MASTER OF SCIENCE

GRADUATE INTERDISCIPLINARY PROGRAM

IN HEALTH SERVICES RESEARCH

STANFORD UNIVERSITY

Information and Guidelines

For further information contact:

Educational Coordinator
Department of Health Research & Policy
Stanford University School of Medicine
Stanford, CA  94305-5405
Phone: (650) 723-5456
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Last revised, Dec. 2005
OVERVIEW OF HEALTH SERVICES RESEARCH AT STANFORD

Health services research is an inherently interdisciplinary field that studies the organization, financing, delivery and outcomes of health care.

The Master’s Degree program in Health Services Research is a research-oriented program with a concentration on economics and statistics, outcomes research, cost-effectiveness, and technology assessment. The program is designed to complement training in the medical and social sciences and prepare students for research careers in health services or health policy analysis. The program provides specialized training in selected areas of health care policy, research methodology, and the application of these skills to a specific research problem. Course work requirements allow students to design a program of study suited to their individual backgrounds and interests.

FACULTY AND ACADEMIC TEACHING STAFF

The faculty in the Master’s Program are associated with many departments and schools in the University. Among the disciplines represented are biostatistics, business, economics, engineering, epidemiology, ethics, humanities and sciences, international health, medicine, psychology, public policy analysis, law and sociology. Faculty research interests include the social, organizational, and financial factors in health care delivery, cost-effectiveness of clinical practices, and outcomes research, health economics, health care organization, quality of care, decision analysis, clinical guidelines and assessment of patient preferences and quality of life.

CORE FACULTY SERVING AS STUDENT MENTORS

Members of the Steering Committee are core Health Services Research faculty who serve as Methodology Mentors and Academic Advisors. Some Steering Committee faculty also serve as Research Mentors and teach core courses.

Laurence Baker, PhD.  Associate Professor of Health Research & Policy
Interests: Health economics focused on the effects of financial incentives, organizational structures, and government policies on the health care delivery system, health care costs, and health outcomes.

http://med.stanford.edu/profiles/Laurence_Baker/

Jay Bhattacharya, MD, PhD.  Assistant Professor of Medicine (Center for Primary Care and Outcomes Research)
Interests: Constraints that vulnerable populations face in making decisions that affect their health status; the effects of government policies and programs designed to benefit vulnerable populations.
M. Kate Bundorf, PhD. Assistant Professor of Health Research & Policy
Interests: Health insurance markets including the determinants and effects of individual and purchaser choices, the effects of regulation in insurance markets, the interaction of public and private systems of health insurance, and incentives for insurers to improve health care quality.

Alan Garber, MD, PhD. Henry J. Kaiser Jr. Professor, Professor of Medicine (Center for Primary Care and Outcomes Research)
Interests: Health economics of aging; health, insurance; optimal screening intervals; cost-effectiveness of, coronary surgery in the elderly; health care financing and delivery, in the United States and Japan; coronary heart disease.

Mary Kane Goldstein, MD, MS. Professor of Medicine (Center for Primary Care and Outcomes Research)
Interests: Health services research in primary care and geriatrics; implementation research for quality improvement using automated decision support provided to clinicians with information individualized for their patients; utility assessment for cost-effectiveness analysis.

Michael Gould, MD, MS. Assistant Professor of Medicine (Pulmonary and Critical Care)
Interests: Technology assessment, cost-effectiveness analysis, meta-analysis, prognostic modeling and assessment of health-related quality of life.

Paul Heidenreich, MD, MS. Associate Professor of Medicine (Cardiovascular Medicine)
Interests: Cost-effectiveness of new cardiovascular technologies, interventions to improve the quality of care of patients with heart disease, outcomes research using existing clinical and administrative datasets, and use of echocardiography to predict prognosis.

Mark A. Hlatky, MD. Professor, Health Research & Policy and of Medicine (Cardiovascular Medicine)
Interests: Cardiovascular health services research; cost-effectiveness analyses; clinical outcomes research.

http://med.stanford.edu/profiles/hrp/faculty/Mark_Hlatky/

**Grant Miller, MD.** Assistant Professor of Medicine (Primary Care and Outcomes Research)

http://chppcor.stanford.edu/people/grantmiller/

**Douglas Owens, MD, MS.** Associate Professor of Medicine (Center for Primary Care and Outcomes Research)
Interests: Decision analysis, cost-effectiveness analysis, and meta-analysis to evaluate clinical and health policy problems.

http://fsi.stanford.edu/people/2196/

**Paul Wise, MD, MPH.** Richard E. Behrman Professor of Child Health and Society
Interests: Health policy and outcomes researcher whose work has focused on children's health.

http://chppcor.stanford.edu/people/3230/

**AFFILIATED FACULTY**

**Raymond R. Balise, PhD.** Lecturer, Health Research & Policy (epidemiology)
Interests: Statistical analysis and programming methods; cancer epidemiology.

http://www.stanford.edu/%7Ebalise/

**Margaret Brandeau, PhD.** Professor of Management Science and Engineering
Interests: Application of mathematical models and management science techniques to health policy problems; policies for HIV screening and intervention.

http://www.stanford.edu/dept/MSandE/people/faculty/brandeau/

**Kristin L. Cobb, PhD.** Clinical Assistant Professor, Department of Health Research & Policy (epidemiology)
Interests: Epidemiology of musculoskeletal diseases; women’s health.

http://med.stanford.edu/profiles/Kristin_Cobb/
**Bradley Efron, PhD.**  Max H. Stein Professor of Humanities & Science; Professor of Statistics and of Health Research and Policy  
Interests: Statistical inference in biostatistical data; bootstrap methodology.


**Alain Enthoven, PhD.**  Marriner S. Eccles Professor of Public and Private Management (emeritus)  
Interests: Financing and delivery of health care in the United States and other industrialized nations; cost-benefit decisions in health care.

[http://chppcor.stanford.edu/people/2072/](http://chppcor.stanford.edu/people/2072/)

**Victor Fuchs, PhD.**  Henry J. Kaiser Jr. Professor (emeritus); Professor of Economics and of Health Research and Policy  
Interests: Universal health coverage, factors determining healthcare spending, determinants of health.

[http://chppcor.stanford.edu/people/2084/](http://chppcor.stanford.edu/people/2084/)

**Jeffrey B. Gould, MD, MPH.**  Robert L. Hess Professor in Pediatrics  
Interests: Epidemiology of perinatal morbidity; health outcomes research.


**Henry T. Greely, J.D.**  Deane and Kate Edelman Johnson Professor, School of Law  
Interests: Legal, ethical, and social frontiers of bioscience.


**Trevor Hastie, PhD.**  Professor of Statistics and of Health Research and Policy  
Interests: Flexible statistical modeling, data mining, bioinformatics, statistical computing.


**Iain Johnstone, PhD.**  Marjorie Mhoon Fair Professor in Quantitative Studies; Professor of Statistics and of Health Research and Policy  
Interests: Statistical decision theory and wavelet-like methods in estimation theory, asymptotics and application areas, simulation methodology, volume tests of significance, hazard rate estimation and maximum entropy methods.
Daniel Kessler, PhD.  Professor of Economics, Law and Policy in the Graduate School of Business
Interests: Empirical research in law and economics, industrial organization, the economics of health care.

http://chppcor.stanford.edu/people/2132/

Philip W. Lavori, PhD.  Professor of Health Research and Policy
Interests: Biostatistics, clinical trials, longitudinal studies, casual inference from observation studies, genetic tissue banking, informed consent. Trial designs for dynamic (adaptive) treatment regimes, psychiatric research, cancer.

http://med.stanford.edu/profiles/Philip_Lavori/

Alex Macario, MD, MS.  Associate Professor of Anesthesia
Interests: Economics of health care, in particular the tradeoffs between costs and outcomes for patients having surgery and anesthesia.

http://med.stanford.edu/profiles/Alex_Macario/

Mark McClellan, MD, PhD.  Associate Professor of Economics and of Medicine (on leave); Administrator of the Centers for Medicare and Medicaid Services
Interests: Innovative statistical methods for using observational data to estimate the effects of medical interventions; financial and regulatory influences on physician and hospital behavior.

http://chppcor.stanford.edu/people/2162/

Rudolph Moos, MD.  Professor of Psychiatry and Behavioral Sciences
Interests: Health care programs and the context, process, outcome, and cost of care.

http://med.stanford.edu/profiles/Rudolf_Moos/

Ingram Olkin, PhD.  Professor of Statistics and of Education (emeritus)
Interests: Analysis of social and behavioral models; multivariate statistical analysis; correlational and regression models in educational processes; meta-analysis.

http://chppcor.stanford.edu/people/ingramolkin/
Richard Olshen, PhD. Professor of Health Research and Policy  
Interests: Statistics and their applications to medicine and biology; tree-structured algorithms for classification, regression, survival analysis, and clustering.

http://www-stat.stanford.edu/~olshen/

Ross Shachter, PhD. Associate Professor of Management Science and Engineering  
Interests: Representation and analysis of uncertainty and medical decision analysis.

http://www.stanford.edu/dept/MSandE/people/faculty/shachter/index.html

W. Richard Scott, PhD. Professor of Sociology (emeritus)  
Interests: Effects of organizational structures on quality and cost of surgical care in hospitals; organizations of mental health services; medical care studies in the Bay Area from 1945 to 1995.

http://www.stanford.edu/dept/soc/people/faculty/scott/scott.html

Robert Tibshirani, PhD. Professor of Health Research and Policy  
Interests: Applied statistics, biostatistics and data mining.

http://www-stat.stanford.edu/~tibs/

AFFILIATED FACULTY AND ACADEMIC STAFF, PRIMARY INSTITUTIONAL AFFILIATIONS OTHER THAN STANFORD UNIVERSITY

Paul Barnett, PhD. Consulting Associate Professor of Health Research and Policy; Director of Health Economic Resource Center, U.S. Department of Veterans Affairs  
Interests: Cost-effectiveness of health care inventions; determination of the cost of health care; economic modeling in support of health care policy decisions; cost-effectiveness of treatments for substance abuse and psychiatric disorders.

http://chppcor.stanford.edu/people/paulgbarnett/

Ciaran Phibbs, PhD. Consulting Associate Professor of Health Research and Policy; Associate Director for the Health Economics Resource Center at the Veterans Affairs Palo Alto Health Care System  
Interests: Perinatal care; hospital competition; health care technologies; hospital markets; demand for VA services; how scale and capacity utilization affect hospital costs and how these interact with market forces.

http://chppcor.stanford.edu/people/ciaransphibbs/
**Haya Rubin, MD, PhD.** Director, Palo Alto Medical Foundation Research Institute

http://www.pamf.org/research/

**Joe V. Selby, MD, MPH.** Consulting Professor, Health Research & Policy; Director, Division of Research, Kaiser Permanente Northern California.  
Interests: Clinical epidemiology, quality of care for diabetes and cardiovascular disease.

http://www.dor.kaiser.org/staff/investigators.selby.shtml

**Anita Stewart, PhD.** Professor in Residence at the Institute for Health & Aging and the Department of Social and Behavioral Sciences  
Interests: AIDS stigma, promoting effective communication and decision-making for diverse populations, and aging research in diverse populations.

http://nurseweb.ucsf.edu/iha/faculty/stewart.htm

**Todd Wagner PhD.** Consulting Assistant Professor of Health Research and Policy; Health economist with the VA Palo Alto Health Care System  
Interests: Consumer health information; cost-effectiveness analysis; willingness to pay; financing for institutional review boards; quality of life measurement.

http://chppcor.stanford.edu/people/toddhagner/

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**REGISTRATION PROCEDURES; UNIVERSITY AND GRADUATE SCHOOL POLICIES**

Information regarding registration procedures and University and Graduate School policies may be obtained from the following sources:

**Stanford Bulletin**

The Bulletin may be accessed via the Internet at http://www.stanford.edu/dept/registrar/bulletin/bulletin.html. The Stanford Bulletin may also be purchased from the Stanford Bookstore (White Plaza, Stanford, California 94305-3079).
Stanford University School of Medicine Catalog

The Catalog may be accessed via the Internet at http://www-med.stanford.edu/school.catalog/. Other information on the School of Medicine is available at the following address: Office of Student Affairs, School of Medicine, Stanford University, Stanford, CA 94305.

Application Information

Application information is available at the following address: Graduate Admissions Office, Old Union, Room 132, Stanford University, Stanford, CA 94305-3005; (650) 723-4291 or via the internet at http://www.stanford.edu/dept/Registrar/admissions. General information for Stanford University is available at (650) 723-2300 or at http://www.stanford.edu.

GRADUATE INTERDISCIPLINARY PROGRAM IN HEALTH SERVICES RESEARCH

Admission Criteria

A successful applicant for admission to the traditional track of the M.S. program is expected to have a high grade point average, high Graduate Record Examination scores obtained within the past five years, strong letters of recommendation, and an appropriate personal statement of purpose.

Applicants who are currently medical students or MD post-doctoral fellows at the Stanford School of Medicine are also considered. The Graduate Record Examination requirement is waived for the applicants with a M.D. or D.O. degree and for those currently enrolled in the M.D. program at Stanford University; scores from the Medical College Admission Test are requested for current medical students.

Applicants from other countries whose first language is not English and who have received fewer than two years of English-based education will be required to submit TOEFL scores as evidence of English proficiency. Scores of at least 600 for the paper-based TOEFL exam or 250-300 for the computer based TOEFL exam are required.

Number of Units Required and Length of Study

All candidates for the M.S. degree must satisfactorily complete 45 units of graduate course work, including a 12-unit master’s thesis.

The M.S. program is typically completed in two years. The maximum length of study for the M.S. degree is three years, which potentially may be extended by one year through petition.
Mentoring, Advising, and Evaluation of Performance

Each student will be assigned a faculty advisor drawn from the core faculty. The faculty advisor generally serves as the student’s mentor for the masters project. Depending on the topic of the project, additional faculty members may serve as co-mentors. Affiliated faculty often serve as co-mentors on specific research methods, and other medical school faculty may serve as “content experts” for projects concerned with specific diseases or medical treatments.

Course Requirements for the M.S. Degree

Requirements for the M.S. degree include general requirements described in the Stanford Bulletin. A total of 45 units are required for the master’s degree, including 27 course units exclusive of HRP 283 (Research in Progress Seminar), HRP 299 (Directed Reading), and HRP 399 (Research). Three units of HRP 283 are required. Transfer credit is not accepted for the M.S. degree.

To maintain minimum progress toward the degree, students who have not been granted Terminal Graduate Registration status are required to enroll in at least 8 units each quarter, except summer quarter. Students must maintain an overall 3.0 (B) grade average in graded courses.

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<tr>
<th>CORE REQUIREMENTS FOR HEALTH SERVICES RESEARCH</th>
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<tbody>
<tr>
<td>At least eight units from the following:</td>
</tr>
<tr>
<td>HRP 256 Economics of Health and Medical Care</td>
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<tr>
<td>Institutional, theoretical, and empirical analysis of the problems of health and medical care. (Bhattacharya) 5 units, Autumn.</td>
</tr>
<tr>
<td>HRP 391 Political Economy of Health Care in the United States</td>
</tr>
<tr>
<td>Economic tools and institutional and legal background to understand how markets for health care products and services work. Moral hazard and adverse selection. Institutional organization of the health care sector. Hospital and physician services markets, integrated delivery systems, managed care, and pharmaceutical and medical device industries. Public policy issues in health care, medical ethics, regulation of managed care, patients’ bill of rights, regulation of pharmaceuticals, Medicare reform, universal health insurance, and coverage of the uninsured. International perspectives; how other countries’ health care systems evolved, and what the U.S. can learn from their experiences. (Kessler, Bundorf) 4 units, Spring.</td>
</tr>
<tr>
<td>HRP 392 Analysis of Costs, Risks, and Benefits of Health Care</td>
</tr>
<tr>
<td>Principal evaluative techniques for health care, including utility assessment, cost-effectiveness analysis, cost-benefit analysis, and decision analysis. Emphasis is on practical application with major effort devoted to a group project presented at the end of the quarter. Guest lectures by experts from the School of Medicine, pharmaceutical industry, health care plans, and government. (Garber, Owens) 4 units, Autumn.</td>
</tr>
</tbody>
</table>
At least six units of approved statistics courses at the 200 level or above. Highly recommended sequence includes: (Students without prior training in statistics are strongly encouraged to enroll in Statistics 141 prior to enrolling in HRP 261, 262.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>HRP 262</td>
<td>Intermediate Biostatistics: Regression, Prediction, Survival Analysis (same as STATS 262)</td>
<td>Methods for analyzing longitudinal data. Topics include: Kaplan-Meier methods, Cox regression, hazard ratios, time-dependent variables, longitudinal data structures, profile plots, missing data, modeling change, MANOVA, repeated-measures ANOVA, GEE, and mixed models. Emphasis is on practical applications. Prerequisites: basic ANOVA and linear regression. (Cobb) 3 units, Spring.</td>
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At least three units:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>HRP 283</td>
<td>Health Research Services Core Seminar</td>
<td>Presentation of research in progress and tutorials. Three units are required. (Core Faculty) 1 unit, Autumn, Winter, Spring.</td>
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</table>

Master’s thesis and Directed Reading

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>HRP 299</td>
<td>Directed Reading</td>
<td>Aspects of preventive medicine, public health, social aspects of disease and health, economics of medical care, occupational or environmental medicine, epidemiology, international health, or related fields. Prerequisite: consent of instructor. (Staff) 1-18 units, Autumn, Winter, Spring, Summer</td>
</tr>
<tr>
<td>HRP 399</td>
<td>Research (Thesis)</td>
<td>Qualified students undertake investigations sponsored by individual faculty members. A total of at least 15 units of thesis research must be taken over at least two quarters. (Staff)</td>
</tr>
</tbody>
</table>
Electives may be used to fulfill the 45-unit requirement. Approved electives are listed below. Please note that some courses are not offered every year. Other courses may be taken as electives, but these require permission of the student’s Academic Advisor.

## APPROVED ELECTIVES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRP 206</td>
<td>Topics in Quantitative Methods: Meta-Analysis (same as STATS 211)</td>
<td>Meta-analysis is a quantitative method for combining results of independent studies, and enables researchers to synthesize the results of related studies. Examples from the medical, behavioral, and social sciences. Topics: literature search, publication and selection bias, statistical methods (contingency tables, cumulative methods, sensitivity analyses, non-parametric methods). Project. (Olkin) 3 units, Winter.</td>
</tr>
<tr>
<td>HRP 210</td>
<td>Health Law and Policy (same as LAW 313)</td>
<td>Introduction to the American health care system and its legal and policy problems. Topics: special characteristics of medical care as compared with other goods and services, difficulties of assuring quality care, the complex patchwork of the financing system, and ethical problems the system raises. (Greely) 3 term units, Autumn semester. (Note: The Law School uses a different calendar then the rest of the University.)</td>
</tr>
<tr>
<td>HRP 211</td>
<td>Advanced Issues in Health Law and Policy: Genetics and Law (same as LAW 368)</td>
<td>Legal, social, and ethical issues arising from advances in the biosciences. Focus is on human genetics; also advances in assisted reproduction and neurosciences. Topics include forensic use of DNA, genetic testing, genetic discrimination, eugenics, cloning, pre-implantation genetic diagnosis, neuroscientific methods of lie detection, and genetic or neuroscience enhancement. (Greely) 3 term units, Autumn semester. (Note: The Law School uses a different calendar then the rest of the University.)</td>
</tr>
<tr>
<td>HRP 214</td>
<td>Scientific Writing</td>
<td>Step-by-step through the process of writing and publishing a scientific manuscript. How to write effectively, concisely, and clearly. Preparation of an actual scientific manuscript. Students are encouraged to bring a manuscript on which they are currently working to develop and polish throughout the course. (Cobb) 2-3 units, Winter.</td>
</tr>
<tr>
<td>HRP 223</td>
<td>Data Management and Statistical Programming</td>
<td>The skills required for management and analysis of biomedical data. Topics include importing and exporting data from multiple database systems, visualizing and cleaning data, data management for multicenter projects, and data security. Introduction to applied statistical programming relevant to epidemiologic and clinical research. No previous programming experience required. (Balise) 2-3 units, Autumn.</td>
</tr>
<tr>
<td>HRP 225</td>
<td>Design and Conduct of Clinical and Epidemiologic Studies</td>
<td>This course provides a broad foundation in methods related to clinical and epidemiologic research, including study designs, common study biases, measurement principles, sample size estimation, questionnaire design, development and assessment of diagnostic tests, clinical trials, introduction to multivariate analysis, and interpretation of study results. (Popat) 3-4 units, Autumn.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>HRP 226</td>
<td>Advanced Epidemiologic and Clinical Methods</td>
<td>Emphasis is on principles of measurement, measures of effect, confounding, effect modification, and strategies for minimizing bias in epidemiologic studies. Data management principles are included. (Nelson) 3-4 units, Winter.</td>
</tr>
<tr>
<td>HRP 251</td>
<td>Design and Conduct of Clinical Trials</td>
<td>This course covers the rationale for Phase 1-3 clinical trials, the recruitment of subjects, techniques for randomization, data collection and endpoints, interim monitoring and reporting of results. Emphasis is placed on both the theoretical underpinnings of clinical research and practical aspects of conducting clinical trials. (Hlatky) 3 units, Spring.</td>
</tr>
<tr>
<td>HRP 252</td>
<td>Outcomes Analysis</td>
<td>Introduction to methods of conducting empirical studies which use large existing medical, survey, and other databases to ask both clinical and policy questions. Econometric and statistical models used to conduct medical outcomes research. How research is conducted on medical and health economics questions when a randomized trial is impossible. Problem sets emphasize hands-on data analysis and application of methods, including re-analyses of well-known studies. (Bhattacharya) 3 units, Spring.</td>
</tr>
<tr>
<td>HRP 351</td>
<td>Innovation and Management in Health Care</td>
<td>The workings of the major institutions such as hospitals, health insurance companies, HMOs, Medicare and Medicaid, federal regulators, and the medical establishment. National health expenditures and alternative models for healthcare financing and delivery. Trends in treatment innovations provided by biopharmaceuticals, medical devices, and surgical procedures; delivery innovations facilitated by information systems and new processes. Policy and business challenges raised by these innovations and the health care ecosystems they promote. (Zenios) 4 units, Winter.</td>
</tr>
<tr>
<td>MS&amp;E 252</td>
<td>Management Science and Engineering: Decision Analysis 1</td>
<td>Coherent approach to decision making, using the metaphor of developing a structured conversation having desirable properties, and producing actional thought that leads to clarity of action. Instruction is Socratic, with computational issues covered in problem sessions. Emphasis is on creation of distinctions, representation of uncertainty be probability, development of alternatives, specification of preference, and role of these elements in creating a normative approach to decisions. Evaluates information gathering opportunities in terms of value measure. Relevance and decision diagrams represent and clarify inference and decision. Principles are applied to decisions in business, technology, law, and medicine. (Howard) 3-4 units, Autumn.</td>
</tr>
</tbody>
</table>
### A Sample Program for the M.S. Degree

<table>
<thead>
<tr>
<th>Course number</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Quarter: Autumn</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRP 256</td>
<td>Economics of Health and Medical Care</td>
<td>5</td>
</tr>
<tr>
<td>HRP 283</td>
<td>Research In Progress Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HRP 392</td>
<td>Cost-Benefit Analysis in Health Care</td>
<td>4</td>
</tr>
<tr>
<td>—</td>
<td>Elective/selective course(s) or HRP 299, directed reading</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Second Quarter: Winter</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRP 261</td>
<td>Intermediate Biostatistics: Analysis of Discrete Data</td>
<td>3</td>
</tr>
<tr>
<td>HRP 283</td>
<td>Research in Progress Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HRP 391</td>
<td>Political Economy of Health Care in the U.S.</td>
<td>4</td>
</tr>
<tr>
<td>—</td>
<td>Elective course(s) or HRP 299, directed reading</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Third Quarter: Spring</strong></td>
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<td></td>
</tr>
<tr>
<td>HRP 262</td>
<td>Intermediate Biostatistics: Regression, Prediction, Survival Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HRP 283</td>
<td>Research in Progress Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HRP 399**</td>
<td>Master's Thesis</td>
<td>Variable</td>
</tr>
<tr>
<td>—</td>
<td>Elective course(s) or HRP 299, directed reading</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Subsequent Quarters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRP 399**</td>
<td>Research (master’s thesis)</td>
<td>Variable</td>
</tr>
<tr>
<td>—</td>
<td>Elective course(s) or HRP 299, directed reading</td>
<td>Variable</td>
</tr>
</tbody>
</table>

* Students without prior training in statistics are strongly encouraged to enroll in STAT 141 (autumn, 4-5 units) prior to enrolling in HRP 261 and 262.

**A total of 15 units of HRP 399 Research (master’s thesis) and/or HRP 299 (Directed Reading) must be taken over at least two quarters.

### Master's Thesis

**Nature of the Master's Thesis:** The completion of a master's thesis is an essential component of the M.S. program in Health Services Research. The thesis allows students to apply methodologic principles to specific issues in health or medical care, and to demonstrate the following:
Graduate Interdisciplinary Program in Epidemiology

- Familiarity with health care organization, financing, and policy issues.
- Ability to communicate scientific reasoning and argue analytically.
- Awareness of technical, methodological, and other issues relevant to health services research.
- Comprehension of statistical techniques, their proper use, and limitations.
- Knowledge in a substantive area of health services.

The thesis is ordinarily 30–50 pages long, double-spaced, including tables, figures, and references. Each thesis must include a summary Abstract of approximately 400 to 1000 words. The thesis may take one of several forms, such as:

- Original analyses of data, whether collected primarily for the thesis or as secondary data analysis.
- A comprehensive literature review with a meta-analysis of data or a critical reanalysis of data.
- Evaluation of a methodological problem using real or hypothetical data.
- A decision model or cost-effectiveness analysis.

The quality of the master’s thesis should be such that it can be converted into a manuscript for publication or a credible research grant application, and students are strongly encouraged to do so. Students are expected to present their research findings during a session of HRP 283, the Health Services Research Seminar.

**Thesis Committee:** Each student’s Masters Thesis Committee is composed of at least two faculty members, a core faculty member and a co-reader. The core faculty member is generally the student’s advisor, and the co-reader is typically either the student’s methodology mentor, or clinical domain expert, or the director of the HSR program. The student’s advisor generally serves as the primary supervisor of the thesis research. Students may propose additional members of the Thesis Committee, who are ordinarily members of the Stanford professoriate.

Completion of the master’s thesis involves registration for at least 12 units of master’s thesis research over a period of two or more quarters. A proposal for the thesis must be submitted to thesis readers when the project is early in its conceptual stages, prior to completing a substantial amount of thesis work. The purpose is for the student to obtain guidance from the thesis committee about specific aims, study design features, and analytic methods before commencing on the project.

**Funding of Graduate Study**

Loan support is available from Stanford University, as detailed in the Stanford University Guide to Graduate Admission. Financial assistance for graduate study may be available in the form of research or teaching assistantships.
Several student positions are supported by a training grant in health services research. A separate application is required through the Center for Primary Care and Outcomes Research (PCOR). See http://chppcor.stanford.edu/docs/about/ for information.
# Program Summary

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<thead>
<tr>
<th>Program of Study</th>
<th>The Master’s Degree program in Health Services Research is a research-oriented program with a concentration on economics and statistics, outcomes research, cost-effectiveness, and technology assessment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Facilities</td>
<td>Students may work on a wide variety of research projects with faculty at Stanford and at other nearby institutions. Stanford library and computer facilities are outstanding.</td>
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<tr>
<td>Financial Aid</td>
<td>Prospective students are encouraged to seek funding through their clinical training program and to apply for career development awards and similar funding from the National Institutes of Health and professional organizations.</td>
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<tr>
<td>Cost of Study</td>
<td>Full tuition in 2005-06 is $10,400 per quarter. The 8-10 unit rate is $6,790 per quarter.</td>
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<tr>
<td>Cost of Living</td>
<td>A variety of on-campus and off-campus housing options are available. In general, on-campus housing is more affordable than off-campus housing.</td>
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<tr>
<td>Student Group</td>
<td>Stanford University has a total student enrollment of approximately 13,000, of whom about half are graduate students. Students in the epidemiology program have numerous opportunities to get to know students in other departments and programs in the biomedical sciences.</td>
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<tr>
<td>Location</td>
<td>Stanford University is located in the San Francisco Bay area, within a one hour drive of San Francisco and the Pacific Ocean, within two hours of the Monterey Peninsula, including Carmel and Pacific Grove, and within four hours of the Sierra Nevada, which features excellent skiing and hiking. Just a few minutes from the Stanford campus are the San Francisco Bay and the foothills of the Santa Cruz mountains, which provide opportunities for windsurfing, biking, and hiking year-round.</td>
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<tr>
<td>The University</td>
<td>Stanford is a private university founded in 1885 by Leland and Jane Stanford in memory of their only son. The 8,000 acre campus stretches from the city of Palo Alto westward into the foothills and includes much open space. Stanford has an ongoing commitment to the excellence of its biomedical science programs.</td>
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<tr>
<td>Applying</td>
<td>Applications are evaluated based on the applicant's commitment to a career in patient-oriented clinical research as described in his/her statement of purpose, relevant work and research experience, and letters of recommendation. The requirement of Graduate Record Examination (GRE) scores is waived for applicants with an MD or similar degree. Applications from members of minority groups are especially encouraged. Applicants from non-English speaking countries should provide evidence of competence in English on the Test of English as a Foreign Language (TOEFL).</td>
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<tr>
<td>Correspondence and Information</td>
<td>For further program information: Graduate Program in Health Services Research Department of Health Research &amp; Policy Stanford University School of Medicine Stanford, California 94305-5405 Telephone: (650) 723-5456 FAX: (650) 725-6951 Email: <a href="mailto:hsr-program@med.stanford.edu">hsr-program@med.stanford.edu</a> <a href="http://med.stanford.edu/hsr/degree.html">http://med.stanford.edu/hsr/degree.html</a></td>
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</tbody>
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