

# EPIDEMIOLOGY PROGRAM

*Director:* Jennifer L. Kelsey (Professor of Health Research and Policy)

*Steering Committee: (Professors)* J. Martin Brown (Radiation Oncology), Byron W. Brown, Jr. (Health Research and Policy, Division of Biostatistics), Jennifer L. Kelsey (Health Research and Policy, Division of Epidemiology), Helena Kraemer (Psychiatry, and Medicine), Robert Marcus (Medicine; Division of Endocrinology, Gerontology, and Metabolism), Alice S. Whittemore (Health Research and Policy, Division of Epidemiology)

*Cancer Biology:* J. Martin Brown (Professor)

*Genetics:* Neil Risch (Professor), Richard Myers (Professor)

*Gynecology and Obstetrics:* Emmet Lamb (Professor emeritus), Mary L. Polan (Professor)

*Health Research and Policy:* Rodney Beard (emeritus), Byron W. Brown, Jr. (emeritus), John Farquhar (Professor, emeritus), Gary Friedman (Consulting Professor), Mark Hlatky (Professor), Jennifer Kelsey (Professor), Abby King (Associate Professor), Lorene Nelson (Associate Professor), Ralph Paffenbarger, Jr. (emeritus), Julie Parsonnet (Associate Professor), Atsuko Shibata (Assistant Professor), Robert Tibshirani (Professor), Alice Whittemore (Professor)

*Medicine:* John Farquhar (Professor), Stephen Fortmann (Professor), James Fries (Professor), Alan Garber (Professor), William Haskell (Professor, Research), Halstead Holman (Professor), Helen Hubert (Senior Research Scientist), Robert Marcus (Professor, Clinical), Julie Parsonnet (Associate Professor), Gary Schoolnik (Professor), Peter Small (Associate Professor), Marcia Stefanick (Associate Professor), Lucy Tompkins (Professor), Marilyn Winkleby (Senior Research Scholar)

*Microbiology and Immunology:* Ann Arvin (Professor), Charles Prober (Professor), Gary Schoolnik (Professor), Lucy Tompkins (Professor)

*Neurology and Neurological Sciences:* Leslie Dorfman (Professor)

*Neurobiology:* Denis Baylor (Professor)

*Pediatrics:* Ann Arvin (Professor), Laura Bachrach (Professor), Yvonne Maldonado (Associate Professor), Charles Prober (Professor)

*Stanford Center for Research in Disease Prevention:* John Farquhar (Professor), Stephen Fortmann (Professor), William Haskell (Professor), Helena Kraemer (Professor), Abby King (Associate Professor), Marcia Stefanick (Associate Professor, Research), Marilyn Winkleby (Senior Research Scholar).

## GRADUATE PROGRAMS

The Epidemiology Program offers interdisciplinary instruction and research opportunities leading to the M.S. and Ph.D. degrees in Epidemiology. The program has strengths in the following areas of epidemiology: cancer; cardiovascular, infectious, musculoskeletal, and neurological diseases; clinical epidemiology; genetics; some aspects of epidemiologic methods; and reproductive, environmental, and occupational epidemiology.

### MASTER OF SCIENCE

The M.S. program is designed to provide training in epidemiologic methods to professionals in a variety of related fields and to serve as an introduction to those with bachelor's degrees who are considering careers in epidemiology. Applicants to the M.S. program should have previous course work in biology and statistics or mathematics.

To receive the degree, students are expected to obtain a thorough grounding in epidemiologic methods and applied biostatistics and to demonstrate research skills through the completion of a master's thesis. A total of 45 units of course work, including a 12-credit master's thesis, must be successfully completed. Required courses are Health Research and Policy (HRP) 225 (Design and Conduct of Epidemiologic Studies), 226 (Advanced Epidemiologic Methods), 238 (Seminar/Journal Club in Epidemiology), 261 (Intermediate Biostatistics), and 262 (Regression, Prediction, Survival Analysis); Statistics 190 (Statistics for Social Scientists), and 161 (Introduction to Statistical Methods II); and a master's

thesis of 12 units or more. In addition, M.S. students are required to select two other courses in epidemiology. The master's thesis must be read and approved by two faculty members.

A new curriculum in clinical research methods has been established specifically to enhance the training of clinical investigators. This program is aimed primarily at physicians who have completed residency, are entering clinical fellowships, and who plan to engage in clinical research. It is also suitable for physicians at other points in their careers. Requirements of the program include those of the M.S. degree described above, as well as HRP 251, Design and Conduct of Clinical Trials.

### DOCTOR OF PHILOSOPHY

The Ph.D. program in Epidemiology is designed to prepare individuals for careers in research and teaching in epidemiology. It is recommended that applicants have previous course work in biology and statistics or mathematics. Normally, successful applicants will have a master's degree in a relevant field or at least two years of relevant research experience.

Candidates for the Ph.D. degree must complete 72 units of graduate course work and research. Course requirements include all those listed for master's students (unless taken previously), HRP 224 (Statistical Issues in Epidemiology), Genetics 344A (Genetic Epidemiology), and an additional course in epidemiology. A student must select a specialty area (for example, cardiovascular diseases, cancer, clinical epidemiology, genetics, infectious diseases, musculoskeletal diseases, neurological diseases, reproductive disorders). Additional courses are required in each specialty area. Requirements for the specific specialty areas may be obtained from the office of the Program Coordinator, and depending on the specialty area, include one or more of the following courses: Cancer Biology 241 (Molecular and Cellular Biology of Cancer); Genetics 344A (Genetic Epidemiology); HRP 201 (Infectious Basis of Disease), HRP 251 (Design and Conduct of Clinical Trials); Human Biology 156 (Human Development), Human Biology 166 (Cardiovascular Disease Prevention and Epidemiology); Neuroscience 200 (The Nervous System); Health Research Policy 251 (Design and Conduct of Clinical Trials, and Pathology 230A (General and Special Pathology).

Successful completion of three written qualifying examinations is required for admission to Ph.D. candidacy. The qualifying examinations cover: (1) epidemiologic methods, (2) biostatistics, and (3) a specialty area (for example, epidemiology and pathobiology of cancer, or cardiovascular diseases). Requirements also include the presentation of a Ph.D. dissertation as the result of independent investigation and constituting a contribution to knowledge in epidemiology. The candidate must then successfully pass the University oral examination, which is taken only after the student has substantially completed his or her research. The examination is preceded by a public seminar in which the research is presented by the candidate. The oral examination is conducted by a dissertation reading committee.

### COURSES

The course listings of individual departments participating in the Program in Epidemiology should be consulted for complete descriptions.