

CHAPTER 5

THE GRADUATE AND PROFESSIONAL EXPERIENCE

Case's graduate and professional programs are highly regarded; in some cases these programs are better known than the university's undergraduate programs. The current challenge for the graduate and professional schools is to go beyond the mission of providing their students with advanced knowledge in a chosen field by integrating the development of societal and professional values and competencies into their academic programs. This will enable students to develop as whole persons, prepared to contribute to their communities as well as their professions.

This aspiration to educate the whole person is the theme of the report issued by the Accreditation Subcommittee on Graduate and Professional Student Development (see Appendix 4). The section below provides a broad overview of issues such as financial support, faculty mentoring, and student diversity that influence the graduate and professional experience at Case.

OVERVIEW OF GRADUATE AND PROFESSIONAL EDUCATION

At Case, the graduate and professional programs are administered through a combination of structures. Graduate students are those students enrolled in generic master's (Master of Arts, Master of Science) or doctoral (Ph.D.) programs, which are provided by the faculties in arts and sciences, engineering, management, medicine, nursing, and applied social sciences, and for which administrative oversight is provided by the School of Graduate Studies. Professional students are those enrolled in all other post-baccalaureate programs. In fall

2004, a total of 1,963 students were enrolled in master's programs, 3,247 students were enrolled in doctoral programs, and 369 students were pursuing non-degree post-baccalaureate study.

In the 2004-05 academic year, the School of Graduate Studies administered graduate degrees in more than eighty programs in the humanities and social sciences, mathematics and sciences, in medical sciences, public health and bioethics, engineering, management, nursing, and social welfare. The school assists graduate students with issues pertaining to admissions, registration, and graduation. To underscore the significance of the School of Graduate Studies in relation to its constituencies, the first Handbook for Graduate Students was published in 2004.

Specialized professional degrees are administered through the individual schools that offer them. Currently, the schools and colleges offer eleven professional master's degrees (e.g., Master of Business Administration, Master of Science in Social Administration) and five professional doctorates (e.g., Doctor of Medicine, Executive Doctor of Management, Juris Doctor). Case also offers several dual degree programs that combine professional and graduate programs (e.g., the M.D./Ph.D. in cell biology) or two professional degree programs (e.g., the J.D./M.B.A.). In addition, there are some programs that lead to a single degree but are administered jointly by more than one school. For example, the Case School of Engineering and the Weatherhead School of Management offer a joint program that leads to a Master of Engineering and Management (M.E.M.) degree.

THE SCHOOL OF GRADUATE STUDIES

Admission and Enrollment

The table below presents the fall semester full-time and part-time degree-seeking enrollment in the School of Graduate Studies for the last ten years. Total graduate student enrollment has remained relatively constant during this period. More dramatic is the shift in the proportion of full-time students in the most recent two years. This may be attributed to the prevailing economic conditions.

School of Graduate Studies – Fall Semester Enrollment Statistics			
	Full-time	Part-time	Total
1993	820	1,097	1,917
1994	843	1,111	1,954
1995	911	1,178	2,089
1996	855	1,214	2,069
1997	854	1,199	2,053
1998	821	1,134	1,955
1999	908	1,050	1,958
2000	918	959	1,877
2001	995	890	1,885
2002	1,184	773	1,957
2003	1,231	794	2,025
2004	1,253	831	2,084

The table to the right presents the five-year enrollment trends for the various groups of graduate degree programs. Programs in the biomedical sciences continue a steady growth pattern, with enrollment increasing each of the last five years. Enrollment in the sciences generally continues to grow and is currently at an all-time high. Other programs have exhibited either a gradual decline or an irregular pattern in enrollments. A detailed discussion of enrollment in the graduate programs in humanities and social sciences, which was one of the concerns noted in the 1995 evaluation team report, may be found in Chapter 1.

Five Year Trends in Graduate Enrollment by Sector – Fall Terms					
	2000	2001	2002	2003	2004
Humanities and Social Sciences	318	311	304	324	316
Sciences	155	170	185	204	247
Engineering	616	605	629	650	631
Biomedical Sciences	531	543	602	630	682
Management	128	134	123	100	90
Nursing	73	70	63	69	64
Social Welfare	56	52	51	48	54
Total	1,877	1,885	1,957	2,025	2,084

The tables on the following page present admissions statistics for the School of Graduate Studies. Note that these statistics pertain only to those students who apply to begin their graduate studies at Case in the fall semester (which is not the only possible entry point), and so they show general trends only. Over the past ten years, the total number of graduate students applying for admission shows a cycle of increase and decrease that can be correlated inversely with the prevailing economic conditions. The fraction of domestic applicants offered admission has been fairly consistent over the past decade, and the yield has shown a slight upward trend overall. However, we note that the number of domestic applicants has generally declined from the numbers that were seen in the mid- to late 1990s. It remains a constant challenge to recruit high-quality domestic students to Case’s graduate programs.

During the past ten years, significant recruitment efforts aimed at prospective graduate students were undertaken. The Faculty Senate accepted the discussion paper *Graduate Student Recruiting and Enrollment* and recommended that the content be reviewed and implemented at the department level. A list of model practices that emphasized effective advertising, outreach, “bonding” with students, summer research experiences,

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summer or week-long institutes, and visits to minority feeder schools was also distributed. Efforts were made to involve emeriti faculty and alumni of the graduate programs in effective roles in graduate education such as recruiting and ongoing professional development. A publication entitled *Introducing Case Western Reserve University* was developed specifically for recruiting graduate students.

The quality of graduate students at Case as measured by GRE scores has remained consistent over the preceding ten years. The table below provides GRE data for students who matriculated at Case in the fall term of the years listed. Increasing the quality of the incoming class is an ongoing desire.

School of Graduate Studies – Number of Applications, Selectivity, and Yield Trends									
	Domestic			International			Overall		
Fall	Number	Selectivity ¹	Yield ²	Number	Selectivity ¹	Yield ²	Number	Selectivity ¹	Yield ²
1994	1,208	50%	24%	1,917	42%	7%	3,125	45%	14%
1995	1,224	52%	26%	1,981	43%	8%	3,205	46%	15%
1996	1,135	48%	26%	2,122	45%	7%	3,257	46%	14%
1997	915	56%	31%	2,156	37%	7%	3,071	43%	14%
1998	967	50%	25%	1,511	40%	9%	2,478	44%	15%
1999	984	53%	30%	1,856	35%	9%	2,840	42%	16%
2000	899	54%	28%	2,441	23%	6%	3,340	32%	12%
2001	790	58%	33%	2,952	21%	5%	3,742	29%	11%
2002	945	57%	32%	3,711	16%	4%	4,656	24%	10%
2003	1,080	54%	29%	4,315	16%	4%	5,395	23%	9%
2004	974	48%	30%	2,391	20%	5%	3,365	28%	13%

1 Selectivity = Number Admitted/Number Applied 2 Yield = Number Enrolled/ Number Admitted

School of Graduate Studies – Incoming Student Average GRE Scores									
	Domestic			International			Overall		
Fall	V1 ¹	Q2 ²	A3 ³	V1 ¹	Q2 ²	A3 ³	V1 ¹	Q2 ²	A3 ³
1994	567	615	628	490	739	637	533	669	632
1995	567	628	618	467	717	588	520	669	604
1996	551	635	621	469	736	620	511	684	621
1997	543	604	618	494	739	630	521	665	624
1998	537	614	625	492	725	614	516	666	620
1999	543	609	628	506	732	637	525	669	633
2000	529	611	624	531	752	674	530	681	649
2001	543	633	650	517	760	664	528	707	658
2002	539	625	633	523	764	691	531	687	659
2003	541	636	631	524	756	704	532	695	679
2004	534	646	640	529	756	681	532	684	664

1 V = Verbal; 2 Q = Quantitative; 3 A = Analytical

Improvement of Graduate Programs and Student Services

The School of Graduate Studies has explored and addressed a number of issues over the past ten years. Central themes that have emerged over this time period are the continuing need for assessment of the graduate programs and the processes through which they are administered, and the ongoing emphasis on creating value for the school's constituents. In the mid-1990s, for example, graduate students expressed significant concern over changes in the taxation policy that affected their stipends. University policy was ultimately changed to tax only the stipend portion of compensation charged to federal research grants, not the tuition remission portion. In 1995-96, a dissertation fellowship course was implemented to assist doctoral students in maintaining full-time status while in the advanced stages of their dissertation research. Teacher Assistant training was formalized and offered as a course, and a standard form for TA evaluation was developed for use by faculty and students.

Enhancements were made to office systems and many administrative processes were streamlined. The FileMaker Pro database was developed to track student degree progress, and other technological advances increased efficiency in record-keeping areas. In the late 1990s, approval was given to begin a pilot program on the adoption of electronic dissertation/thesis submission, and an online application was developed. The Electronic Dissertation System (ETD) and the online application system were fully implemented in 2002-03.

In the late 1990s, efforts were increased in the area of outcome assessment. A working paper was developed to outline criteria by which graduate programs could be evaluated. Variables such as the quality of applicants, time to degree completion, and proportion of domestic students were included in the criteria. In 1998, the School of Graduate Studies developed a survey for

new graduates and alumni five and ten years after degree completion; the objective was to learn more about the graduate student experience. Only students whose degrees were awarded by the Graduate School were included in the survey. Of the 852 surveys mailed, 137 new graduates and 116 alumni responded. The survey included rating questions scaled from one to five ("excellent" to "poor") and open-ended questions. Respondents were asked about the quality of their course work, training in critical thinking, problem solving, communication, professional socialization, and their satisfaction with the mentoring they received. They were also asked whether they considered their graduate training to be better or worse than that of peers in their field. Responses were reported for schools with four or more respondents.

The average student rating of their graduate experience at Case ranged from 2.5 (good to very good) in the Weatherhead School of Management to 1.7 (very good to excellent) in the School of Nursing. Students with graduate degrees from the College of Arts and Sciences, School of Medicine, and Case School of Engineering rated their experience somewhere in between. In all schools, the two categories that received the best rankings were training in critical thinking and problem solving. Generally, issues concerning professional development, professional socialization, and help with employment received the lowest rankings. This was true both for new graduates and alumni.

Selected survey results appear in the table on the following page. Overall student satisfaction with the graduate programs is quite high. Notable trends are increases in the satisfaction level with the amount of mentoring received, socialization into the professions, and the quality of preparation in communication and teaching skills. Further discussion of these survey results appears in the section on Graduate and Professional Student Development later in this chapter.

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Selected Survey Results – Graduates of the School of Graduate Studies											
	1998	1999	2002	2003	2004		1998	1999	2002	2003	2004
State-of-the-art quality?						Preparation in critical thinking?					
1) Excellent	17%	17%	13%	17%	18%	1) Excellent	40%	38%	41%	40%	38%
2) Very Good	46%	41%	34%	42%	43%	2) Very Good	40%	40%	31%	42%	44%
3) Good	31%	28%	41%	33%	32%	3) Good	16%	17%	19%	15%	15%
4) Fair	6%	11%	9%	5%	6%	4) Fair	3%	5%	6%	2%	4%
5) Poor	1%	2%	3%	2%	1%	5) Poor	1%	1%	3%	0%	0%
Provides in-depth knowledge?						Preparation in problem solving?					
1) Excellent	24%	24%	25%	24%	26%	1) Excellent	37%	34%	28%	36%	33%
2) Very Good	44%	40%	38%	47%	43%	2) Very Good	40%	41%	44%	42%	46%
3) Good	22%	28%	28%	23%	24%	3) Good	19%	19%	25%	19%	17%
4) Fair	8%	5%	9%	5%	7%	4) Fair	3%	5%	0%	3%	4%
5) Poor	0%	2%	0%	0%	0%	5) Poor	1%	1%	3%	0%	0%
Program allows for broad understanding?						Preparation in communication and teaching skills?					
1) Excellent	25%	24%	22%	27%	26%	1) Excellent	18%	22%	31%	21%	26%
2) Very Good	44%	39%	38%	43%	45%	2) Very Good	36%	35%	28%	43%	35%
3) Good	20%	27%	31%	23%	22%	3) Good	27%	29%	25%	25%	28%
4) Fair	8%	6%	6%	6%	6%	4) Fair	14%	10%	6%	10%	8%
5) Poor	1%	2%	3%	0%	1%	5) Poor	5%	3%	9%	1%	2%
Level of mentoring attention received?						Level of professional socialization?					
1) Excellent	33%	32%	28%	38%	37%	1) Excellent	19%	20%	25%	22%	23%
2) Very Good	31%	28%	28%	30%	28%	2) Very Good	26%	28%	22%	30%	29%
3) Good	21%	22%	28%	20%	23%	3) Good	32%	30%	31%	31%	29%
4) Fair	10%	11%	9%	8%	8%	4) Fair	17%	14%	16%	15%	16%
5) Poor	5%	7%	6%	4%	3%	5) Poor	7%	7%	6%	3%	4%
Opportunities for professional development?						Overall quality of program, compared to external peers?					
1) Excellent	31%	27%	30%	33%	37%	1) Much Better	21%	21%	23%	21%	22%
2) Very Good	34%	27%	33%	31%	31%	2) Better	46%	38%	26%	44%	45%
3) Good	22%	27%	14%	23%	20%	3) About the Same	29%	36%	42%	32%	31%
4) Fair	8%	13%	17%	9%	8%	4) Worse	3%	4%	9%	2%	2%
5) Poor	5%	7%	6%	4%	4%	5) Much Worse	0%	1%	0%	0%	0%

PROFESSIONAL EDUCATION

Case’s professional schools are well known and highly ranked. Many of the professional programs, particularly in health fields, are deliberately limited in size so that students are assured of effective mentoring, outstanding research opportunities, and access to sophisticated facilities. Entrance to the programs in law, medicine, nursing, dentistry, management, and social work is competitive, and students who earn their advanced degree at Case are well prepared for professional careers.

Enrollment trends for the professional schools are summarized in the table below. With the exception of the sharp declines in the management and applied social science programs, degree-seeking enrollments have remained relatively constant over the past ten years. In contrast, we do note the steady increase in enrollment in the dental medicine programs.

The following text provides an overview of the various professional programs at Case.

At the **School of Dental Medicine**, clinical experience begins in the first year. The incoming class is limited to seventy students, and each student gets an individual

operatory. The school’s unique Preceptor Program brings experienced dentists into the clinics to work with students. Training in practice management ensures not only clinical competence but also business knowledge. The curriculum leading to the D.M.D. constantly evolves to provide better, more comprehensive dental education. The school also offers postdoctoral training in several specialties leading to the M.S.D. degree. Additionally, the school operates a dental clinic on campus where students provide faculty-supervised dental service to area residents.

Since its founding in 1843, the **School of Medicine** has been at the forefront of medical education and research. In 1952, the medical school initiated the most advanced medical curriculum in the country, integrating the basic and clinical sciences, focusing on organ systems, and featuring an introduction to patient care in the first year. Case’s School of Medicine is one of only three schools in history to receive a flawless accreditation report from the Liaison Committee on Medical Education, the authority that grants accreditation to U.S. and Canadian M.D. programs. In addition to the M.D. degree, the school’s pre-clinical departments offer programs leading to the

Enrollment Trends in the Professional Programs										
	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Applied Social Sciences (MSSA)	301	287	295	292	306	353	414	488	482	461
Dental Medicine (DMD, MSD)	313	319	324	320	314	315	307	290	273	278
Law (JD, LL.M)	741	757	746	740	716	713	735	737	699	708
Management (MBA, MAcc, MSM)*	822	938	1,100	1,329	1,395	1,289	1,331	1,276	1,233	1,000
Medicine (MD)	582	557	544	540	566	570	561	566	582	573
Nursing (MSN, ND)	399	327	290	295	309	312	392	414	428	443
Total	3,158	3,185	3,299	3,516	3,606	3,552	3,740	3,771	3,697	3,463
*The entries for the Weatherhead School of Management in 1997-2002 include students enrolled in the joint MBA program with the International Management Center in Hungary										

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M.P.H. and to M.S., Ph.D., and M.D./Ph.D. degrees in the biomedical sciences.

The **Frances Payne Bolton School of Nursing** has traditionally been ranked as one of the top schools of nursing in the United States. The school offers three post-baccalaureate programs. The M.S.N. prepares registered nurses for advanced practice in more than a dozen specialty areas; the N.D. (Doctor of Nursing) is a professional clinical doctoral degree for students who already hold bachelor's degrees in the liberal arts or sciences; and the Ph.D. is intended for students interested in careers as nurse scientists. The Bolton School created the nation's first master's degree specialties for flight nursing and acute care nurse practitioners. The school seeks to graduate more nurses with higher degrees into the job market at decision-making levels.

Case's **School of Law** is committed to providing its students with the best possible legal education and career opportunities. Coursework emphasizes critical thinking and analysis; legal theory and perspectives; written and oral communication; and the skills, values and ethics of lawyers. The school's goal is to offer an education that prepares graduates for success in the practice of law, public and community service, and commerce in an environment where the nature of the legal profession is constantly evolving. The school became one of the first to fully integrate the teaching of legal skills (interviewing, counseling, and negotiating) with legal theory through the *CaseArc* program, introduced in 2003. In addition to the J.D. program, the school offers graduate instruction leading to the LL.M. in U.S. and global legal studies.

The **Weatherhead School of Management** is an international center of management scholarship, committed to preparing its students for organizational leadership. The school offers curricula leading to the M.B.A., M.Acc., M.S.M., Executive Doctor of Management (E.D.M.), and Ph.D. degrees in management, organizational behavior, operations research, and other areas of business administration. It participates in joint programs through the Mandel Center for Nonprofit Organizations and the Institute for Management and Engineering, leading to the M.N.O. and M.E.M. degrees, respectively. The Weatherhead

School is dedicated to making discoveries of enduring consequence, to developing innovative educational programs, to fostering strategic partnerships with students and organizations, and to providing services to multiple communities.

Consistently ranked as one of the top schools of social work in the country, the **Mandel School of Applied Social Sciences** offers programs that incorporate extensive field education leading to the Master of Science in Social Administration (M.S.S.A.) degree in social work and the Ph.D. in social welfare. The school also operates continuing education programs for social workers, nurses, and psychologists in the region. The school provides and integrates professional social work education, research, and service to promote social justice and empowerment in communities through social work practiced locally, nationally, and internationally.

FINANCIAL SUPPORT FOR POST-BACCALAUREATE STUDENTS

Financial incentives are often used to attract the best students to Case, and such support allows students to focus more fully on their graduate and professional experiences. The forms of aid vary widely across schools and programs, and include tuition waivers, stipends, assistantships, paid internships, merit scholarships, and loans. In some programs, students receive full tuition waivers and stipends throughout their years of study; in others, students may graduate with significant debt.

The **School of Graduate Studies** provides a number of awards and research fellowships ranging from \$500 to \$20,000 based on graduate students' academic promise, leadership ability, teaching excellence, and financial need. The school is also the coordinating office for students applying for National Science Foundation and Fulbright fellowships.

For more than twenty years, Graduate Studies administered and monitored the Alumni Annual Fund, which consisted of donations from graduate school alumni. However, in 1996-97 the Alumni Annual Fund was discontinued and the funds distributed to the individual

management centers. In 1997, the school developed an Emergency Loan Program to enable students to contend with short-term financial difficulties, but unfortunately that program was also discontinued in 2000.

The **Case School of Engineering** awards up to seventy Case Prime Fellowships each year, a number that is usually sufficient to support all entering full-time Ph.D. students in engineering and computer science. For 2004-05, these fellowships pay for eighteen credit hours of tuition and a nine-month stipend of \$1,650 per month. Most students are supported through research grants or contracts in the second through fifth years of their programs. The CSE pays for eight credits of tuition per year per student, while research grants or contracts awarded to the student's advisor pay for ten credit hours and the stipend.

There is no formal program of support for students pursuing master's degrees in engineering. Some departments support their master's students through service as teaching assistants, but department resources are relatively scarce for that purpose. The CSE does offer support for some students in the five-year B.S./M.S. programs through a limited number of Dean's Fellowships, which pay half tuition.

Support for doctoral students varies widely across the **College of Arts and Sciences**. In chemistry and physics, all first-year students receive tuition and a stipend from departmental funds. Beyond the first year, students are supported by research grants. In astronomy, biology, geological sciences, mathematics, and statistics, students are supported with tuition and stipend throughout their programs by departmental funds. These awards generally carry an obligation to serve as teaching or research assistants.

Support can range from full tuition plus stipend to partial tuition only in the humanities, arts, and social sciences. For example, the departments of English and history generally bring in a small number of first-year students with full tuition and stipend. Students in the M.F.A. program with the Cleveland Play House receive full tuition plus a stipend for all three years in the program. The Department of Psychology offers

its graduate students tuition plus stipend support through research assistantships or training grants. For clinical students not connected to a training grant, the department provides a full tuition waiver for the first four years and helps students obtain paid clinical placements.

About ninety percent of students in the master's degree program in social work at the **Mandel School of Applied Social Sciences** receive some form of financial aid, and nearly all have loans. All full-time master's students receive paid placements for their required field experience; many also receive some grant support. For 2002-03, the average grant or scholarship in the full-time program was \$7,800; the average paid placement was \$7,200. Each year several students also receive full-tuition scholarships. Approximately ten to twenty percent of students in the part-time program for employed social workers are funded by their agencies.

Full-time students in the Ph.D. in social welfare program are given research fellowships with a \$15,000 stipend and tuition waivers for six to nine credit hours per semester for the first two years of their studies. Part-time first-year students (i.e., those in the summer study program) are given waivers for half tuition but no stipend. Students beyond the first year can apply for fellowships and support from faculty research grants.

About ninety percent of students in the M.S.N. and N.D. programs at the **Bolton School of Nursing** receive financial aid from one or more sources, and most have loans. (Some federal loans have special forgiveness provisions for students who enter certain fields after graduation, including nursing and social work.) Students in the nurse-anesthesia program receive a third of their tuition, and students in the gerontological nurse practitioner program are eligible for half-tuition scholarships.

The school offers a few teaching assistantships for M.S.N. students who staff the learning lab, and some Ph.D. students have teaching assistantships in which they supervise the clinical experiences of the pre-licensure students. Some part-time students who work also get support from their employers, generally about \$2,000 to \$2,500 per year. N.D. students in the pre-licensure

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phase get some support from the school (\$3,500) until post-licensure, a sixteen-month period. After that, their support is similar to that of the M.S.N. students, and many work as nurses while they finish their degree.

Students in the Ph.D. in Nursing program are supported primarily through loans. Many of the international doctoral students in nursing have support from their governments. Most domestic Ph.D. students work as nurses to support their education.

At the **Weatherhead School of Management**, some merit scholarship aid is available for full-time M.B.A. students, though very few receive full-tuition scholarships. About a third of full-time M.B.A. students apply for loans through the school; the average indebtedness of 2003 graduates in the full-time program was \$37,169. For part-time evening students, thirty-eight percent are fully funded by their current employer, and another thirteen percent are partially funded. Employer support has been dropping, however, as companies trim fringe benefit programs. The Executive Doctor of Management program offers some partial fellowship aid, and students in Ph.D. programs are generally supported by their departments.

Students in the M.D. program at the **School of Medicine** generally finance their education through borrowing. In general, eighty to eighty-five percent of students receive some form of financial aid; about thirteen percent receive some merit-based aid. The average indebtedness for graduates in the class of 2003 was \$123,400. About five percent of medical students receive aid from the military, which provides stipend and tuition support.

Nearly all Ph.D. students in the biomedical sciences receive full support throughout their programs – tuition, stipend (set at \$22,000 for 2004-05), and paid health insurance. Support is more variable at the master's level, however, and some departments provide little or no support to master's students.

Education at Case's **School of Dental Medicine** is funded almost exclusively through heavy borrowing. Dental education is especially expensive because of the individual equipment required, and approximately ninety-five percent of students at Case have loans. The

median indebtedness of the class of 2003 was \$176,000, and many students owed more than \$200,000. About thirteen percent of students get some funding from the military, which pays for tuition, the student's equipment kit, and a taxable stipend of \$1,100 per month. The School of Dental Medicine has only about \$200,000 per year in merit aid for all classes, which it awards in the form of scholarships of \$5,000 to \$10,000.

About eighty-five percent of the students at the **School of Law** receive some form of financial aid, mainly in the form of loans. The average indebtedness of 2004 graduates who had loans was \$65,870. About a third of the entering class receives merit scholarships. The median grant for entering students is about fifty percent of tuition. Additionally, the school provides need-based grants of \$1,000 to \$11,000 to a few upper-level students. Some students work as research assistants or in other roles at the school, but jobs are not part of students' aid packages.

STUDENT DIVERSITY AT THE POST-BACCALAUREATE LEVEL

Attracting a diverse student population at the post-baccalaureate level presents different challenges to different disciplines. Overall, forty-eight percent of graduate and professional students enrolled in fall 2004 were women, and fifty-two percent were men. While this represents a reasonable gender balance, examining the populations on a school or programmatic basis reveals significant imbalances. There are, for example, needs to attract more women to specific disciplines such as science and engineering at Case (and nationally). The table on the following page shows the breakdown by gender and ethnicity of the graduate and professional degrees awarded during the 2003-04 academic year.

Students from all fifty states and more than eighty countries attend the university; in some programs, the number of international students exceeds the number of domestic students. Many of the graduate programs in chemistry, physics, and engineering are filled with international students; the challenge for those programs is to attract more highly qualified domestic students.

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Graduate and Professional Degrees Awarded by Gender and Ethnicity, 2003-04					
	Degrees Awarded	Women	Minority ^a	U.S.	International
Graduate Studies					
M.A.	89	71%	8%	91%	9%
M.Engr.	14	21%	7%	100%	0%
M.E.M.	31	26%	3%	84%	16%
M.F.A.	10	60%	10%	100%	0%
M.P.H.	11	91%	9%	82%	18%
M.S.	184	40%	2%	71%	29%
Ph.D.	188	46%	6%	64%	36%
Applied Social Sciences					
M.S.S.A.	143	92%	24%	100%	0%
Dental Medicine					
D.D.S. / D.M.D.	74	23%	4%	82%	18%
M.S.D.	12	8%	8%	75%	25%
Law					
J.D.	217	44%	6%	99%	1%
LL.M.	40	40%	5%	25%	75%
Management					
E.D.M.	15	33%	0%	93%	7%
M.Acc.	19	26%	5%	42%	58%
M.B.A.	391	33%	6%	76%	24%
M.N.O.	25	80%	24%	88%	12%
M.S.M.	14	43%	0%	43%	57%
Medicine					
M.D.	144	41%	9%	99%	1%
Nursing					
M.S.N.	93	95%	4%	98%	2%
N.D.	15	93%	13%	100%	0%
a. Students identified as African American, American Indian, or Hispanic.					

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As is true in Case's graduate programs, the professional schools vary in the ethnic diversity of their student populations. Case has, as one of its goals, the desire to increase the numbers of underrepresented minorities in all educational programs. Clearly, this is a challenge faced by many institutions of higher learning. Efforts remain in place, however, to ensure that the professional programs offer students a wide range of experiences to learn with and from a variety of individuals. Examples of programs to promote diversity in the professional schools are presented here.

The **School of Medicine** has a long history of providing experiences for underrepresented minority students to gain exposure to educational and research opportunities in medicine. The Office of Multicultural Programs within the School of Medicine administers several programs for underrepresented minority students.

The Health Careers Enhancement Program for Medicine (HCEM), funded by the Robert Wood Johnson Foundation as part of its Summer Medical Education Program, provides opportunities for up to 125, primarily minority, college students to participate in a rigorous six-week summer program designed to encourage students to pursue careers in medicine. The program includes a series of lectures presented by faculty members with intensive research programs. The lectures focus on biomedical research in biochemistry, immunology, neurosciences, genetics, pharmacology, and virology. Participants also receive assistance in preparing for the Medical College Admission Test (MCAT). The program is designed to expose minority students to horizons of research in biology and medicine, and to provide the opportunity to interface with many physician role models. Approximately sixty-five to seventy percent of the HCEM students who apply to medical school are accepted. One-third of all the minority students in the Case School of Medicine are graduates of the HCEM program.

The Biomedical Training Program for Minorities provides opportunities for two or three African-American or Latino students who have just completed their undergraduate studies to spend a year working with an outstanding faculty member who leads a basic science research program, and to take one science class each semester.

In 2000, the U.S. Congress provided funding to Case's **Mandel School of Applied Social Sciences** in honor of the life work of retired Northeast Ohio Congressman Louis Stokes. The goals of the Louis B. Stokes Fellowship Program are: (1) to facilitate the graduate professional education of outstanding candidates in the southeast, as well as other areas of the United States, who are committed to community development; (2) to attract a greater number of African-American and Hispanic practitioners to advanced social work education, helping meet the need for more diversity in the profession; and (3) to foster future leadership in community building, community development, and housing. Federal funding for the Stokes Fellowships provides full tuition and a travel stipend to the fellows to obtain the M.S.S.A. degree with a focus in community development. This community development concentration allows the student to become a catalyst for building and rebuilding local communities.

The Stokes Fellows enter in the fall and take part in the Mandel School's Intensive Weekend format, attending class on campus one weekend per month for three years. This permits the student to remain employed in a community development position in the home community. The fellows' learning experience is further enhanced by participating in several hands-on field education projects over the course of the program. This field education takes place in the home community, and projects are often done in the student's home organization. In addition, the Stokes Fellows, as a group, are offered occasional social and educational opportunities for interaction. They are also linked electronically, and are thus able to discuss pertinent issues about their experiences with each other in a timely manner. The Stokes Fellowship has additional criteria to foster minority leadership in the community development field.

Over the last four years, the Mandel School has awarded seventeen Stokes Fellowships to an outstanding group of professionals. The first three cohorts comprised a total of fourteen fellows. Of these, three have graduated, and the rest are moving through their course work and field work. The newest cohort of three entered the Mandel School in fall 2004.

GRADUATE AND PROFESSIONAL STUDENT DEVELOPMENT

Mentoring, teaching, and professional development experiences play significant roles in the transformation of graduate and professional students at Case. In recent years, the School of Graduate Studies has focused on providing students with multiple opportunities for professional development. The Preparing Future Faculty seminar series began in 2002-03, and the Excellence in Graduate Education Award, in which departments can apply for funding to support students' professional development, was implemented in 2003-04. All departments whose graduate programs fall under the administrative structure of the School of Graduate Studies emphasize the importance of close individualized mentoring. Some departments have both academic and research mentors, and some faculty mentors devote significant effort to preparing students for teaching experiences.

Many graduate students support their educational expenses through service as teaching assistants. To help prepare students for these responsibilities, Case requires all graduate (and undergraduate) students who have teaching responsibilities (including leading recitations, assisting in laboratories, acting as graders) to complete a series of seminars provided in the course UNIV 400¹ by the ESS (Educational Support for Students) office. International students, especially those for whom English is not a first language, are provided extra sessions and help.

Departments in the College of Arts and Sciences provide opportunities for graduate students to engage as either teaching assistants or as instructors of record. Art education and music education courses at the graduate level culminate in a student teaching experience. The Department of Psychology uses a systematic approach to developing teaching skills through which first-year students take a course in teaching and then serve as teaching assistants in the second year. Third-year students may offer a one-credit undergraduate course under the mentorship of a faculty member, and fourth-year students may teach a full course under mentorship.

The Department of English trains composition and SAGES instructors through a formal course and “shadowing” experiences, and some students are offered positions as assistants to program directors within the department. The departments of Mathematics and Statistics offer a formal course to train graduate students to assume a portion of those departments' undergraduate teaching responsibilities.

All academic departments encourage graduate students to attend professional conferences, and students are often published authors before they complete their degrees. The Endowment-Sponsored Mentorship Program of the School of Graduate Studies provides one-time support for full-time students to travel to conferences at which papers and/or posters are presented. A faculty mentor must endorse the application for support, and departments are expected to contribute matching funds. Also, an Excellence in Graduate Education Fellowship is provided to support departmental efforts to socialize and prepare students for academic and professional careers.

Professional programs integrate the development of professional identity into their curricula from the outset. Skills and behaviors are developed through curricula, clinical experiences (both simulated and real-life), field placements, and such co-curricular activities as mentor programs, academic competitions, and student organizations.

SELF-REPORTED STUDENT DEVELOPMENT: RESULTS FROM THE SUBCOMMITTEE SURVEY

The Graduate School survey described earlier in this chapter provided a useful departure point for the Subcommittee on Graduate and Professional Student Development to examine the professional development of Case students in all graduate and professional programs. Until this 2004 initiative, there had not been such a broad study at Case, and no national surveys of graduate student development existed at the time of the 2004 study. The subcommittee set out to determine the unique features of the “Case experience” for graduate and professional students.

1. A full description and syllabus for UNIV 400 is available at http://studentaffairs.case.edu/education/services/tatrainning/pdf/TA_Syllabus04.pdf

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The 1998 survey was revised and expanded by the subcommittee to inquire about eight aspects of the student experience and their impact on student development. All graduate and professional students expected to complete their programs in May or August 2004 were surveyed, along with Ph.D. students in their third year of study or beyond. Focus groups were subsequently convened in each of the schools and colleges to follow up on the survey results in more depth.

As part of the subcommittee's survey, respondents were asked to indicate the three experiences at Case that they believe most contributed to their development. Academic activities and experiences were cited much more frequently than other types of experiences. Practice-based learning experiences were mentioned next most frequently. Professional growth was mentioned less frequently.

In terms of academic course work, students rated their courses from good to excellent. They reported that the currency of the subject matter in their courses had more impact on their development than any other single factor. They also reported that their studies provided them a broad understanding of their field, and that they were intellectually challenged. Ratings for effectiveness of teaching methods used and quality of feedback received were somewhat lower, although on average the ratings were still in the range of good to very good. The majority of students in the focus groups felt the quality of their classroom-based learning was very high, with excellent teachers. On the negative side of the academic experience, some students in certain schools reported that they were not sufficiently challenged and, therefore, not well prepared for licensing exams or future jobs. Grade inflation and a lack of rigor in grading were also concerns expressed by some students.

Overall, students rated the impact of faculty mentoring on their development as good to very good. Nevertheless, it was perceived somewhat less positively than the other components surveyed. "Help with future employment" received lower ratings than any other item in the survey, though accessibility of faculty was rated more positively. Participants in the focus groups stated that the general

level of faculty mentoring on technical issues was quite high; however, good mentors were not always thought to be fulfilling students' non-technical mentoring needs. Although students believed that faculty expertise was high, the quality and level of feedback received from faculty both in and out of the classroom was a major concern for some focus group participants.

Students were generally positive about the impact of interactions with other students on their professional development. They reported that peer interactions had more impact on their intellectual and personal development than their professional development. Some students expressed concern for international students who struggle with cultural adjustment and language barriers.

In an effort to explore whether some aspects of the Case experience had a negative impact on student development, respondents were also asked to note any negative experiences they had had. The most frequently mentioned negative was unprepared professors (nine percent of 301 respondents), followed by non-supportive administrators (six percent), poorly organized career fairs (four percent), and poor course scheduling (three percent).

One of the main conclusions of the subcommittee was that students believe their experiences at Case do more to strengthen their intellectual development than their personal and professional development. Course work had more impact on student development than faculty mentoring or interactions with other students. It is important to note that findings were based on a relatively small number of responses, and that there was a significant variation between the perceptions of Ph.D. students and those at the professional schools. Still, the findings are consistent with those from the 1998 School of Graduate Studies survey. While student development was generally rated good to very good, the study points to areas of strength and areas in need of improvement in various graduate and professional programs across the university.

Since no standardized national survey of this cadre of students existed at the time this study was undertaken, it is not possible to make comparisons of graduate and

professional student development at Case with that at other institutions. However, the study did produce a number of recommendations:

- Define more specifically what is unique and distinctive about “the transformative Case experience” that cuts across graduate and professional programs, and create mechanisms to ensure that students have ample opportunities to integrate this unique perspective into their intellectual, professional, and personal development
- Regularly obtain more comprehensive and comparative information on the academic, professional, and personal development of graduate and professional students at Case, to provide a better basis for analyzing and enhancing student development
- Create opportunities for faculty to develop their mentoring skills, incentives for mentoring their students, and mechanisms for accountability
- Encourage schools and departments to expand their notions of student development to include professional and personal development
- Foster a sense of community across the disciplines at Case with the ultimate goal of creating spaces where students can develop the broad perspectives and skills that are possible only through interdisciplinary give-and-take with their peers
- Improve career services provided to students
- Improve practice-based learning experiences
- Exploring possible administrative changes that would facilitate research and graduate programs throughout the university
- Examining current levels of infrastructure and recommending an infrastructure needed to effect significant improvements in research and the graduate programs
- Exploring other mechanisms that could be implemented to encourage faculty in their research and support of graduate students, including changes in tuition policies, graduate student stipends, and other academic and financial strategies
- Recommending how to increase the number and improve the quality of students enrolling in graduate study, and also ways to improve their research experiences while at Case

The commission concluded that significant development and investment of resources in the graduate programs and research infrastructure would be required to maintain and enhance Case’s status among top research institutions. It also recommended that the university work to ensure a supportive environment for research at all schools as well as interdisciplinary research programs that take advantage of synergies between the schools. Finally, the commission acknowledged that the university would need to make focused investments in targeted areas of strength.

The commission further made recommendations for immediate implementation, which include creating a Research Council; appointing associate deans for research and graduate education within each management center, and a full-time Dean of Graduate Studies; ensuring a concerted effort between the Office of the Provost and the Office of the Vice President for Research and Technology Management to anticipate and facilitate the leveraging of new research thrust areas; obtaining assistance from the Department of Human Resources in recruiting research assistants; centralizing grants accounting; communicating more effectively with faculty regarding technology transfer issues; providing the Office of Foreign Faculty and Scholars with more staff and a wider range of authority; and ensuring

PLANNING FOR THE FUTURE OF GRADUATE EDUCATION AND RESEARCH AT CASE

During the 2003-04 academic year, a Commission on Research and Graduate Education was formed by the provost to identify and explore opportunities and challenges associated with sustaining and enhancing the university’s research base and graduate programs. The charge to the commission included:

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a systematic financial and administrative plan for procurement and maintenance of research facilities.

The commission also made longer-term recommendations with regard to endowment needs, interdisciplinary programs, faculty and graduate education issues, and library and network infrastructure. The full text of the commission's report, entitled "Case as a Research University: Opportunities and Challenges," may be accessed online.²

Of the various recommendations in the report, the provost is first acting to establish a council on research, which will be announced in early 2005. Major facilities improvement projects in the Case libraries are underway and are expected to continue. Action on the other recommendations is still pending.

POSTDOCTORAL STUDIES

In April 2001, an ad hoc Committee on Postdoctoral Researchers Issues was formed in response to the desire expressed by some postdoctoral researchers to become better integrated into the campus community. The committee, which had representatives from across campus and from the Postdoctoral Researchers Association, issued a report in August of that year. The report articulated guidelines to ensure that postdoctoral scholars would be well trained, benefit from quality mentorship, and receive recognition from the university for their valuable work, which is essential for a research-intensive institution. The committee's recommendations addressed all of the goals for postdoctoral training outlined in a joint report by the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine.

By 2003, the title "Postdoctoral Scholar" was approved as a new class of employee at Case. Such positions necessarily include specific scholarly training activities in collaboration with the mentor and committed in writing in the form of a training plan. All postdoctoral scholars are encouraged to pursue additional training and other opportunities in their respective areas.

A certain set of criteria must be met in order for a researcher to be classified as a postdoctoral scholar. These include:

- Holding a Ph.D. or equivalent (normally awarded within the preceding five years) in a field appropriate to the research
- Working on scholarly projects either funded by grants obtained by others at the university or by department funds
- Being engaged in a mentored training relationship with a member of the university faculty
- Actively pursuing fellowship/grant funding for his/her own research project in order to develop his/her future professional career

Once a postdoctoral scholar obtains funding independent from his/her mentor, the position is reclassified as a postdoctoral fellow, a position which is governed by the Postdoctoral Trainee Handbook.³

Postdoctoral scholars are eligible to participate in a special health care benefit plan. However, since an appointment as a postdoctoral scholar is considered to be a temporary position and postdoctoral scholars are expected to complete their mentored training within five years, these individuals are excluded from participating in all other Case benefits, including employee retirement plans.

An Office of Postdoctoral Affairs was established to serve postdoctoral scholars and enhance their experiences at Case. This office is currently housed in the School of Graduate Studies and provides postdoctoral scholars with career counseling, networking, and training programs, among other support services.

CONTINUING EDUCATION AND LIFELONG LEARNING

Case provides some formalized continuing education opportunities for graduates as well as the community at large. Despite the recommendation appearing in Case's 1995 self-study report to coordinate continuing

2. Review the Commission on Research and Graduate Education's report at www.case.edu/menu/commissionaprilfinal.pdf.

3. Review the Postdoctoral Trainee Handbook at www.case.edu/provost/gradstudies/docs/Postdoc%20Trainee%20Handbook.pdf.

education across the whole institution, such programs remain largely decentralized. This section provides a summary of some of these programs.

The **College of Arts and Sciences** houses the Office of Continuing Education,⁴ which offers a wide range of lifelong learning opportunities for the community. These include Off-Campus Studies, a program offering university-level, non-credit courses in the humanities at multiple locations throughout the Cleveland area; Senior Scholars, which offers a smaller number of faculty-taught non-credit classes; and other programs such as Creative Writing, Summer in the Country, Scholars on the Circle, Elderhostel, and International Studies, all of which offer opportunities for learning under the university's umbrella. In addition, the College of Arts and Sciences sponsors the Alumni/Senior Audit⁵ program, through which university alumni of all ages and community members sixty-five years and older can audit many College of Arts and Sciences classes for ten percent of regular tuition.

As part of the university's commitment to lifelong learning, the **Case School of Engineering** offers a professional graduate degree. The Master of Engineering program provides engineering professionals with an opportunity to broaden their understanding of the practice of engineering. It offers a learning experience that addresses critical competencies needed to enhance technical skills, business acumen, and personal effectiveness in the workplace.

The Master of Engineering program offers evening and remote accessibility to core and elective graduate courses of the program curriculum, and helps practicing engineers better prepare themselves for technical and business challenges. Unlike the Master of Science degree, which is research oriented, the Master of Engineering is a practice-oriented degree; as such, a thesis is not required. Instead, students complete a set of six core courses specifically designed to address the practice of engineering. In addition, they enhance their technical competence by selecting four elective courses in a chosen discipline of engineering.

The continuing education program at the **Mandel School of Applied Social Sciences** provides alumni, licensed health professionals, and the community at large with opportunities to engage in lifelong learning on a variety of subjects in the social and health sciences. Besides continuing education workshops, MSASS also offers Social Work Licensure Examination review courses, some of which are offered in partnership with community organizations in a variety of convenient off-campus locations. The continuing education program is an approved provider for continuing education units for social workers, psychologists, chemical dependency counselors, nursing home administrators, nurses, and educators. The program works with Case's Department of Psychology, University Counseling Services, and the schools of management, medicine, and nursing. In 2003, the program offered eighty workshops serving a total of 1,316 participants from Ohio and surrounding states. That year, a total of 2,302 continuing education certificates were issued.

For graduates of the **School of Law**, continuing legal education is provided mainly by bar associations and some national organizations like the National Institute for Trial Advocacy. Although the school has no significant continuing education programs, law faculty members frequently serve as presenters in programs run by other organizations.

The Continuing Medical Education (CME) Program at Case's **School of Medicine** supports faculty in the development and delivery of state-of-the-art continuing medical education activities and practice improvement interventions. These activities are developed for the benefit of the school's alumni and for physicians and other health care professionals in and proximate to northern Ohio. Selected programs target broader regional, national, and international audiences when the expertise of the faculty and perceived needs of given target populations combine to warrant such efforts. These activities are carried out in a manner fully consistent with the standards for continuing medical education put forth by the American Medical Association and the essentials and standards of the Accreditation Council for Continuing Medical Education.

4. The Office of Continuing Education website is available at www.case.edu/artsci/conted/index.html.

5. Alumni/Senior Audit program information can be obtained at www.case.edu/artsci/audit/.

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In keeping with the mission of the university and as part of a major academic medical center, the Case CME program supports the lifelong education of physicians by helping them apply new advances in science to clinical care in the day-to-day practice of medicine. Services include but are not limited to the sponsorship of grand rounds, series, conferences, workshops, seminars, symposia, practice improvement interventions, and a variety of enduring materials (such as print modules, journals, journal supplements, CD ROMs, and web-based modules).

The goals of the School of Medicine's continuing education efforts include:

- Addressing the basic sciences underlying medical practice, the applied medical sciences, the analytic and reflective sciences, professional development, and faculty development
- Providing both traditional and innovative learning formats, and encouraging the integration of active learning strategies, when appropriate, into educational offerings
- Facilitating collaboration and mutual enrichment between continuing medical education, undergraduate medical education, and graduate medical education
- Investigating and testing initiatives in professional development and education for physicians in new learning formats and utilizing new learning technologies, such as teleconferencing, telemedicine, and the Internet
- Designing educational activities in collaboration and partnership with other institutions and organizations whose primary purpose is delivery of quality education or health care
- Developing the capability to assess outcomes influenced and supported by activities sponsored by the Case CME Program

The **Weatherhead School of Management** offers a program that focuses on continuing education and lifelong learning for members of the business community.

The Weatherhead Affiliate Program is an interactive partnership between the school and organizations of all sizes. For a set fee, organizations receive discounted access to a wide range of single-day, multi-day, and certificate programs taught by Weatherhead faculty and affiliate instructors.

The Affiliate Program allows an organization to focus its management development investment for the greatest impact. A Weatherhead account manager, assigned to each affiliate partner, helps design customized tracks for meeting specific management development needs. The goal of the program is to help move an organization's training and development efforts to an accomplished management development system.

The Weatherhead Affiliate Program offers these key features and benefits:

- Account managers offer knowledgeable, personalized guidance, working with each organization to answer questions about program content and assist in choosing the right programs for the right employees.
- Partner organizations are invited to several events throughout the year that help maximize the return on training and development expenditures.
- Course descriptions and selection tools provide affiliate partners with the information they need to match employee development needs with course content.
- For one annual fee, affiliate partners receive discounted access to over fifty one-day, multi-day and certificate programs. There are four different subscription levels to meet the needs of each participating organization.

The **Frances Payne Bolton School of Nursing's** continuing education mission is to provide quality learning experiences for professional nurses that will enhance their knowledge and advance the discipline of nursing. The goals are to:

- Support the dissemination of evidence-based nursing practice knowledge

- Encourage interdisciplinary learning and collaborative experiences
- Provide information on evolving trends in nursing and health care
- Promote the development of innovative approaches in nursing education

Programs are planned by members of the faculty as well as nurses and other health care professionals in the community. Programming may include conferences, symposia, workshops, and certificate programs, and are developed for alumni and nurses in and around northern Ohio. Some offerings serve wider audiences.

The **School of Dental Medicine** joins with the Greater Cleveland Dental Society to provide a formal program of continuing education for dental professionals in the Cleveland area. Programming runs year round, and offers a variety of events for professional development. Speakers include nationally recognized authorities on clinically relevant and practical topics in dentistry and allied dental health professions. Seventeen programs were presented in 2004 on topics including Occlusion-based Restorative Dentistry, Adhesion Dentistry, New Therapies in the Treatment of Periodontal Disease, Early Oral Cancer Detection, and Tobacco Use Cessation.

This joint venture also corresponds with the annual NorthCoast Spring Meeting planning group, a two-day meeting of intense continuing education programming that includes dental professionals from areas contiguous to Greater Cleveland.

The School of Dental Medicine also conducts a research seminar series during the academic year for which dental continuing education credit is provided. This program is arranged by a faculty member and is open to the university community.

SUMMARY: STRENGTHS AND CHALLENGES

The maintenance of well-regarded graduate and professional programs has long been widely recognized, both inside and outside the university, as an essential component of Case's stature as a premier research

university. In a very pragmatic sense this is seen in the fairly stable size over time of the graduate student body and, although not documented in this report, in the success of our graduates in their chosen fields.

There are a number of specific challenges facing the university in order to maintain the excellence of its graduate and professional programs. Many of these have been outlined and considered in great detail in the report of the Commission on Research and Graduate Education cited earlier. This summary will highlight some general concerns, but the report can be examined for specific recommendations.

Before describing specific challenges, however, it is important to state that the greatest overall challenge to the university currently is to not take the graduate and professional programs for granted at a time when so much energy and resources are being directed toward revolutionizing the undergraduate program. The concern that graduate programs are not receiving adequate attention was one of the points expressed by those interviewed by the Commission on Research and Graduate Education. The forces motivating the transformation of the undergraduate program logically apply equally, if not more so, to graduate programs. It would be unrealistic for the university to simultaneously undergo major transformations of both undergraduate and graduate programs, and now is clearly the time to focus on undergraduate programs. However, as that transformation is in process, the planning needed to institute a similar transformation within the graduate school should be developed. That, in fact, was the provost's rationale for convening the Commission on Research and Graduate Education, and all indications are that the required planning has begun, with the first step being establishment of a Council on Research in early 2005.

All graduate and professional programs must continually reevaluate their relevance and modify their programs as appropriate and necessary for the changing world in which their graduates must compete. Based on the assessments of the students themselves as well as the standing of the various graduate and professional programs, Case's programs generally receive high marks

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for ensuring that students are well trained in their chosen fields. However, there are aspects of student life and overall professional development that are clearly viewed as problematic by both faculty and students.

The level of financial assistance for students is clearly an important issue, particularly for students attending a private research university. This assistance varies widely across units, so that, even if funded, many students must borrow substantial amounts of money in order to meet living expenses. Unfunded students of course must also borrow tuition expenses. From the university's view, this has several potential important negative consequences. First, the very best students may decide to attend a university that is either less expensive or that provides a better financial package. This is probably particularly true of minority students, in which case there would be an impact on the diversity of the student body. Second, some fraction of those students who do decide to attend are not able to complete their graduate education for financial reasons. A reevaluation of financial assistance for graduate and professional students was recognized by the Commission on Research and Graduate Education as a necessary component of any future strategic plan for graduate and professional education.

As noted above, the academic component of graduate and professional education is strong and well regarded. However, the complete transformation from a "student" to a "professional" ideally involves more than simply learning a body of knowledge. On the other hand, outlining exactly what is involved in this transition is somewhat more problematic. This transformation occurs primarily within academic units but can be facilitated by the School of Graduate Studies. Graduate Studies has made great strides in recent years in providing better services and opportunities for professional development to graduate, professional, and post-doctoral students. This has included attempting to create a greater sense of coherence for students in the various graduate and professional programs. This is not a simple task given the historically fragmented nature of the university and the fact that success in a graduate or professional program requires a high level of commitment by students, leaving little time for other activities. However, given that such

interactions are likely to play an important role in the professional development of many students, the school must continue its attempt to be a unifying presence for the various graduate and professional programs.

The School of Graduate Studies can be expected to provide only some of the resources and opportunities for professional development; the bulk of professional development must occur within individual programs. From the point of view of students, "professional development" seems to equate with explicit mentoring and providing assistance in finding employment. This disjunction between what the faculty believes is appropriate mentoring and the mentoring expected by students is important. The belief that a quality education involves more than learning a body of knowledge is at the core of the ongoing transformation of the undergraduate program and, as noted earlier, is just as true for graduate education. In addition, from a purely pragmatic point of view, any school that ignores changing cultural values (relating to expectations of faculty-student interactions) risks losing the very best students. Such a change in the academic culture will likely require a top-down approach in which it is made clear that mentoring is a valued activity.

Case's graduate and professional programs are currently very strong, and there is every reason to believe they will continue to be strong in at least the short term, even if little attention is paid to them. However, the long-term maintenance of strong programs will require the development and implementation of a strategic plan that addresses the challenges outlined above and those described in the report of the Commission on Research and Graduate Education.