommodate.

Most of the graduate schools in the United States require foreign applicants to submit a certification of support, a statement attesting to the applicant's financial resources for the period of graduate study. Foreign students generally find financial aid from institutions so sharply limited that they must be essentially self-supporting during graduate study.

Financial Aid

The range of financial assistance at the graduate level is very broad. The following generalized descriptions will give you an idea of what you might expect and what will be expected of you if you are awarded financial assistance as a student at a graduate or professional school.

Fellowships, scholarships, and grants are usually outright awards of a few hundred to perhaps several thousand dollars with no service to the institution required in return. Fellowships and scholarships are usually awarded on the basis of merit and are highly competitive. Grants are awarded on the basis of financial need or special talent in a field of study. Many of these awards not only cover tuition, fees, and supplies but also include stipends for living expenses with allowances for dependents. However, the terms of each award should be examined because some do not permit recipients to supplement their income with outside work. Awards also vary in the number of years they may be used.

Teaching assistantships usually provide full or partial tuition remission and sometimes a stipend for expenses. Unlike fellow-

ships, scholarships, and grants, which require no service to the institution, teaching assistantships require recipients to provide the institution with a specific amount of undergraduate teaching. They are generally reserved for advanced graduate students, who are assigned to discussion sections of basic and elementary courses in the discipline. Some teaching assistants are restricted to grading papers, compiling bibliographies, or monitoring laboratories. At some graduate schools, teaching assistants must carry smaller course loads than regular full-time students.

Research assistantships are very similar to teaching assistantships in the manner in which financial assistance is provided. The difference is that recipients are given basic research assignments in their disciplines rather than teaching responsibilities. Often the work required is closely related to course work; in some instances it may be used to meet, in part, requirements of the degree program.

Administrative internships are similar to assistantships in application of financial aid funds, but the student is given an assignment on a part-time basis, usually as a special assistant to one of the university's administrative officers. The assignment may not necessarily be directly related to the recipient's discipline.

Dormitory and counseling assistantships are frequently assigned to graduate students in psychology, counseling, and social work. Duties can vary from being available in a dean's office for a specific number of hours for consultation with undergraduates to living in campus residences and being responsible for both counseling and administrative tasks or advising student activity groups. Dormitory assistantships sometimes include room and board in addition to tuition and stipends.

The GI Bill provides financial assistance for students who are veterans of the armed forces. If you are a veteran, contact your local Veterans Administration office to determine your eligibility and to get full details about benefits.

Loan programs. Graduate and professional students can borrow from three major federal student loan programs: Stafford Loans (formerly Guaranteed Student Loans), Perkins Loans (National Direct Student Loans), and Supplemental Loans for Students. The Stafford Loan (GSL) program is available through banks and other private lenders. Students are eligible to borrow \$7,500 per year up to a maximum of \$54,750 for undergraduate and graduate or professional education. There is a 5 percent origination fee, which is deducted from the

Loan Repayment Conversion Chart (Payback period = 10 years)			
Amount Borrowed	Approximate Monthly Repayment for:		
	Perkins Loan (5%)	Stafford (8%)	Stafford (9%)
\$ 5,000	\$ 53.04	\$ 61	\$ 63
6,000	63.64	73	76
7,000	74.25	85	89
8,000	84.86	97	101
9,000	95.46	109	114
10,000	106.07	121	127
11,000	116.68	133	139
12,000	127.28	146	152
13,000	— —	158	165
14,000	— —	170	177
15,000	— —	182	190
20,000	— —	243	253
25,000	— —	303	317

proceeds of the loan. (In addition, a state guarantee agency may charge an insurance fee of up to 3 percent of the unpaid principal balance of the loan.) Loan repayment is deferred while the student is in school and for a grace period of up to six months after studies have been discontinued. The government pays interest benefits for students while they are in school and during the grace period. After the grace period, interest begins to accrue at a 9 percent simple rate (8 percent, for first-time borrowers on or after September 13, 1983). For first-time Stafford Loan borrowers after July 1, 1988, the simple interest rate is 8 percent for the first four repayment years and 10 percent thereafter. The repayment period is normally ten years, with repayment generally on an equal monthly installment basis. A shorter repayment period may be required if a student borrows a small amount and must pay the minimum monthly installment of \$50. The need for and amount of a Stafford Loan are determined by GAPSFAS or another federally approved need analysis system.

The provisions of the Perkins Loan are similar, with some important exceptions. Perkins Loans are available only through institutions of higher education, and the interest rate is 5 percent. Also, lower-interest Perkins Loan funds are in shorter supply than Stafford Loan funds and must, according to government regulations, be awarded on the basis of financial need. Thus, schools often award Perkins Loans as supplementary loans of last resort to the neediest students. Graduate and professional students are also eligible to participate in the

Supplemental Loans for Students (formerly known as PLUS/ALAS loans) program established by Congress in the fall of 1986. (However, they are now required to apply for Stafford Loans before being eligible to apply for SLS loans.) SLS loans are guaranteed by the federal and state governments, but interest repayments are not subsidized. Eligible students can borrow \$4,000 per academic year (less Stafford Loan eligibility), and a cumulative amount of \$20,000. The maximum simple annual interest rate is variable. Repayments begin sixty days after disbursement of the loan, or interest can be paid quarterly, or interest and principal payments can be deferred while the student is in school, with the deferred interest being added to the principal amount of the loan (capitalization).

Because of the importance of repaying educational loans, the monthly repayment obligation should be considered by anyone who borrows to finance an education. The following chart shows how much a student who borrowed under one or both of these programs would have to repay each month after terminating studies. Other loan programs include Health Professions Student Loans, Health Education Assistance Loans, and institutional loans—which may have different repayment terms. Future repayment requirements should be estimated any time a loan is considered. Financial aid officers at colleges and universities can provide assistance with such estimates.

Employment is still another way some students finance their graduate studies. Recently, many graduate students have been awarded College Work-Study (CW-S) employment. The CW-S program is funded by the federal government and administered by colleges and universities. It provides jobs for students on campus and with private nonprofit organizations. Eligibility for College Work-Study employment is based on financial need.

A number of foundations and organizations offer scholarships and grants as incentives for individuals to enter specialized fields of study. In addition to being field specific, a number are intended for minority groups and women. Information about this type of financial aid should probably be obtained from the graduate department rather than from the institution.

These are generalized statements about financial aid at the graduate level. Because each institution allots its aid differently, you should communicate directly with the school and the

specific department of interest to you. It is not unusual, for example, to find that an endowment vested within a specific department supports one or more fellowships. You may fit its requirements and specifications precisely.

Remember that financial aid is limited and that available aid is awarded independently of the admission decision. Most applicants qualify, however, for the federally insured Stafford Loan. Awards are commonly made by a school after the student has been accepted by the school. Some schools have different addresses and offices for financial aid; these appear as separate listings in Section V of this book.

Applying for Financial Aid

Schools that award federal and institutional financial aid based on need will require you to complete a financial statement that will be used to determine your eligibility for assistance. Many schools will require that you file a financial statement provided by the Graduate and Professional School Financial Aid Service (GAPSFAS).¹

This service collects information about the financial resources and obligations of students, their spouses or prospective spouses, and, in some cases, their parents, analyzes such financial data to determine what contribution these resources could reasonably make toward educational costs, and transmits the information and analysis to participating schools for their use in allocating grants and loans. Decisions on awards are made by the institutions themselves after receiving the information and reports.

The GAPSFAS is under the policy direction of the Graduate and Professional Financial Aid Council, composed of representatives from the Graduate Record Examinations Board, the Law School Admission Council, the Graduate Management Admission Council, the Association of American Medical Colleges, the College Scholarship Service Council, and the Association of Theological Schools. Most institutions that participate in this service require you to file only one financial statement.

The table in Section III of this book indicates whether or not an institution requires the GAPSFAS financial statement. GAPSFAS forms are available at undergraduate financial aid offices or by writing directly to GAPSFAS, P.O. Box 6660, Princeton, NJ 08541-6660.