

**Department of Epidemiology
Graduate Program Review
Self Study
2004**

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I. Context and HEC Board Summary

Name of Unit Authorizing Degrees: The University of Washington Department of Epidemiology

School: School of Public Health and Community Medicine

Degrees Offered: PhD in Epidemiology, MS in Epidemiology, MPH in Epidemiology

Year of Last Review: 1993

A. Field and History at the University of Washington

The current degree programs offered by the Department of Epidemiology originated in the Department of Preventive Medicine in the School of Medicine. The Master of Science in Preventive Medicine began as an academic degree program in 1963 and was offered to students with a prior professional doctoral degree. In 1970 the Department of Preventive Medicine was reorganized and expanded to become the School of Public Health and Community Medicine. The Master of Science degree program was re-designated the Master of Public Health (MPH) degree program. In 1973, the Department of Epidemiology and International Health, one of five departments in the newly-formed School of Public Health and Community Medicine, initiated the Master of Science in Public Health (MSPH) degree program. It was intended to provide Master's level training to students without a prior professional degree. This degree program ended in 1980, but continued as a Master of Science (MS) degree program within the School, and the MPH degree was opened to those with and without a prior professional degree. The Doctor of Philosophy (PhD) in Preventive Medicine degree program began in 1967. When the School of Public Health and Community Medicine was established in 1970, the PhD degree program was transferred to the Department of Epidemiology and International Health. In 1976 the Board of Regents approved deletion of "International Health" from the name of the Department of Epidemiology.

The field of epidemiology is often described as the study of the distribution and determinants of disease in human populations. The essence is to study the variation in the occurrence of disease and to

identify and understand the reasons for that variation. In so doing, epidemiologists strive to identify factors that cause disease, with the broader goal of identifying opportunities for prevention in order to reduce and eventually eliminate the burden of disease in human populations. The roots of epidemiology are largely in the study of infectious disease; hence many consider epidemiology as the study of epidemics. Over the last several decades, however, epidemiology has expanded greatly and is now a much more broadly-based discipline that includes research and teaching in a diverse range of topics that affect human health. Epidemiology encompasses a basic methodology that is characterized by a way of thinking and an approach to solving health problems that focuses on populations rather than individuals.

B. Continuing Need for the Department of Epidemiology

In the context of the University's educational mission, there is a clear and continuing need for the Department of Epidemiology, principally in two respects: to educate and train professional epidemiologists, for which there is an increasing demand and market; and within the University to continue to provide course offerings important to and required by a number of academic programs. The need for epidemiologists continues to expand. Well-trained epidemiologists at all levels are in high demand in a variety of settings in government, academic and research institutions, and the private sector. According to the Department of Labor Bureau of Labor Statistics (BLS), employment of epidemiologists is expected to grow faster than the average for all occupations through 2012. This projection is on top of rapid gains in employment experienced through the last decade. The continuing need for epidemiologists is driven in part by rapid expansion in research related to diseases of major public health importance, such as HIV/AIDS, cancer, cardiovascular disease, Alzheimer's disease; by rapid expansion of biotechnology and the mapping of the human genome; and by a heightened awareness of bioterrorism and infectious diseases such as West Nile Virus and SARS. Opportunities for epidemiology to make substantial contributions to new knowledge are numerous and varied, and are expected to remain so for the foreseeable future.

According to the Bureau of Labor Statistics (BLS), in 2003 nearly 45 percent of epidemiologists were employed in Government, another 20 percent worked in management, scientific, and technical consulting services firms, 14 percent in private hospitals, and 12 percent in scientific research and development services firms. Individuals with a MPH generally find employment in settings that are more practice-oriented, such as local and state health departments. Epidemiologists in such positions typically perform a variety of duties, often branching out from traditional epidemiologic activities to include health education, program design and evaluation and policy development. In the last two years the Dean of the School of Public Health and Community Medicine (SPHCM) has visited all local health jurisdictions in the State of Washington and several others in neighboring states in the Pacific Northwest. She found there to be a serious shortage of formally educated and trained public health practitioners, including epidemiologists, and a strong desire on the part of health departments to increase and substantially enhance the public health workforce in this region. Overwhelmingly, those responsible for public health look to the University of Washington to provide such training and education and to expand the number of well-trained practitioners available. This is especially true given that the SPHCM is the only accredited School of Public Health north of UC Berkeley and West of the University of Minnesota.

Graduates with a MS usually pursue careers in research settings. Responsibilities typically include study design, data analysis, grant and report writing, publication preparation and study coordination. Federal agencies, such as the Centers for Disease Control and Prevention and the National Institutes of Health, continue to seek people with such credentials for a wide range of positions, especially in research and outbreak investigation. Many of these students eventually seek doctoral-level training in epidemiology. Epidemiologists trained at the doctoral level are sought primarily by academic and research institutions as independent investigators/faculty and for leadership and administrative posts in both the public and private sector. Demand for such individuals continues to exceed supply.

The Department of Epidemiology provides important service to the University by teaching several introductory courses that are required by a variety of academic programs. Epidemiology 511 (Fundamentals of Epidemiology) is the basic introductory course for non-epidemiology students. Most who take this course are students in other departments within the SPHCM and the School of Nursing, although students from other departments and schools in the health sciences often take the course (e.g., dentistry, pharmacy), as do occasionally students from other parts of the campus as well (e.g., geography, anthropology). The course has continued to increase in enrollment every year for the past five years. Demand for the course is nearing a point of exceeding the capacity to teach it. Separate introductory courses, also labeled Epidemiology 511, have been developed and tailored for the SPHCM's MPH Extended Degree Program and the University Extension program, and are now taught on a regular basis. A distance-learning version of Epidemiology 511 has been developed by a member of the Epidemiology faculty for the School of Nursing, and has been approved by the Curriculum Committee for initiation in the Autumn Quarter of 2004. In addition, more than 100 University of Washington graduate students from outside the Department of Epidemiology take the Epidemiology 512-513 course sequence each year. These courses are primarily designed for Epidemiology majors but may be taken by others as an alternative to Epidemiology 511 in order to meet a distribution requirement.

The Department of Epidemiology also teaches two specialized introductory courses. One is for undergraduates (Epidemiology 420), and is required by the undergraduate degree program in Environmental Health and the undergraduate minor in Public Health. This course is very popular and has nearly doubled in enrollment in the past three years. It is now at capacity and had a waiting list the last time it was offered (Spring 2004). The other specialized introductory course is for first-year medical students (Human Biology 530), and is a required segment of the first year curriculum. It is taught in a four-week block of time in the Winter Quarter, five days a week. It requires substantial

faculty effort and resources.

C. Assessment Information Relating to Student Learning Outcomes and Program Effectiveness

There are several ways in which students in the Department of Epidemiology are evaluated and assessed as they progress through their degree program. Descriptions of methods used to evaluate students can be found in Section 4- Graduate Program and Section 5 – Graduate Students, along with other information about the department’s degree programs and students.

Program effectiveness is also evaluated in a number of ways on an on-going basis. Student evaluations are obtained for every classroom course each time it is taught. Faculty are evaluated yearly by those more senior in rank (see Section 6. D for a more detailed description of this process). Courses are evaluated regularly. The departmental Curriculum Committee assigns a faculty reviewer for each class, who reviews class materials, attends a class, and prepares a written report. The report is discussed by the Curriculum Committee and is provided to the course instructor along with any additional feedback from the committee. All new courses are evaluated in this manner. Those taught by Assistant Professors are reviewed annually; those taught by Associate Professors are reviewed biannually; and those taught by Professors are reviewed every three years. Other means of assessing effectiveness include reviewing completion rates, time to graduation, placement after graduation, and exit questionnaire responses. Appendix Q is a copy of the exit questionnaire and Section IV F, Graduate Program provides a summary of results from recent graduates. See *Appendix N.2* of for a summary of degrees granted in the last three years.

D. Changes in the Field of Epidemiology

A number of changes have taken place over the last decade that have had an important impact on the teaching and practice of Epidemiology, and that have influenced the academic programs in the

Department. Perhaps foremost in this regard is a virtual explosion of new knowledge regarding the fundamental biology and the biological mechanisms underlying the diseases we study, particularly at the molecular level and in regard to the role of genetic determinants. There has also been a concomitant revolution in technological advances that enable molecular and genetic testing and assays of biological specimens not even imagined only a few years ago. These changes and the evolving sophistication of biological knowledge have greatly impacted the design and implementation of epidemiologic studies. Biological (molecular) components to epidemiologic studies are now relatively commonplace, but often pose difficult challenges in implementation, analysis and interpretation. Different types of questions can now be investigated and incorporated into epidemiologic studies in an attempt to capitalize on evolving knowledge of biological complexity, but this often requires additional expertise and almost always requires additional resources and facilities. Thus, epidemiologic research today tends to require more of an interdisciplinary approach, characterized by collaborations with investigators in variety of other scientific fields, and carried out much more as a team effort. This has significant implications for graduate level training and student research projects.

A second important change that has impacted Epidemiology is an increasing understanding and appreciation of the global nature of public health. There is a new emphasis on the importance and dynamics of emerging infections, and tremendous challenges ahead in developing effective strategies to control their spread. Increasingly, the ethnic and cultural makeup of local and regional populations are changing, due largely to the influx of people from all parts of the world. This results in often substantial changes in health care needs and disease dynamics, requiring a shifting of priorities in the provision of services, in the distribution and allocation of resources, in the training and utilization of personnel, and in research. One important impact on the Department has been a corresponding substantial increase over the last several years in the involvement of faculty and students in international projects. These projects incorporate a broad range of activities in many different

locations, including etiologic research, the development and implementation of prevention strategies, the provision of clinical care, and training programs.

Related to the emerging importance of a global perspective on public health is the impact of the threat of bioterrorism. This has resulted in the need for research involving diseases that in many cases have not previously been a high priority, and the development of new or modified vaccines. It has also challenged the distribution and availability of resources, and has presented a rather urgent need for workforce development and additional training. Tangible impacts on the Department in this regard include a need for new course development, as well as a need to develop and utilize to a greater extent distance learning techniques and technology.

A third important development, related in part to the changing nature of public health in today's more global environment, and the emerging need for workforce development and training, is an increasing interest in Epidemiology and public health education at the undergraduate level. This places additional demands on existing courses, and exerts pressure to expand offerings for undergraduates. The Department offers only one introductory undergraduate course at the present. In the last three years it has suddenly grown from an average of around 50 students per offering once a year to approximately 85, to 120 with a waiting list this past Spring. It is enormously popular and is a cornerstone of the undergraduate minor in Public Health. Similarly, a proposal from one of our faculty was selected this year to be part of a program of special topic seminars for incoming freshmen. This is a highly selective program that offers four-week intensive seminars prior to the beginning of the Fall Quarter on topics of high visibility and special interest. There is also increasing demand and pressure for the University to offer an undergraduate degree in Public Health. Epidemiology would be expected to constitute a core element of such a program.

Thus, the changes outlined above have substantially altered a number of aspects of the way

epidemiologic research is done; the practice of Epidemiology in a public health setting; and the teaching of Epidemiology. We anticipate that such changes will continue and evolve in the next ten years, and will likely become more broadly based and integrated with biological developments. This will require flexibility and adaptability on the part of the academic and research programs in the Department, to recognize important changes as they occur and to respond appropriately in a timely manner.

E. Improving the Quality and Effectiveness of the Program

The quality and effectiveness of the epidemiology degree programs is monitored and assessed in a number of ways. This has always been an informal and on-going process within the Department, rather than a specific structured task undertaken on a regular or periodic schedule. There are three principal components that contribute to this informal process: regular meetings of the faculty; the work of several standing committees; and periodic faculty retreats.

Meetings of the entire faculty are held once a month. Issues relevant to the graduate program are routinely discussed among the entire group and major procedural or policy decisions are voted on. Examples of topics or issues considered include: 1) review of the dissertation proposal for every doctoral student; 2) requirements for thesis or dissertation projects; 3) recruitment and support of new students; 4) recruitment of new faculty or opening of new faculty positions; 5) curriculum matters; 6) review of the results of the doctoral preliminary exam each year; 7) admissions matters (not individual admission decisions); 8) nomination and selection of outstanding individual students for annual departmental and school awards; and 9) consideration of issues raised by students (communicated by the student representative who attends all meetings).

The work of three standing committees in particular has direct impact on matters related to the quality and effectiveness of the graduate program: the admissions, curriculum, and preliminary exam

committees. The admissions committee is chaired by the Graduate Program Director (Professor Schwartz) and includes a student as a member. The committee meets regularly during the admissions “season” (mostly Winter Quarter) and, with input from non-committee faculty members, makes all decisions regarding the admission of students into the department’s degree programs. The curriculum committee is chaired by Professor Kukull and also includes a student member. It meets every other month and is responsible for all matters related to curriculum, including the assignment and assessment of peer review of all courses and instructors, the approval of new courses, and scheduling decisions. The preliminary exam committee, consisting of only faculty as members, designs and administers the doctoral preliminary exam each year and is responsible for all matters related to the exam.

The third activity that contributes to the informal planning process is faculty retreats. Although retreats have not been held on a regular basis, there have been several in the last ten years. The agenda and format of past retreats has been largely informational and informal, as opposed to being issue driven or problem-solving in purpose. During the approximately two-year period the Department had Acting Chairs, no retreats were held and there has not been one since the current Chair was appointed. Plans are currently being made to hold a faculty retreat this academic year that will include an informational and a planning component, as well as some time devoted to social interaction. The planning activity will focus on longer-term strategic planning, and will include discussions regarding faculty development and recruitment, curriculum, and fiscal development and stability.

The overall goals of the Department in the next five-seven years are: 1) to enhance excellence in the Epidemiology graduate program; and 2) to increase our contributions to the improvement of the health of the public (locally, regionally, nationally, and internationally), and to the understanding and prevention of disease, through continued excellence in research. These goals can best be achieved

by focusing efforts in the following ways over the next several years:

E.1. Maintain excellence in faculty

Strong and active faculty are critical to maintaining the high standards of the graduate program and the continued overall success of the Department. Because the distribution of the faculty continues to be weighted towards the senior ranks, it will be particularly important to maintain and build the number of junior and mid-level faculty. The Department must do as much as possible to provide a supportive environment for research and teaching, and to facilitate and assist whenever possible. Given the considerable constraints of available funding and space, this will require creative approaches and a high degree of administrative flexibility.

E.2. Maintain and enhance existing content areas, and develop new ones

The Department has outstanding research and teaching strengths in a number of content areas. Maintenance of this expertise and experience through faculty retention and recruitment will remain a high priority. One area that has been a strength of the Department historically is infectious disease epidemiology. Although it continues to be a major strength, in recent years there has been an increasing emphasis among the faculty on HIV/AIDS and sexually transmitted diseases. It will be important to identify ways to broaden the scope of infectious disease research activities and course offerings in the next five years in an effort to restore a more comprehensive infectious disease element to the program. Similarly, there are a number of areas that have not historically been well developed in the Department that are of increasing interest. Foremost of these at the present time is social epidemiology. Considerable development has already taken place over the last two-three years as a result of funding from the Dean to support a Social Epidemiology Initiative. Work on this initiative will continue as a priority. Other areas of interest that will be pursued include public health practice and undergraduate training.

E.3 Plans for transition of important program components:

Because some of the faculty most active in the graduate program are quite senior, it will be important in the next five years to plan explicitly for a transition in several major responsibilities. Of particular importance will be responsibilities currently assumed by Professors Weiss and Koepsell. These include teaching responsibility for the core methods courses required by all the degree programs (EPI 512 and 513); the preliminary exam committee (Professors Weiss and Koepsell are half the committee; Dr. Weiss is Chair); the curriculum committee (Professor Koepsell is a long-standing member); the faculty recruitment committee (Professor Weiss is a long-standing member); and the NIH Cancer Epidemiology and Biostatistics Training Grant (Professor Weiss is the PI). In addition, the current Chair of the Department (Professor Davis) is beginning his fifth year in this position. Assuming he will continue for some additional term of service, it will be important in the next five years to begin to plan for an orderly transition of leadership.

E.4 Recruitment of the best students

Central to maintaining excellence in the graduate program is being able to identify and recruit the best students. Although we have made considerable improvements in this area over the last several years, it will be important to identify additional means to attract top students. Key in this regard is identifying sources of financial support and being able to commit resources early in the admissions process; identifying and making available opportunities to work with faculty engaged in research of interest to the individual applicants; and personal attention in the recruitment process.

Broadening and expanding the funding base: Over the next 5-7 years it is not anticipated that there will be any significant increase in the already very limited funding that is received from the State of Washington. Therefore, in order to maintain and even enhance our excellent faculty and staff, and continue to support the graduate program at the levels of current enrollment and at the same high standards, it will be important to broaden the base of financial support to the Department and enhance

the stability of funding. This can be achieved by increased development efforts with the private sector, and an increase in the grant and contract base provided by faculty in the Department, particularly junior and mid-level faculty actively building their research careers. Both approaches will receive high priority in the next several years.

II. Self Evaluation

A. Departmental Description – Overview

The Department of Epidemiology is consistently regarded as one of the top few epidemiology departments in the United States. There are 67 faculty and approximately 150 graduate students in the Department, and more than one hundred health professionals and scientists hold adjunct, affiliate and clinical appointments. Faculty research is highly interdisciplinary and encompasses a broad range of topics, including cancer, HIV/AIDS, sexually transmitted diseases, other infectious diseases, cardiovascular disease, maternal and child health, injury, trauma and violence, women's health, diseases of aging, and Alzheimer's disease. In addition to infectious agents, faculty research focuses on behavioral, nutritional, genetic, metabolic, environmental and medical factors associated with disease risk and disease outcome. The department maintains close collaborative ties with a number of other institutions and programs in the area, including Public Health Seattle-King County, the Fred Hutchinson Cancer Research Center, Group Health Cooperative, Harborview Injury Prevention and Research Center, the Veteran's Affairs Medical Center, and the University of Washington School of Medicine. The wide range of faculty expertise and research interests fosters a diverse and dynamic teaching program, with numerous research opportunities for students.

B. Mission and Goals of the Department of Epidemiology

The overall mission of the Department of Epidemiology is to provide rigorous training in the fundamentals and practice of Epidemiology, and to contribute to the understanding of the etiology

and prevention of disease, and the improvement of the health of the public through excellence in research. To accomplish this mission, the Department focuses on three primary goals:

1. To advance knowledge regarding the occurrence and distribution of disease in human populations by maintaining a strong and diverse research program, characterized by outstanding faculty and students.
2. To educate and train professionals in epidemiology, through graduate degree programs at the master's and doctoral level; and
3. To provide professional service in epidemiology by having faculty and graduate students work with federal, state, and local health agencies and other organizations to conduct collaborative research and to provide technical assistance.

The Department has long been recognized as a leader in the development and teaching of epidemiologic methods and for methodologic rigor in the conduct of research. Other areas of major strength and international recognition include cancer, infectious diseases (particularly HIV/AIDS, chlamydia, human papilloma virus), cardiovascular disease, Fetal Alcohol Syndrome, and Alzheimer's disease. Departmental faculty working in these areas are recognized as some of the top leaders in their respective fields, as evidenced by: service on NIH and other funding agency study sections, national and international review groups and advisory bodies; editorial positions for leading journals; authorship of widely-used text books and other teaching materials; authorship of landmark scientific articles; leadership in professional societies; membership in prestigious professional organizations; and awards. Additional description and examples of faculty recognition and accomplishments are provided in Section VII B.

III. Structure and Administration

A. Chair and Administration

Appendix C is an organizational chart showing the administrative structure of the Department. Dr. Scott Davis has been Chairman of the Department since September 2000. He leads the faculty by overseeing the establishment of policy, presiding over faculty meetings, directing annual reviews to assess faculty performance, apportioning salary increases, administering department funds, serving as liaison between the University/School and the Department, and coordinating the recruitment of new faculty members. He is assisted in daily operations of the Department by the Administrator, Barb Byrne Simon, who has held the position since April 2001. She is responsible for: personnel matters for all Department staff; recruitment and promotion of staff; all Department financial records; budget reports and projections; facilities management; supervision of administrative staff; and maintaining personnel and historical files.

B. Staff

Daily operations of the Department are facilitated by the core administrative staff, which consists of the Assistant to the Chair (Angie Marie Buck), two fiscal specialists (Ophelia Ealy and Matt Anderson), and a secretary (June Wallace). The Department is fortunate to have excellent staff who are dedicated to the success of the Department, particularly regarding payroll, fiscal compliance, and faculty and student support.

Professor Stephen Schwartz, Graduate Program Director, is responsible for the Graduate Program and the staff of the Epidemiology Program Office. Kathleen O'Brien serves as Counselor for the program and supervises two staff and a part time student helper. Valerie Tatsuda is the Information Specialist and Renee Albert is the Counseling Services Coordinator for the Graduate Program.

As a State institution, the University employs standard mechanisms in use throughout the State personnel system to assess performance and reward productivity. Each member of the staff is evaluated annually by his/her supervisor, as mandated by University policy, to determine levels of productivity and merit. Salary levels for classified and Washington Personal Review Board (WPRB) personnel are regulated by a step system, with classified salary levels negotiated by their union. Additional steps are available for special merit considerations, and to address serious retention or salary equity/alignment issues. Professional staff increases generally are similar to whatever faculty increases are legislated by the State in a particular year, with a percentage set aside to address inequities, competitive offers and extraordinary merit. Special programs such as the Strategic Leadership Program, which trains UW supervisors, and the Tuition Exemption Program, are funded by the University. The University benefits package is comprehensive and competitive with like institutions.

The School of Public Health and Community Medicine provides a \$500 Staff Service Award each year to acknowledge the outstanding work of an Epidemiology staff member. Nomination letters are solicited from Department faculty, staff and students. The recipient is chosen by an internal Epidemiology committee comprised of the previous year's recipient, the Administrator, and one faculty member. The winner is presented with the award by the Chair at the annual School of Public Health and Community Medicine's graduation ceremony. Their name is added to a plaque displayed in the Department. Eileen Seese, manager for the International Aids Research Training Program, was this year's Staff Award recipient.

The Department allocates \$2,000 per year to be used for staff training. Requests are made to the Administrator and priority is usually given to a staff member who needs to learn new skills (or upgrade existing skills) to do his/her work. Most often such staff attend classes held by University Training and Development or Computing and Communications.

The Department also permits flex time for staff who want to attend regular University classes under the University's Tuition Exemption Program, which permits employees to earn up to six credits per quarter without charge. In the past few years many University record systems have become web-based. The University has encouraged departments to consider the possibility of allowing some degree of telecommuting for those employees whose positions enable them to do so. Requests for such arrangements are made to the supervisor with a written plan of duties that will be handled via telecommuting. Supervisors are encouraged to meet with staff who incorporate telecommuting into his/her job at least once per month to review workload and to assess productivity. Telecommuting arrangements are re-evaluated on an annual basis to ensure that the option is working for the department's needs. Flextime and telecommuting have both played an important role in fostering staff morale and retention.

C. Other Programs Within the Department of Epidemiology

C.1 Institute for Public Health Genetics

Public health genetics remains an emerging field that applies advances in human genetics, genomics and molecular biotechnology to improve public health and prevent disease. The University of Washington (UW) Institute for Public Health Genetics (IPHG), supported by the University Initiatives Fund (UIF), is administratively based in the Department. Dr. Melissa Austin is the Director of the Institute. The mission of the Institute is to provide broad training for future public health genetics professionals, to facilitate research in this emerging field, and to serve as a resource for continuing professional education. The program involves 15 core faculty members from 7 different schools and colleges at the UW: the School of Public Health and Community Medicine (SPHCM), the School of Law, the School of Medicine, the College of Arts and Sciences, the School of Pharmacy, the School of Nursing, and the Daniel J. Evans School of Public Affairs. In addition, active collaborative relationships continue with the Washington State Department of Health and the

Fred Hutchinson Cancer Research Center. During the upcoming year, we anticipate that Dr. Paul Miller, former Commissioner of the Equal Employment Opportunity Commission and recent recruit to the UW Law School faculty, will join the core faculty of the IPHG.

A major highlight of the 2003-2004 academic year was the implementation of the Ph.D. program in Public Health Genetics, the only such multidisciplinary degree program in the country. Six students, with a variety of backgrounds, entered the program. Three new courses, developed specifically for the Ph.D. program were taught for the first time this year, and received excellent student evaluations. Seven new students will enter the program during the 2004-2005 academic year.

The IPHG also continues to offer the only Master of Public Health (MPH) degree in Public Health Genetics, and a total of 23 students have now graduated from the program. More than half of these graduates have entered advanced degree programs, including law school, medical school, and genetic counseling programs, one has joined the faculty of the School of Law, and the others are all working in public health or research environments. The IPHG Graduate Certificate Program continues to attract students from many different disciplines. A total of 22 students from 8 different departments have completed the requirements to date. In addition, 3 students are currently enrolled in the M.S. degree program in Genetic Epidemiology. For more information about the Institute for Public Health Genetics, see *Appendix D.1*

C.2 Interdisciplinary Graduate Program in Nutritional Sciences

The Interdisciplinary Graduate Program in Nutritional Sciences is administered through the Department of Epidemiology, within the School of Public Health and Community Medicine (SPHCM). Dr. Adam Drewnowski is the Program Director.

There is a core faculty of 15 (representing departments within the Schools of Public Health and Community Medicine, Medicine, and the Fred Hutchinson Cancer Research Center) and an interdisciplinary faculty of 36 (representing nutrition within the Schools of Public Health and Community Medicine, Medicine, Nursing, the College of Arts and Sciences, and the Fred Hutchinson Cancer Research Center). The Program has strong links to the Health Sciences Center, in particular the Clinical Nutrition Research Unit (CNRU) and the Clinical Research Center (CRC). Through these links, students can participate in nutrition research projects, clinical rotations, counseling, community education projects, and other public health programs. The core faculty have teaching, mentoring and research responsibilities. The interdisciplinary faculty mentor and support graduate students, and guest lecture in courses.

With input and guidance from core and interdisciplinary faculty, Dr. Drewnowski is responsible for the overall management of the graduate program and the oversight of some 62 graduate students. The Program offers a MS, MPH and PhD degree in Nutritional Sciences, as well as the American Dietetic Association-approved Didactic Program in Dietetics and Dietetic Internship to becoming a Registered Dietitian. Principal areas of study include: public health nutrition, experimental nutrition, and clinical nutrition. For more information regarding the Nutritional Sciences Program see *Appendix D.2*

D. Centers

There are four Centers administratively based in the Department of Epidemiology. *Appendix E* has a list of Centers, including a short synopsis of their research.

IV. Epidemiology Graduate Program

A. Mission and Administrative Structure

The Graduate Program's mission is to provide each student with outstanding training in the conduct of epidemiologic studies, thus preparing him or her to make substantial contributions to the generation of new public health knowledge and prevention of diseases and their sequelae.

The Graduate Program of the Department of Epidemiology is administered by the Epidemiology Program Office (EPO). The EPO is led by the Graduate Program Director (Professor Stephen M. Schwartz) and the Alternate Graduate Program Director (Research Assistant Professor Nicholas L. Smith). The staff includes the Manager of Student Services (Ms. Kate O'Brien), who supervises the work of the Counseling Services Coordinator (Ms. Renee Albert) and the Information Specialist (Ms. Valerie Tatsuda).

B. Degree Programs

The Department offers the MS and PhD through the Graduate School; the MPH degree program, offered through the SPHCM, is the subject of a separate review and will not be covered in this section. (However, statistics from the MPH program will occasionally be presented elsewhere in this section to make comparisons with the MS and PhD programs). The detailed goals and requirements of the Department's degree programs can be found in the "Epidemiology Program Guidelines", *Appendix F*.

B.1 MS Program

The MS program provides foundational epidemiologic research training, typically for 1) non-physicians who seek to work in support roles in population health studies, or are preparing for enrollment in a future PhD program; and 2) physicians seeking clinical research training as part of

fellowship and/or residency programs. The program highlights include coursework, primarily in epidemiology and biostatistics, and a research-based thesis project. Required coursework includes the basic Departmental Core sequence (EPI 512, 513, and 514), a series of courses in the Department of Biostatistics, as well as electives (2 courses of which must be among those offered by the Department). MS students are encouraged to enroll in other UW courses that relate to biological, physical, or socio-behavioral factors influencing health. (The Department's course descriptions are located in *Appendix G*). The MS thesis involves a formal proposal, establishment of a committee consisting of at least two faculty members, and an epidemiologic analysis and report of data to test one or more hypothesis. Students typically develop thesis topics based on data previously collected, yet unanalyzed, as part of research studies conducted by Department faculty or other mentors. A small number of MS students each year conduct thesis work that involves primary data collection; typically such students are physicians who have been in a fellowship position at the UW, and began their research project, prior to enrolling in our Department. Thesis committee members generally encourage each student to write the thesis so that it is equivalent in length and style to a typical scientific manuscript. This strategy helps each student develop effective scientific writing skills and also makes the transition to a manuscript submitted to a journal for publication much smoother.

B.2 PhD Program

The PhD program is intended to produce future academicians, highly qualified as independent investigators and teachers, and well-trained practitioners of epidemiology. Most candidates have completed prior graduate training to the master's (or doctoral) degree level in a health-related field. The program includes coursework (largely including and expanding upon the coursework required for the MS program), three examinations (the Doctoral Preliminary Examination—required by the Department—and the “General” and “Final” examinations required by the Graduate School), and the

development, execution, and successful public defense of an independent dissertation research project.

Coursework required for the PhD degree beyond that required for the MS degree includes courses on advanced statistical modeling of categorical and failure-time data, an infectious disease course, two courses focusing on epidemiologic methods or non-infectious disease (e.g., Exposure Measurement, Cancer Epidemiology) and three electives. For most PhD students, electives include courses outside the Department that are relevant to anticipated dissertation work. For example, students interested in immune factors as exposures or outcomes typically would take one or more immunology courses in the UW School of Medicine. An overarching philosophy communicated to all PhD students, however, is that the most important learning one can do is through the conduct of epidemiologic research. Thus, students are not advised to enroll in more courses than are necessary to meet the degree requirements or to provide background appropriate to the dissertation project, although many do.

A student enrolled in the PhD program must demonstrate his or her knowledge of basic epidemiologic theory and methods before being permitted to form his or her dissertation committee. Thus, the Department holds a Preliminary Examination once per year, this examination is open-book, open-note, and takes place roughly from 8 to 5 pm on a single day in June. Substantive areas (e.g., cardiovascular disease epidemiology) and other disciplines (e.g., biostatistics) are not covered. Students are permitted two attempts at passing the Doctoral Preliminary Examination. Each year, the cohort of students intending to sit for the Doctoral Preliminary Examination self-organize to conduct review sessions in the months leading up to the examination; these review sessions are typically led by members of the faculty committee that composes the examination, as well as students who have passed the examination in previous years.

As the dissertation involves a considerable investment of time and intellectual activity, the Department encourages students to begin searching for topics in the first year of enrollment. This first step would involve meeting faculty who might share research interests, or have unique (and time-limited) opportunities to develop ancillary studies or grant applications upon which dissertation projects can be based. Most students, however, do not have sufficient time or expertise during the first year to make significant progress in identifying a topic, nor does the Department expect significant progress at that phase of a student's doctoral education. Exceptions would typically include students with prior Masters training and research experience in epidemiology. Unlike the majority of PhD programs in the US, the Department requires that the dissertation project involve the collection of new data. Our faculty has always felt that PhD graduates who have designed and executed data collection activities under the mentorship of the Doctoral Supervisory Committee are in the best position to compete for faculty positions (as opposed to post-doctoral positions) and have early success as independent scientists. Although this requirement may seem excessively restrictive and perhaps even an impediment to completing PhD training, the strong and extensive research base of our faculty and faculty at affiliated institutions and departments provides numerous opportunities for dissertation projects that involve primary data collection. For example, a student may add a series of questions to an interview used in an on-going study or newly-initiated study, design a validation study of a measurement instrument, or conduct assays on stored biospecimens. While some of the cost of such ancillary projects can be absorbed by the parent study, students often develop and submit grant applications, typically in conjunction with faculty mentors, to support data collection activities for the dissertation. It is not unusual for students to play the lead role in the preparation of NIH R01 applications (or equivalent large grants from other funding entities). However, it is more typical for students to take advantage of several pilot grant programs sponsored by various programs at the UW and affiliated institutions (e.g., the Fred Hutchinson Cancer Research Center). Also, many of our PhD students have written, and been funded through, NIH Small Grant (R03) applications such as those accepted by the National Cancer Institute.

The development of an appropriate dissertation topic typically requires a minimum of several months of work by the student in close consultation with 1-3 lead mentors, one of which usually becomes the Chair of the student's Supervisory Committee. Once the project is developed sufficiently to be known to be feasible and to meet the Department's guidelines, the student prepares a full proposal to be reviewed and approved by the Supervisory Committee. In addition, each student's dissertation proposal is reviewed, in abbreviated form (3-5 pages) at a faculty meeting; the purpose of this review is to ensure that the proposed work conforms to the Department's expectations, and to identify any additional resources or expertise outside of the Supervisory Committee that may enhance the research. The Graduate Program Director encourages students and Supervisory Committee chairs to discuss dissertation topics with him early in the process if there are any questions regarding the appropriateness of the topic being developed.

Following the establishment of the Doctoral Supervisory Committee, the student sits for the General Examination, which has written and oral components. This examination, required by the Graduate School, seeks to determine whether the student is prepared to continue with her or his dissertation work. The written component consists of answers to questions posed by the Doctoral Supervisory Committee. The questions typically are focused on aspects of the dissertation project that have not been dealt with in an in-depth fashion by the student in his/her dissertation proposal, and may address both substantive and methodologic features of the research. Although the format of the General Examination may be customized by a student's supervisory committee, the student is typically given 2-3 weeks to complete the written portion, after which a public oral defense of the responses, as well as any other questions or concerns the Committee may have, is held. If the student passes the General Examination, she/he formally becomes a "candidate" for the doctoral degree, and is approved to proceed with the dissertation research project. In the 11 years covered by this review, no PhD students failed to pass the General Examination; on rare occasions a student who was unprepared may

have been asked to re-take a portion of the examination before a passing mark was given. This high success rate is largely attributable to the fact that the development of a successful dissertation project in the Department requires close collaboration between the student and mentors well before the General Examination is composed.

We encourage, though do not require, each PhD student to write his/her dissertation in manuscript format. As with the MS thesis, this approach helps promote good scientific writing skills and reduce the delay between dissertation completion and manuscript submission to a journal. Typically, therefore, the student's dissertation will consist of an introduction; 1-3 manuscripts describing the methods, results, and interpretation of separate components of the project; and a final chapter that summarizes the findings and significance of entire dissertation research. Analyses not deemed necessary for detailed presentation or mention in the manuscripts are included in Appendices.

When the dissertation work is completed, the student must defend her/his work in public. This defense is the Final Examination, and consists of a seminar during which the study rationale, design, results, and interpretation are presented, followed by questions from the audience. The Doctoral Supervisory Committee then meets with the candidate in private for further questions and discussion. Following this private meeting, the Supervisory Committee meets in executive session to vote on whether or not to award the candidate his/her degree.

B.3 Relationship Between the MS and PhD Programs

The PhD and MS programs are strongly linked. First, approximately two-thirds of our MS students apply with the intention to proceed to the PhD program within our department; these applicants are reviewed with greater attention to qualities desired in a PhD student than in an MS student. A fairly small proportion of MS students who originally did not intend to proceed to the PhD program (and a

larger proportion of similarly-intended MPH students), also do so. Second, MS students often find that thesis projects can be developed into larger investigations that meet PhD dissertation research requirements.

B.4 Benefits of the MS and PhD Programs

Our graduate programs provide substantial benefits to the Department, as student-faculty interactions have been critical to the genesis of new research ideas, development of successful grant applications, and implementation of complex population-research studies. As can be seen from our list of student advisees/employees for each faculty member (*Appendix H*), these benefits are spread widely across the Department's mentors and research groups. Many of our faculty, as well as faculty in the School of Medicine, have degrees from our graduate programs. Our non-physician graduates with terminal MS degrees often are employed by investigators at the UW as project managers or data analysts. The dissemination of our graduates has extended to the greater Puget Sound region, with both PhD and MS degree recipients taking leadership and support positions at institutions such as the Fred Hutchinson Cancer Research Center, Group Health Cooperative, Veterans Affairs Medical Center, and Seattle-King County Public Health.

B.5 Comparison of Degree Learning Objectives to Those at Peer Institutions

We consider our peer institutions to be the Epidemiology departments at Harvard University, Johns Hopkins University, and the University of North Carolina. These programs, like ours, have a large faculty with extensive research programs, enroll many students, and graduate a large percentage of the epidemiology PhDs who eventually become active and productive researchers. In addition, these institutions are our major competitors in the recruitment of new students.

The learning objectives for our MS and PhD programs are found in *Appendix I*. Of our three peer institutions, only one (Johns Hopkins University) has explicit learning objectives (or competencies) available. Nonetheless, through review of a variety of material, including descriptions of required courses, from all three institutions, rough comparisons can be made between our learning objectives and those of our peer institutions. Our learning objectives and those of our peers are essentially the same. The only exceptions are that our MS and PhD programs do not have explicit expectations that 1) students become familiar with historical aspects of the field of epidemiology, or also have a general understanding of the major public health problems facing populations (and their causes), and 2) students be able to advise on epidemiologic methods for other public health professionals or clinicians. These two areas are included in the core competencies for the MS and PhD programs at Johns Hopkins University. It is not entirely clear whether these competencies are expected of students at Harvard University or the University of North Carolina (the course descriptions are not particularly detailed). Although the history of epidemiology and knowledge of major public health problems in the world are not listed among our learning objectives, these topics are covered through a variety of core and elective courses taken by MS and PhD students. In addition, although there is no formal structure for our students to gain experience with consulting activities while in the program, many of the PhD candidates do so on an *ad hoc* basis at the request of faculty.

C. Recruitment and Retention

C.1 Recruitment

The Department has a highly developed website (<http://depts.washington.edu/epidem/>) and application packet, which include all the information normally sought by prospective applicants. They provide program track summaries (*Appendix J*), concurrent degree programs, faculty research and contact information, degree checklists (*Appendix K*), course descriptions (*Appendix G*), relevant

graduate certificate programs, detailed application instructions, tuition rates, step-by-step strategies to find funding (*Appendix L*), a list of fellowships open to Epidemiology students, “Orientation Guide” (*Appendix M*) and career information.

We advertise on Gradschools.com with a link to our website. The number of annual visits to our website through this source continues to increase, with over 1,000 referrals to date in 2004. We have not found other graduate school websites to be worth the cost. The SPHCM recruits heavily at the American Public Health Association using students and faculty from all five departments. We also participate in several on-campus recruiting fairs, but have found that traveling to other in-state events generates little interest.

A major source of recruitment to our graduate programs, particularly for physicians seeking MS degrees as part of fellowships and non-physicians seeking the PhD degree, is the wide dissemination of research conducted by our faculty and faculty within affiliated departments (e.g., in the School of Medicine). Individuals apply to the Department because they know about the high quality and quantity of research being conducted by our faculty. Perhaps equally important, we see epidemiologic research and training as the hub of a wheel, with potentially infinite number of spokes extending to other clinical and scientific fields through which interdisciplinary work is required to address important problems in population health. This philosophy is born out by the extensive interdisciplinary collaborations and research opportunities available through the Department, which positively affect recruitment into our degree programs. The number of prospective and current students asking about interdisciplinary opportunities continues to rise. Areas of particular interest include the intersection between epidemiology and health services, environmental health, pathobiology, nutrition, alternative medicine, genetics, microbiology, molecular and cellular biology, epidemiology in an international context and social determinants of health.

We are able to recruit over 90% of our postdoctoral applicants with prior U.S. or Canadian doctorates. It is sometimes more difficult to recruit the best predoctoral students. Our peer institutions also have excellent name recognition and often more student funding available. It is clear that from many applicant comments that our peer institutions are able to offer funding packages to almost all prospective doctoral students close to the time of admission. The UW Epidemiology Department is not able to do this. Most of our recruitment funding comes from faculty research grants, not only through the Department, but other departments and institutions, such as the Fred Hutchinson Cancer Research Center. Thus, the majority of the funding potentially available to support students is not under direct Departmental control. This makes it impractical to offer support to all PhD admitted applicants at the time of admission, or to make multi-year offers.

We continually seek to improve our recruitment efforts in several ways. We revise our website and our recruiting documents every year to reflect changing demands, requirements, and interests. For example, until about 2000 we used our “Epidemiology Program Guidelines” as the major recruiting document. However, it was too detailed for applicants and we since have developed a new document, “Overview and Degree Programs”, that focuses on program overviews, admission requirements, diversity information and admission and retention statistics (*Appendix J*).

We offer Visit Days each spring to admitted applicants in conjunction with the Graduate Opportunity-Minority Achievement Program (GO-MAP) and SPHCM events. The departmental and school programs include a faculty panel, scientific seminar, student panel, lunch with the Dean, interest area luncheon, happy hour, individual meetings with faculty, student hosts and other events. In addition, we arrange individual visits upon request. The Department has received many glowing compliments about these events.

Our multiple efforts have resulted in significant recruitment gains. For 2004, we recruited 44% of our admitted PhD applicants and 35% of the top applicants. This compares to 1999, our recruitment nadir, when only 16% of those admitted to the PhD program entered and only 10% of the top PhD applicants enrolled. Data provided in *Appendix N.3* shows that between 1993 and 2004 inclusive, the GPAs of PhD and MS applicants who were denied admission tended to be lower than those for PhD and MS applicants who were accepted, whether or not the latter refused or accepted our offer. This pattern was similar for GRE scores (*Appendix N.4*). These patterns fit expectations, given that grade point averages and GRE scores figure particularly strongly in our review of PhD and MS applicants. That admitted applicants who refused our offer typically had slightly higher grades or scores than admitted applicants who accepted our offer most likely reflect the challenges mentioned earlier in competing with our peer institutions.

C.2 Retention

Between Summer 1993 and Spring 2004 (inclusive), the Department awarded 218 MS or PhD degrees (*Appendix N.10*). In contrast, only 24 students (about 12% of degrees awarded, and less than 4 % of all registered PhD and MS students)—19 PhD and 5 MS students—left the program without completing their degree (*Appendix N.6*). For the MPH, 12 students left the program (of 207 graduating and 599 registered). Twelve of the PhD students and all five MS students left of their own accord due to a mix of family, personal health, and professional reasons. Seven of the PhD students left because they had failed the Doctoral Preliminary Examination twice (*Appendix N.7*). Three of these individuals were underrepresented minorities who, like most of the students who did not pass the examination after two attempts, had been admitted to the PhD program despite relatively low GRE scores (which we have found to be an extremely strong predictor of success on the examination) or had done poorly in the core epidemiology course sequence. While we have instituted procedures aimed at further reducing the failure rate on this examination (e.g., by providing students intending to take the examination with detailed preparation advice, advising them to take the minimum number of

credits during their first year, and suggesting and providing tutoring), we feel that the exam retention rate (about 90%) represents an excellent accomplishment.

An additional eight students (two MS and six MPH) transferred to other departments in the SPHCM, a very small proportion that is not unexpected given that students naturally re-evaluate interests once exposed to the specifics of a program to which they initially applied.

D. Applications, Admissions, and Enrollment

Appendix N.1 shows data on applications, admissions, and enrollments in our MS, and PhD programs.

These tables are based for the most part on our internal EPO database rather than the Graduate Student Statistical Summary (*Appendix O*). The Graduate Student Statistical Summary does not provide an accurate picture of the Department's MS and PhD programs because the Summary does not distinguish data on students enrolled in the MPH in Public Health Nutrition, MPH in Public Health Genetics, and the MS in Genetic Epidemiology from the MS and MPH in Epidemiology. Although formally housed in our Department and considered by the Graduate School to be separate tracks under specific Epidemiology degrees, these degree programs have 1) separate admissions processes with different forms, deadlines and requirements; 2) offer many of their own courses; 3) fund their students separately through the Nutritional Sciences Division and the Institute for Public Health Genetics. These programs are therefore, for nearly all intents and purposes, academically independent of our Department's PhD and MS degrees.

Applications to our MS and PhD programs ranged from 61 in 1993-94 to a high of 115 in 1998-99; in the past several years the number has leveled off at approximately 85-90. A further 80-90 applications were reviewed for our MPH program, up from 30-60 in the early to mid-1990s. Across the entire time period, we made offers to about 40% of PhD applicants, almost 50% of MS and MPH applicants.

However, approximately 70% of postdoctoral (*Appendix N.1*) MS applicants (the great majority being

physicians in fellowship programs) were admitted compared to about 30% of predoctoral MS applicants. Accepted offers (enrollments) for the PhD program ranged from 16% to 50% of offers (depending on the year), whereas as for the MS program enrollments were fairly consistent at about 30% of the offers.

E. Advising and Mentoring

E.1 Degree Program Advising and Mentoring

The Epidemiology Program Office places great importance on ensuring that each student is informed of, and follows, all of the requirements of his/her degree program. Requirements are communicated to students in a variety of means. The official documentation of requirements is contained in the “Epidemiology Program Guidelines” (*Appendix F*), which is available on the Departmental Website. Each student is provided with this document when he/she enrolls, and is notified by e-mail when revisions are made. The “Guidelines” covers required coursework, examinations, procedures for thesis and dissertation committee formation, thesis and dissertation work and presentations, timeliness of requirements, and benchmarks allowing each student to assess his/her progress through various phases. Time-to-degree statistics are also provided in our main recruiting document “Overview and Degree Programs” (*Appendix J*). The importance of scholarly integrity is emphasized through material distributed at orientation in the fall of each year, and a link to the policy is available in the “Guidelines” and on an informational web page for current students ([http://depts.washington.edu/epidem/current%20 students.htm](http://depts.washington.edu/epidem/current%20students.htm)).

Each student is further assisted in reaching his or her goal through the use of program checklists. The checklists specifically indicate required courses, the number of electives required, required courses from other department, and overall credit count. All checklists reflect the minimum Graduate School requirements. PhD student checklists indicate the appropriate timing of the General and Final

exams/presentations (*Appendix K*). Students are also encouraged to contact the Counseling Services Coordinator for an official degree audit, and to discuss all questions regarding degree requirements with the Graduate Program Director.

Each student is assigned an academic faculty advisor upon enrollment, and is expected to meet with him/her (or committee chair) regularly, completing a “Progress/Plan” form twice per year, indicating her/his current progress (over the prior two quarters) and future study plan (for the upcoming two quarters - see *Appendix P*). The EPO contacts students who have not returned “Progress/Plan” forms to obtain those that are not turned in as scheduled. The Graduate Program Director reviews all forms to identify any students who do not appear to be making progress, such as MS students who have not identified a thesis topic by the Fall of the second year, and PhD students who have not identified a topic by the middle of the third year of the program or who by the beginning-middle of the fourth year do not seem to have made significant progress on the dissertation project. The Graduate Program Director contacts these students directly to determine what assistance or advice the Department can provide to help remove any impediments to progress. In addition, the Graduate Program Director contacts each MS student and each PhD student who has not completed his/her degree by the beginning of the third and conclusion of the sixth years, respectively, to discuss (and identify strategies to address) issues that may be making progress difficult. As necessary, the Graduate Program Director also discusses such situations with the Chair of the respective thesis or dissertation committee.

E.2 Career Advising and Mentoring

There is a high demand for epidemiology graduates at both the master’s and doctoral levels. The federal government considers epidemiology to be a shortage area. Our Department receives recruitment notices for about 350 relevant fellowships and jobs each year. Career advising and mentoring occurs largely on an informal basis, with the particulars depending largely on the degree

program (MS or PhD) and background (pre-doctoral or post-doctoral) of the student. Informal discussions with faculty who are serving as dissertation or thesis committee chairs or members, or directors of training grants, are probably the most important source of this aspect of mentoring; the Department's "Faculty Interests List" (<http://depts.washington.edu/epidem/fac/facListReg.shtml>), which provides a list of all epidemiology faculty, their areas of research, links to publications, is very useful for guiding students to such experts. We also have a "Careers in Epidemiology" web page (<http://depts.washington.edu/epidem/careers.htm>) that includes background on the field, careers typically pursued by students in the three degree tracks (MS, MPH and PhD), a job forecast based on information from the Bureau of Labor Statistics, links to many local and national institutions and agencies that employ epidemiologists, links to public health fellowships and internship opportunities, and other websites of interest. The Department web site also includes a page devoted entirely to employment positions of recent graduates.

Physicians seeking MS degrees are almost universally interested in academic careers, and they receive most of their career mentoring through the fellowships that support their clinical and research training. The majority of our non-physician PhD students are interested in a mix of academic and research careers in quasi academic settings (as opposed to, for example, public health practice, health policy, or industry). The MS and PhD degree program requirements emphasize skills necessary for research (regardless of setting e.g., academic or private sector) as opposed to non-academic careers requiring large commitments to public health practice, policy, or administration. Most of the latter, however, would expect graduates to have strong quantitative and analytic training and experience, and at least some strong substantive knowledge (e.g., cancer epidemiology), both of which are stressed by our degree programs. Students who think they might be interested in positions that require training and skills not offered by our Department are given advice as to other programs within the University that offer relevant elective courses and work experiences.

F. Placement of Students

To assist students in the job search process, the Department publishes an electronic “Weekly Announcements” newsletter, which includes job listings for student positions, and permanent/professional positions. The “Weekly Announcements” is increasingly expanding circulation as students and faculty from Departments across campus request to be added to the list of recipients. The newsletter has also attracted the attention of hiring authorities at local (and some national) agencies that have contacted the Counseling Services Coordinator to post available positions. Although, we have no statistics, a number of graduates have mentioned to us that they heard about their jobs from the newsletter. Although the UW Career Services Office does not list a large number of public health positions, our students do take advantage of their workshops, which we promote. Our students also are beginning to make use of the new UW Career Connections program to contact alumni in our field.

According to the Exit Surveys (*Appendix Q*), which students usually complete a month or two prior to graduation, between 75 to 94% of our recent PhD graduates had found employment. Between 57 and 73% of master’s students had found employment by the second week of their graduating quarter. Almost all our students find jobs in public health (or related fields, such as medical practice). Approximately 13% of graduating master’s students continued in doctoral programs (usually in epidemiology, but occasionally in a related field, such as medicine). Approximately 25% of our alumni from the past three years currently hold faculty positions, including 50% and 34% of MS and MPH graduates, respectively (*Appendix N.11*). Another 24% hold postdoctoral fellowships or epidemiologic research positions; a substantial proportion of these individuals typically obtain faculty positions after a few years.

Although not a particular focus of our Department, 19% of our graduates, mostly from the MPH program, find positions in public health practice, which contributes directly to improving public health. Although such positions are generally at local and state health departments, a number are with international aid agencies.

G. Assessment of Success of the Graduate Program

Several measures indicate that the Department's Graduate Program is highly successful. First, although to our knowledge there are no formal independent rankings of graduate programs in Epidemiology, the UW SPHCM has been ranked third through fifth (among some three dozen such schools in the US) since 1994 by US News and World Report's survey. Informal conversations with students, faculty, and administrators throughout the US indicate that our ranking as a department would be similar to that of the SPHCM as a whole. Second, over the past 10 years we have experienced an increase in the number of MS and PhD program applicants and enrolled students, and in the quality of admitted and enrolled applicants (as evidenced by increases in GRE and grade point average over time). Third, our faculty have been able to secure an increasing number of training grant positions, an achievement that is due in part to favorable reviews of our degree programs by academic and scientific peers throughout the country when training grant applications are evaluated. Fourth, as indicated below in Section H, although we are not able to offer every accepted applicant financial support at the time of acceptance, by the time applicants accept our offer and arrive in September, nearly all have secured funding. Some of our peer institutions provide little or no support for MS students. Fifth, our students are completing the MS and PhD programs within expected time periods (mean = 2.1 years for MS, 5.8 years for PhD) (*Appendix A*). Sixth, the Graduate School exit survey results (*Appendix Q*) have elicited an extensive set of positive comments, far exceeding the negative responses, with particularly strong positive responses for the quality of the faculty, foundational courses, and support staff. Finally, as described above, placement of our graduates is excellent, with most students finding positions of the type they are seeking within a very short time after graduation.

H. Challenges to the Department's Graduate Program

Although we believe that our Graduate Program is highly successful, it clearly faces continuing challenges that impede even greater accomplishments. Chief among these challenges is the level and certainty of funding available for graduate students. While we have been fortunate to find some funding for nearly all students, and “full” funding (i.e., salary or stipend, plus tuition, benefits, and fees) for many students, the fact that a substantial proportion of these funds come from research grants means that we usually do not know when we offer admission to an individual in the Spring whether or not financial support will be available upon enrollment. Our peer institutions do not appear to have this problem to the extent that it is present in our department. Thus, annually we lose a few of the best applicants for this reason.

As noted above, there is considerable interest among our students in interdisciplinary training. Ensuring the availability of adequate numbers of mentors from other disciplines can be difficult, since the Department has relatively little influence on the hiring and responsibilities of faculty in other departments and institutions. In some areas, such as non-sexually transmitted infectious diseases, we have large numbers of applicants and enrollees, but few mentors based within the Department. State support for one or two such positions, allowing us to recruit new faculty, would strengthen our ability to attract and retain top students in this area that has been historically central to epidemiology and, of course, remains essential to national and international public health practice (as evidenced by the recent SARS outbreak, concerns about influenza pandemics, and other emerging microbiological diseases).

A long-standing challenge is the impression that the Department lacks a sense of community, due in large part to the lack of space for faculty (and their research groups) in the Health Sciences Center. Students are particularly aware of this, as they have limited opportunities to meet among themselves,

or with faculty, outside of classes since their employment or training grant activities typically require them spend extensive time off-campus. We continually strive to develop and implement, with the input of students, both formal and informal interaction opportunities.

A final challenge is the limited formal opportunities in the Department for students to develop essential teaching skills, particularly involving course development. Although many courses involve TA positions, the number of such positions is small relative to the number of doctoral students (who, typically, are most interested in future careers in academics), and these settings do not involve opportunities to learn course development. There are, however, resources at the University level to address such needs for students who are highly motivated. For example, one of our doctoral students recently was awarded a Huckabay Teaching Fellowship to develop an undergraduate level epidemiology course. The EPO is developing plans to establish a set of web-based resources that a student can consult should he or she be interested in obtaining experience in teaching (e.g., list of Departmental courses that hire TAs, list of newly approved courses for which students could be involved in the development, listings of relevant courses in the School of Education).

V. Graduate Students

A. Graduate Funding and Appointments

A.1 Overview

Although approximately 95% of our students receive funding, we do not guarantee financial support with admission to any of our degree programs. Students find funding from many sources, including other UW academic departments and affiliated institutions (e.g., affiliated teaching hospitals, Fred Hutchinson Cancer Research Center).

The strategies for finding funding differ between postdoctoral students and pre-doctoral students. Almost all our postdoctoral students are clinicians supported by clinical traineeships or fellowships associated with local medical centers (primarily UW School of Medicine). The remuneration for postdoctoral fellowships ranges widely from a minimum of \$34,200 without tuition to about \$52,000 plus tuition, depending on the sponsor and the field. In 2003-04, 60% of all of MS students held postdoctoral fellowships or traineeships. *Appendix R.1* is a list of post- and predoctoral fellowships and training grants associated with the Department.

The majority of pre-doctoral students seek funding by directly contacting faculty members upon notification of admission. The EPO asks faculty to provide information about potential funding for new students early in the admissions season; this information is shared with admitted students as it becomes available. The EPO also helps students identify faculty with similar interests, and by sending copies of student applications to faculty who may be interested in supporting them. Each fall the Department usually has four “hard-money” 9-month RA positions (two state-funded and two FHCRC-funded) that, because they are known to be available early in admissions season, are used to help recruit our top applicants by matching up applicant interests with short research proposals submitted by Departmental faculty. In 2004 our faculty submitted over 20 such proposals for the four positions. Historically, faculty support many entering students for several years, although multi-year offers prior to enrollment are rare for reasons mentioned earlier in this report. Other students seek funding for their second year and beyond by applying for RA or training grant positions that are advertised through our weekly e-letter and by contacting researchers at outside institutions.

A.2. Distribution of Support

For the time period under review, for which we have data only on full-time students, approximately 20-30% of students have been supported by RA positions, 30-50% by training grant positions, and 8-30% by fellowships (*Appendix N.8*). TA positions constitute a minority (less than 5%) of our supported positions, as the Department does not have an undergraduate degree program and many of the TA positions are limited to 25% FTE. In general, training grant positions have increased over time, fellowship positions decreased, and In Autumn 2003, 45% of PhD students held training grant positions and another 30% held RA's. (*Appendix N.9*). The remainder had funding through other mechanisms, typically part-time positions associated with their dissertation research. Master's-level RA's comprised 27% of MPH and 17% of MS students. Ten percent of each group had predoctoral traineeships. Our Department has 19-23 pre-doctoral training grant slots in a variety of disciplines, and many of our students also hold some of the more than 30 pre-doctoral training grant slots available through other departments in the SPHCM (*Appendix R.2*). Physicians enrolled in our MS or MPH degree programs are typically supported by nearly 30 clinical fellowships in the UW School of Medicine.

Typical training grant positions last three years; RA positions are more variable (due to uncertainties of grant funding), typically ranging from 1-4 years. Another 15% of MPH students received other types of funding. RA's and TA's are paid on the standard UW scale and promoted according degree level. If an RA or TA has a 20-hour per week appointment, she/he receives a waiver of tuition except about \$200 in student fees per quarter (*Appendix S*). NIH Pre-Doctoral Trainees receive a standard salary (\$1,731 for FY 2004) and tuition (about \$8,100 out of \$11,500 annual resident tuition). The UW waives the non-resident differential tuition for most predoctoral trainees. Many of our trainees also hold 25% FTE RA or TA positions to provide additional experience and help pay tuition not covered by NIH.

PhD students holding RA and TA positions through the University, which are covered by a collective bargaining agreement, receive promotions (and concomitant pay increase) upon completion of the general examination requirement. Other students receive pay increases based on the specifics of the funding source (e.g., NIH training grants typically allow for an annual 3% increase).

A.3 Training and Supervision

The Department offers brief RA/TA training through its new student orientation and “Student Rights and Responsibilities” (*Appendix T*). The RA/TA responsibilities are otherwise too varied to provide in-depth training on centralized basis. Thus, an RA or TA receives his or her primary training from the faculty member who hired him or her. Depending on the nature of the position, the faculty member may assign training responsibilities to a member of his or her staff, including (for example) more senior RAs or TAs whose positions are being assumed by the new appointee. The University offers several workshops throughout the year specifically devoted to TA skills, and our TAs are encouraged to attend these opportunities. A similar UW workshop is offered for RAs, and we recommend that first-time RAs attend this training session. Some RA positions require specialized training e.g., bioinformatics or laboratory work; faculty supervisors ensure that appointees attend relevant short courses or meet with content or methods experts in the University and greater Seattle research community to receive initial training in such skills.

Faculty supervise each RA or TA according to the specific nature of the position. For example, students employed as RAs to conduct data analyses or literature reviews, or as TAs, typically interact closely with faculty and so receive fairly direct supervision from them through weekly meetings and frequent e-mail contact to ensure that the job responsibilities are implemented in a timely manner. In contrast, a student employed to work as part of a large field study or as a laboratory technician might

be supervised more directly (e.g., involving daily or weekly meetings) by a non-student study manager or post-doctoral researcher, respectively, and involve less frequent interactions with the faculty member. Although the UW requires supervisors to conduct annual evaluations of all employees, we encourage all faculty supervisors and their student employees to meet at least quarterly to review the extent to which the job description is being fulfilled (from the viewpoint of both parties), identify problem areas, and propose and implement solutions, if necessary.

B. Governance and Grievance

B.1. Governance

Our students are represented in both Departmental, School-wide, and University-wide governance and decision-making bodies. Elections are held each Autumn by the students to choose the Department's 1) Faculty Representative (the primary liaison with the Department Chair, this individual attends faculty meetings), 2) Admissions Committee Representative, 3) Curriculum Committee Representative, 4) Student Public Health Association Representative, and 5) two Graduate and Professional Student Senate Representatives. The Admissions Committee and Curriculum Committee Representatives have voting rights equal to faculty in advocating for the interests of students in these key decision processes.

B.2. Grievance

For students whose grievance involves some aspect of their employment as an RA or TA, the collective bargaining contract that covers these positions contains explicit procedures to address disputes (e.g., over the interpretation or application of the contract). The process begins with informal discussion between the employee and supervisor. If unresolved, the employee or union may pursue the matter to the next level of supervision and, in some contracts, one level higher. The Labor Relations Office represents the University at the highest step of the procedure and is available for consultation, in conjunction with a Human Resource Consultant, at earlier steps. If the grievance

remains unresolved, mediation may occur prior to arbitration. Mediation involves a neutral third party that works with the union and University to identify mutually acceptable resolutions. The mediator has no authority, however, to require settlement. The final stage, arbitration, is much like a mini-trial where the University and union argue their positions using witness testimony and exhibits before a neutral party who makes a binding decision about the dispute. Details are available at <http://www.washington.edu/admin/hr/laborrel/contracts/uaw/contract/a08.html>.

The Department has an academic grievance resolution policy for students (*Appendix T*). It is recommended students attempt to follow this procedure, but students may file a formal grievance complaint directly with the Graduate School if preferred. Briefly, a student should first try to resolve the issue with the faculty or staff member directly concerned. The Graduate Program Director should be consulted if the issue is still unresolved; he/she will attempt to arrange a conciliation with the faculty/staff member involved in the grievance. Should these steps fail to resolve the grievance, the student may bring the issue to the Department Chair; consulting the Department Chair must occur within three months of the incident. Unresolved issues may be then taken to the Associate Dean for Academic Affairs of the School of Public Health. If either the Graduate Program Director, Department Chair or Associate Dean are involved in the complaint, another faculty member may be appointed by the next person above the involved faculty member in the chain of authority. Students are allowed to skip any of the steps mentioned above and appeal to the next level. If the issue remains unresolved after consultation with the Associate Dean, the student may file a formal complaint with the Graduate School within ten UW business days of the conclusion of the attempted informal process. We note that there have been no formal grievances by students in the Department in the past several years.

C. Space

One of the most serious problems campus-wide is space. Each of the departments in the School of Public Health and Community Medicine have been given small cubicle spaces in T341 for assignment to students for their studies (*Appendix U*). This space is a large room that allows for interdisciplinary collaboration and interaction with other students within the Department and the entire School. This space is conveniently located across the hall from the Health Sciences Library. Epidemiology has seven cubicles and one office for a total of 994 sq. ft., for assignment. Two of the cubicles have been designated as shared computer space (see section following). One cubicle has been assigned to the International AIDS Training Program (IARTP) for their trainees. The office in the T-wing space has been assigned to their faculty advisor. The remaining four cubicles are assigned by the Epidemiology Program Office. Priority is given first to Ph.D. students who have no other office space (on or off campus) in which to study. Next priority is given to Master students. Master student cubicles are usually shared. These are assigned on a first come first serve basis, which frequently results in a long waiting list. Cubicles remain assigned to the individual students as long as they are in the program (not on leave) and are actively using the space.

D. Computing

In 1997 space was identified in the T wing of the Health Sciences Center that could be used for a computer lab by Epidemiology students. With funding from the Student Technology Fee, four computers and a server were purchased. The popularity of this lab was immediately apparent and the need to expand was soon identified. In 1999 space on the third floor of the F-Wing was remodeled for use as a computer lab, and the number of computers was increased. In 2001, with additional funding from the Student Technology Fee, nine new Pentium 3 computers and a new Dell Poweredge server were purchased to replace the old outdated models. All computers are equipped with current software. The lab is heavily used. Students are assigned access codes by the lab administrator who is supported by the Department at 25% FTE. There are currently 140 active student accounts.

Given the heavy use of the lab, in 2004 we submitted another proposal to STF requesting five Pentium 4 computers and a laser jet printer to be housed in the student T-wing space and networked to the lab in the F-wing. These hardware items were to replace old computers that were too old to even be networked to the server and basically were being used only for email by students. This expansion was enthusiastically supported by students who now have space to work in the T-wing and the ability to access their files on the server in the F-wing.

VI. Faculty

A. Current Faculty

Appendix B lists the current faculty by rank and indicates for each their academic degrees and area of expertise. *Table 1* shows the distribution of faculty by gender, minority status and home department. For additional detail regarding individual faculty, *Appendix V* provides a NIH-format biographical sketch for each of the regular and research faculty members in the Department. There are 33 faculty with primary appointments in the Department of Epidemiology. Currently, six have tenure appointments and one additional faculty member has tenure under the Nutritional Sciences Program and, 24 are without tenure (WOT) due to source of funding. Fourteen faculty have joint appointments with primary appointments in other departments: one in Environmental & Occupational Health Sciences, one in Surgery, one in Dental Public Health Sciences, two in Health Services, one in Pediatrics, two in Psychiatry & Behavioral Sciences, and six in Medicine. There are 15 research track faculty, two with joint appointments in other departments (Psychiatry and Pediatrics), two Senior Lecturers, one Part-time lecturer, and two Research Associates. There are six Emeritus Professors; five are currently still active in the Department.

Also shown in *Table 1* is the number of faculty with adjunct, clinical and affiliate appointments, by

gender, minority status and home department. The Department of Epidemiology has 38 adjunct faculty holding primary appointments in other UW departments, 35 affiliate and 54 clinical faculty holding primary appointments in other organizations outside the University.

The Department of Epidemiology has grown substantially since the last program review in 1993. Strengthening of the faculty at the junior ranks has been a high priority during this ten-year period. *Table 2* lists the new faculty appointments made from 1993-2004, as well as the loss of faculty during this time period, by year. There have been 26 appointments at the rank of Assistant Professor (13 in the research tract). Of these, two have left the Department and one is deceased. Seven faculty retired and were awarded Emeritus status.

B. Recognition and Honors

The Department of Epidemiology has an excellent national and international reputation. In the eleven years since the last program review, many of the departmental faculty have received awards and special recognition for their contributions in the teaching and practice of epidemiology. *Appendix W* lists specific honors and recognition that have been received by departmental faculty. Some notable examples include the following: Professor Susan Astley, Richmond Cerebral Palsy Award, American Academy for Cerebral Palsy and Developmental Medicine (1998); Professor Janet Daling, APHA Wade Hampton Frost Award (2003); Professor Scott Davis, elected Member (Academician), Russian Academy of Medical Sciences (2004); Assistant Professor Glen Duncan, Excellence in Exercise Science Award, University of Tennessee, Knoxville (1997); Professor Jack Goldberg, Institute of Medicine, Committee on Twin Studies (2000-2007); Professor Ann Marie Kimball, Fulbright New Century Scholar Award (2001-2002); Professor Tom Koepsell, University of Washington Distinguished Teaching Award (1990) and Abraham Lilienfeld Award, Epidemiology Section, APHA (1994); Professor Laura Koutsky, Achievement Award, American Sexually Transmitted Diseases Association (2003); Professor Suresh Moolgavkar, Distinguished Achievement Award, Society for

Risk Analysis (2001); Professor John Potter, The Herbert J. Block Memorial Lectureship Award for Distinguished Achievement in Cancer Research (2000) and The American Society of Preventive Oncology Distinguished Achievement Award (1999); Professor Andy Stergachis, American Pharmaceutical Association Foundation Pinnacle Award, Career Achievement (2002); and Professor Noel Weiss, UW Distinguished Graduate Mentor Award (1999).

A major strength of the Department is the research productivity of the faculty and the substantial contributions they make to improve our understanding of disease etiology and to the prevention of disease. As noted earlier, faculty research is highly interdisciplinary and encompasses a broad range of topics. Research is facilitated by close collaborative ties with a number of other institutions and programs in the Seattle area. *Appendix E* for lists the principal research projects currently underway and the Centers housed within the Department, along with the primary faculty associated with each project and a brief synopsis of the research being conducted.

C. Service

Faculty in the Department of Epidemiology are very active in serving the Department and University, the community, and the profession. Although there is not a large demand to serve on departmental or University committees, particularly given the number of regular faculty, most serve in some capacity from time to time and are happy to do so when asked. (Table 7 is a list of departmental standing committees). Most faculty are very active as referees, editors and associate editors of scientific journals. Many serve on NIH study sections and review groups, and many are members of advisory committees, boards, and councils of various types. A number of faculty have held leadership positions in national and international professional organizations. Most also engage periodically in some form of consulting activity. To provide a more complete description of the extent and breadth of service activity undertaken by Epidemiology faculty, *Appendix X* provides a representative listing of the types of service activities departmental faculty have been involved in during the last several years.

D. Evaluation

Each member of the faculty with a regular or research appointment in the Department of Epidemiology is reviewed on an annual basis. Reviews take place at the September faculty meeting. All faculty of appropriate rank participate in the review process. The primary purpose of the reviews are to regularly assess progress, to identify any potential weaknesses or difficulties that need to be addressed, and to provide a basis for allocating merit salary increases.

Prior to the review meeting, faculty are asked to submit an updated curriculum vitae, a self assessment for the previous year, and any other materials they think are relevant to the review process. Materials submitted by faculty at the rank of Associate Professors and below are distributed to the faculty senior in rank for review and comment. This is now done electronically using a web-based system created specifically for this purpose. Each faculty member can access materials only for those individuals he/she is eligible to review (those junior in rank). The system allows the reviewer to indicate how familiar they are with the person's research (three categories); to rank them on a 6-point scale; and to write comments.

The Chair assigns one senior faculty member to each junior faculty member for purposes of presenting that person's record and leading the discussion at the faculty meeting. The progress of each faculty member is presented by the assigned reviewer at the meeting and then discussed among those senior in rank. After the meeting the Chair compiles the scores and senior faculty comments. The Chair meets individually with each faculty member at the rank of Assistant Professor and below, and every other year with each Associate Professor, to discuss the evaluation report from the senior faculty and to review progress towards promotion. A letter summarizing the meeting is sent by the Chair with recommendations for the coming year. The junior faculty member has ten days to reply if there are any additional items to discuss or disagreements with the letter.

An important aspect of the annual review is to assess whether the individual is ready to be considered for promotion. If the assessment is positive, in the Spring of the following year the Chair forms a committee of three faculty senior in rank to assemble and review a packet of materials and make a recommendation to the full faculty senior in rank. The committee is responsible for identifying individuals from whom letters of evaluation will be sought, with input from the faculty member being considered. The Chair requests the letters over the summer and updated materials are collected (e.g., CV, self assessment, representative publications, teaching evaluations). The committee reviews all of the materials and submits a written report and recommendation to the Chair. The report is presented to the faculty senior in rank at a faculty meeting in the Fall for discussion and a vote. Upon a favorable vote, the full packet along with a letter of support from the Chair is submitted to the SPHCM Faculty Council for consideration.

The Department of Epidemiology follows the School of Public Health & Community Medicine written guidelines for promotion of faculty (*Appendix Y*). Expectations for achievement are specified in the following areas: research, teaching, service and public health practice (if applicable).

Accomplishment in research is assessed by consideration of the following: evidence of significant contributions to his or her field of research, with including evidence of a national or international scientific reputation depending on rank; number of publications, senior authorship, and methodologic or substantive content of published papers; quality of the journals, national and international recognition of the work (citations, invited presentations and lectures), honors and awards received in recognition of outstanding research; and success in obtaining peer-reviewed grant and contract funding.

Accomplishment in teaching is assessed by consideration of classroom teaching, other outside teaching and mentoring of graduate students. Classroom teaching is evaluated through student evaluations and faculty peer review within the Department as described earlier in this report. Table 8

provides a listing of classroom teaching by faculty mentors and Table 9 shows student credit hours by faculty member since 1998.

Faculty service to the profession is measured by such things as membership on advisory panels and committees, study sections and review groups, editorial boards, and leadership position in professional organizations. Service to the University, School and Department is measured primarily by membership on committees, and other specific service activities.

To encourage the advancement of scholarship in academic public health practice (academic PHP), the School of Public Health and Community Medicine has established guidelines to evaluate scholarly academic PHP activities of faculty in partial fulfillment of the requirements for promotion. For these purposes, Academic PHP is defined as the “applied, interdisciplinary pursuit of scholarship in the field of public health.” Faculty engaged in academic PHP carry out the mission of developing and applying new knowledge to improve public health in the population, and typically practice in public health agencies and in community, medical, and other public health organizations. Quality of Academic PHP is measured by such things as evidence of designing or conducting a public health survey; providing technical assistance to public health or health care organizations to help that organization improve its operation; assisting local, state or federal policy makers with analysis or development of health policy; and international health projects.

E. Compensation and Retention

In 2002 a comprehensive review was taken of all faculty salaries, taking into consideration equity within the department and comparing salaries to peer institutions. This resulted in increases ranging from 12% – 18% (the largest going to our most junior faculty). Since that time salaries are reviewed annually using this criteria. Through this annual review, the department is proactive in trying to

avoid losing valued faculty to other institutions. Since 1999 there have been attempts to recruit two departmental faculty members to other institutions. By being able to offer competitive packages, we were fortunate enough to retain both faculty members. (*Table 3*)

F. Mentoring of Junior Faculty

Mentoring of junior faculty has always been an informal process in the Department of Epidemiology. There are no requirements for establishing mentoring relationships, and therefore no assignment of senior faculty as mentors or creation of mentoring committees. However, junior faculty are encouraged to seek advice and “mentoring” from senior faculty as they see fit. Informal mentoring takes place in a number of ways. The most structured approach is the annual review process and the individual meeting with the Chair. As noted above, this is a careful review of progress for each junior faculty member and provides a mechanism for feedback, both from individual faculty and the Chair. Often as a result of the review discussion, one of the senior faculty will speak directly with the junior faculty member to convey information or address points of concern in a friendly “mentor-like” interaction. The annual and bi-annual meetings with the Chair are primarily serve to provide mentoring advice. Other important means of informal mentoring by senior faculty that are common in the Department include: serving with junior faculty as PI or Co-investigator on a research project; serving with junior faculty as Chair or member of a Master’s or doctoral supervisory committee; and co-teaching a class with junior faculty.

VII. Funding

A. State of Washington

Departmental funding from the State of Washington in 2003 – 2004 provided 5.9 FTE of support for tenured and tenure-track faculty, 1.0 FTE for research assistants (RAs), 3.25 FTE for administrative

support, 0.20 FTE for student assistance, and \$12,727 in operating expenses. The actual State support allocated for tenured and tenure-track faculty in a typical year is below the budgeted levels and is instead used for teaching support for other faculty, TAs, and some of the Department's other teaching expenses. In 2003 – 2004, a total of 4.22 FTE of State funds were actually distributed in salary to faculty, with 50% of that 4.22 FTE distributed to non-tenured and non tenure-track faculty who taught courses. The remainder of State funds was combined with other departmental funds to provide additional support for TAs, staff, and other academic program needs.

B. Research Funding

The majority of the total departmental budget is derived from research grants and contracts. All faculty receive at least half of their salary support from outside research funds. Only 4.22 FTE of the more than 32.0 FTE of faculty salaries paid primarily through Department budgets are from State funding, with the remainder representing direct expenses on research grants (*Table 4*).

In addition to the research funding covering direct expenses (salary support for faculty, staff and graduate research assistants, facilities, computing, and supplies), the Department receives a substantial percentage of its budget from Indirect Cost Recovery. In 2003 – 2004, approximately \$883,000 was recovered from indirect costs and was used for Department expenses related to TAs, RAs, staff support, computing, supplies, and faculty development.

C. Gifts/Other

The department and the School's development office solicit donations to our discretionary fund. These funds are used to hold events for faculty, staff and students that would not otherwise be possible due to restrictions on use of research and State funds. The amount of donations have increased from \$3,740 in 2001-2002 to \$8,529 in 2003-2004.

Each year we ask faculty to donate to a separate Epidemiology Social Fund. These funds are used to pay for such events as the Epi Spring Social, New Student Orientation, and Prospective Student Visit Day. Two years ago, in order to increase donations, the department committed to match donations dollar for dollar. This resulted in a 100% increase in donations over the previous year.

VIII. Challenges

A. Space

One of the most serious challenges in the Department is a critical shortage of contiguous student, faculty and staff space on campus. As our student enrollment and number of research funded faculty positions continue to grow, the lack of contiguous campus space is increasingly resulting in a number of unfortunate consequences. With project offices and faculty housed in locations throughout the Seattle area, there is limited opportunity for interactions with colleagues and students, and collaborations are more difficult to organize and sustain. With little to no office space available within the School or close by, recruiting faculty is much more difficult. A particularly unfortunate consequence of the absence of good space is the lack of regular presence on campus of faculty who are based elsewhere. This has far-reaching negative consequences on all aspects of the graduate program. A lack of regular presence is especially a concern regarding a substantial number of faculty who have joint appointments and are based at the FHCRC, where they have more spacious and accommodating offices, as well as facilities for students. In addition, there is a major financial impact of the lack of space in the form of a loss of potential research revenue for the Department and University. Many of the faculty based elsewhere, such as the FHCRC, submit grants through their primary institution instead of the UW because there is not adequate space to house their research staff.

We have made every effort to maximize the use of our existing space. We recently remodeled

existing space in the F-wing that was being used for research specimen freezers. We were only able to accomplish this by borrowing freezer space from another department within the School. With the recent loss of temporary office space in the old Fisheries building, we have been given office space in the I-Court that is on loan indefinitely from another department within the school. We have dedicated several shared offices for teaching for faculty who are primarily based elsewhere. Such faculty can sign up for use of a specific office in any quarter that they are teaching in order to maintain campus space to meet with students. The remaining departmental office space has been used to provide shared office space to as many faculty as possible who are based elsewhere, assigning two people to an office. To date we have been able to offer such an arrangement to all those who are interested and most of the junior faculty, but there is not sufficient space to accommodate everyone or to be an incentive to attract faculty to campus on a regular basis.

B. Funding

The amount of funding provided to the Department from the State of Washington continues to be inadequate to fund the graduate program and departmental operations. Currently, the Department receives approximately \$938,000 in State funds annually, but the current annual operating budget is approximately \$1,600,000. The difference is made up through strict budgeting and research cost recovery, which is currently substantial (\$883,000). This, however, is an unsatisfactory approach because of the instability of indirect cost recovery as a funding source. Use of these funds to support departmental operations and the academic program is not a long-term solution to the shortfall of State funding or a viable means for enabling growth in the academic program. Furthermore, the contribution from the State is not likely to improve in the foreseeable future and is likely to continue to decrease.

Since 1998 the University has returned a much larger share of a Department's indirect research cost recovery to the SPHCM (44.7%). The SPHCM returns a substantial proportion of that amount (94%)

back to the individual departments. In order to enable growth and to sustain the quality of the academic program, the senior tenured faculty have tended to “give back” some of their State salaries when possible by not taking their full tenured salary when they have other sources of funding. The Department has also been fortunate that the faculty as a whole have been very successful in their research, which has resulted in a substantial indirect cost recovery return to the Department. However, as noted above, given the instability of these resources, it is unwise to allow the academic program to become increasingly dependent on that source of funding. Factors that could potentially decrease future indirect cost recovery returns to the Department include: a downturn in research funding resulting from changes in national funding priorities; a change in the University’s policy in the amount of indirect cost returns to the School; or a change of Dean within the SPHCM that could result in a change of policy. Clearly, it is important to identify new approaches to provide a more secure base of future funding. An important priority in this regard will be to continue to work with the development office in the School to pursue funding from the private sector.

C. Faculty

The primary challenges facing faculty are related to the limitations of space and funding discussed above. As already noted, lack of space makes it very difficult for faculty to fully integrate into the Department and to interact with colleagues and students. This results in much less of a cohesive unit than should be the case, and undoubtedly a loss of opportunity for scientific collaboration as well as involvement with students. Communication among faculty is more difficult and less frequent and regular. In the last four years there has been a substantial effort to increase opportunities for faculty to get together, particularly with time for social interactions. Examples include: a restructured departmental seminar, annual prospective student Visit Days, annual holiday party, annual new student reception, annual Spring student party, and monthly happy hour with students

The lack of funding restricts what the Department can offer to faculty (e.g., support for RAs and TAs, pilot funding, interim salary support, travel funds), and therefore forces them to provide for themselves through other means, often through other base institutions. A particularly negative result in many cases is a further distancing from the Department and a reluctance to contribute to the programs and activities in the Department without some form of compensation or return “in kind”. Efforts are continually being made to address this situation. Examples of actions taken in the last three years include: increased support for departmentally funded RAs; increased support for TA positions; small contributions of salary support for faculty engaged in substantial service to the Department; provision of 5% of the previous year’s indirect cost recovery returned to the Department to the PI generating the return; and provision of one professional membership or journal subscription per year to each faculty member.

D. Staff

Maintaining qualified staff with little turnover is the primary challenge facing the Department regarding staff. A significant problem in this regard is that we are bound by State salary levels for classified staff. These salary levels are low, and the legislature has voted to give no raises to classified staff for the past three years. The problem has been made worse by rising costs of health insurance to the employee. Where appropriate, we have tried to re-classify such jobs into professional staff positions, but some positions do not meet the criteria for exemption.

The University has implemented a program that gives employing units the flexibility to award to both contract-classified staff and WPRB classified staff additional salary increment steps to address serious retention or salary equity/alignment issues. There is no limit to the number of additional steps that may be approved at one time, but the additional salary increment increase cannot exceed the top automatic step of the employee’s range and does not change the employee’s periodic increment date.

Another program, The Career Enhancement/Growth program (CEGP), gives employing units the opportunity to recognize and reward contract classified staff who: 1) have been at the top step of their salary range for a minimum of one year; and 2) whose development of skills, increased productivity, or permanent assumption of higher-level duties have resulted in service enhancements or efficiencies exceeding those normally expected of someone in the employee's classification (but which do not otherwise qualify the employee's position for reclassification). The CEGP applies only to contract classified staff and not to any other University of Washington employees. There are no restrictions in the number of staff in a unit who may receive CEGP steps. Receiving a CEGP step does not result in a new increment date. Use of both of these programs are encouraged in the Department, but many times staff either take professional staff positions in other departments or leave the University altogether for jobs in the private sector. In an effort to minimize these negative impacts on classified staff, we strive to reward and recognize each individual on a daily basis and to accommodate requests for such things as flex time or telecommuting when possible.

IX. Diversity

A. Students

A1. Progress Within the Past 10 Years

During the review period the Department made excellent progress in the recruitment and retention of minority students. In 1993 approximately 10% of our applicants were from minority groups, and in 2004 that proportion increased to approximately 28%. Similarly, in 1993 approximately 4% of new students were minorities, and in 2004 this figure had more than quintupled (about 25%). Minority students as a percentage of total enrollment rose from 9% in 1993 to 20% in 2003. (*Appendix N.1 and N.5*). The increase in minority enrollment can be traced to a significant upgrading of recruitment materials and methods at the University, School, and Departmental level. For example, the University's Graduate Opportunities and Minority Achievement Program (GO-MAP) makes specific

recruitment recommendations to graduate programs, many of which the Department has instituted. GO-MAP obtains names and addresses of undergraduates at all major academic research institutions and academic institutions with large minority populations, sends an attractive brochure about minority support services and brief information about all the graduate programs at the University, and forwards names and addresses of interested minority students to specific departments. GO-MAP offers an extensive Visit Day each spring targeted at (but not limited to) accepted minority applicants, and our department's Visit Day is scheduled in coordination with the GO-MAP's event. Notably, over half the participants in the GO-MAP Visit Days were from the School of Public Health last year. GO-MAP provides travel support (e.g., airfare), fellowship and RA positions to selected minority applicants as recruitment incentives; our Department has usually been able to obtain at least one GO-MAP RA when we have admitted a qualified minority applicant. Once enrolled, students of color can look to GO-MAP to provide academic, social and psychological support.

The SPHCM's Office for Student Services (SPHOSS) specializes in (but is not restricted to) the recruitment and retention of students of color by 1) helping applicants with the admissions process, 2) providing enrolled students with counseling and tutoring, 3) assisting with recruitment of mentors, preceptors and lecturers, 4) working closely with campus-wide organizations such as the Community Access Network for Diversity Outreach to coordinate recruitment efforts with other units across the University, and 5) offering funding aimed at minority students and seeking external sources of minority funding.

The SPHCM recruits, with Epidemiology faculty and student involvement, at diversity fairs and professional conferences (e.g., American Public Health Association). Unfortunately, SPHCM-level funding for visits to institutions with large minority populations was discontinued a few years ago, but SPHOSS has increased outreach to community college students and to students at schools such as Heritage College and Central Washington University where there are growing populations of

Hispanic and Native American Students. The SPHOSS has also co-sponsored a Saturday Academy to introduce disadvantaged 8-12th graders in the Seattle area to health careers, and co-sponsors the Minority Pre-Health Student Organization's annual conference. In Autumn 2004, the SPHCM plans to reactivate a student/faculty committee to oversee diversity-related activities. The School and the Department of Epidemiology offer many seminars and events focusing on issues of interest to minority students, such as the two-day "Health Disparities Symposium" held in the Spring Quarter 2004.

The Department has enhanced the diversity content of its recruitment materials, including expanded sections on student and diversity resources (*Appendix J*) and a web page addressing issues of interest to minority students and applicants. A special email recruitment letter (*Appendix Z*) was developed for name exchange registrants and other minority correspondents. In conjunction with 16 other UW biomedical research programs, the Department produced an extremely attractive booklet (*Appendix AA*) that is distributed at high school fairs, to undergraduate student counselors, and to underrepresented minority students through minority affairs offices, recruitment fairs, recruitment visits to universities with high minority enrollment, and other venues. The Department's application material encourages applicants to address socio-economic or educational disadvantages they have experienced and their potential contribution to diversity and cultural awareness in the Department.

Within the Epidemiology Program Office, we increased a student services staff position from halftime to fulltime, and hired an African-American woman. She has been very active in attending diversity and recruitment events, such as serving on the organizing committee for the Martin Luther King Jr. Day Health Sciences event. For the past seven years, the Admissions Committee has included one underrepresented minority member; two-thirds of the committee members are women; physicians, non-physicians and one student (elected by the student body) also serve. In 2003, the Department spent as much on airfare trying to recruit admitted under-represented minority applicants

as it did for Caucasian applicants. During the past six years, all admitted under-represented minority applicants have been offered airfare to visit and scholarships or RA positions.

We have engaged in multiple efforts to increase retention of minority students beyond those aimed at our students in general. Two examples include: 1) We attempt to assign advisors who will serve as mentors to minority students; and 2) The SPHOSS has provided \$500 for minority student tutoring, which the Department has matched with another \$500. Over the period being reviewed, Department faculty interest in socioeconomic and cultural factors that affect health has increased significantly, providing enriched opportunities for students to pursue such topics. We now have five courses that focus extensively on the relationship of ethnicity and socio-economic status to disease.

A2. Challenges

The progress described above has been made in the face of significant challenges, beginning in 1999 with the passing of initiative I-200 by the citizens of the State of Washington. I-200 made it illegal to use race or gender as an explicit factor in admissions decisions. Between 1993 and 1999, applications from minority individuals increased 6-fold (from 10 to 60), but following the passage of I-200 they dropped by approximately 35% (similar to the campus-wide decline). We continue to encourage applications from under-represented minorities and from others with diverse backgrounds. We consider diversity as one factor in making financial support decisions where appropriate, such as for training grant participation. Although the current annual number of minority applicants (between 30 and 50) is still greater than at the beginning of the 10-year period being covered by this review, it has been disappointing to see our progress slowed.

Identifying qualified minority applicants also is challenging because epidemiology requires strong math, health science, analytical and language skills. Underrepresented minorities are more likely to receive their pre-college education in settings where the quality of training in these areas is highly

variable, and many undergraduate institutions do not offer rigorous programs in these areas. Such backgrounds tend to lead under-represented minorities to have less practical work experience in quantitative careers and lower GRE scores than other applicants, placing them at a competitive disadvantage in our admissions decision process. When qualified under-represented minorities do apply to our program, we are competing (often unsuccessfully) with well-known, well-funded programs located in regions with high minority populations (e.g. the eastern U.S.).

A3. Addressing the Challenges

Recruitment of under-represented minorities into our MS and PhD programs might be improved if the Department was able to increase recruitment of minority faculty members (to serve as mentors and role models), or establish an endowed faculty position dedicated to epidemiologic teaching and research focusing on the effects of socio-economic status on health. The University also could assist the Department, in several ways, in its direct attempts to recruit minority applicants. First, due to the recent unionization of Research Assistantship and Teaching Assistant positions, the deadline for faculty to offer funding to new students is after the GO-MAP Visit Days. Since under-represented minority students often attend the GO-MAP Visit Day for their only trip to the University after being accepted, there is no time for students to meet with faculty who have funding for positions prior to the date that such positions must be offered. The solution would be to move the GO-MAP Visit Day to earlier in the year (e.g., early March). Second, the University could assist by providing more funding to the SPHOSS to recruit applicants from out of state, and support more GO-MAP Research Assistantships. Each of these would allow us to recruit more effectively students who are also applying to competing institutions. Finally, if the University could work towards the repeal of I-200, or the exclusion of higher education from its provision, it would contribute significantly to increased minority enrollment across the institution.

We have considered providing less emphasis in our review deliberations (regardless of an applicant's minority status) on GRE scores or experience in quantitative fields. For all ethnic groups, however, GRE scores are strongly correlated with passing the Department's Doctoral Preliminary Examination. The correlation is so high that we require GRE scores from PhD applicants who already hold a U.S. doctorate such as an MD. Similarly, faculty are not likely to offer a student an RA position if he/she lacks relevant experience. The Department does not think it assists an applicant, under-represent minority or otherwise, to admit him or her to the PhD or Master's-to-PhD track if his or her GRE scores do not bode well for passing the examination, or if his/her experience is sufficiently limited that it will be difficult to identify financial support.

B. Staff

Table 6 shows the distribution of Professional and Classified Staff in the Department by gender and minority status. For a staff of the present size, there is considerable diversity. The Department and the University strongly encourages applications from minority individuals and includes such wording within the advertisement for each new position that is posted. Historically, however, the Department has not made any specific efforts to target minority staff applicants for open positions.

C. Faculty

Table 1 shows the distribution of faculty by gender and minority status, and *Table 5* details the recruitment of women faculty over the last ten years. The Department has had considerable success in the recruitment of women, having made 26 primary faculty appointments to women from 1993-2004. Currently there are 33 women on the faculty at the Assistant Professor rank and above, and two minority faculty. As with staff, the Department strongly encourages applications from minority individuals for new faculty positions, but has not made specific efforts to target minority applicants for such positions. Assignment of teaching and service responsibilities and evaluation of minority

faculty are identical to that of all other faculty in the Department. There are no special expectations or requirements of minority faculty.