PM 400 Data Science Practicum: (Dye, Timothy, Ph.D.)
Practicum provides a practical experience for graduate students to participate in a lab, research
group, or center at the University of Rochester or one of its partners on a biomedical research
topic involving data science. The experience will integrate practical, field-based methods and
will include participants in a team science environment. Students can expect to apply their
classroom learning during the two-semester (Fall and Spring semesters) practicum experience.
Students work in teams on pre-approve projects and meet weekly with their mentor to review
progress and plans. Students will present the results of their work at the end of the Spring
semester. (Fall)

PM 401 Quantitative Methods in Public Health Research: (Abar, Beau, Ph.D.)
The purpose of this course is to familiarize students with many of the standard statistical
techniques utilized in the health sciences. By the end of the course, students should be able to
understand, interpret, and communicate about statistical topics including but not limited to:
descriptive statistics; displaying data in tables and figures; types of data and distributions;
sampling distributions and hypothesis testing; comparing means; correlation and regression; and
contingency tables and sensitivity/specificity. (Fall/Summer)

PM 402 Human Biology & Health Research: (Dye, Timothy, Ph.D.)
This course aims to introduce graduate students in health research disciplines to human biology,
with a particular focus on systems, disease, treatment, and etiology. The course is oriented for
students with little or no undergraduate training in human biology or a clinical field, and focuses
upon broad concepts surrounding health and disease. Examples from published health research
are used in the course to underscore the importance of human biology in addressing research
questions in health services research, biomedical informatics, epidemiology, and public
health. (Summer)

PM 403 Research Team Science Seminar: (Dye, Timothy, Ph.D.)
This course introduces graduate students to the concepts, practice, and challenges of Team
Science and collaborative research environments. Students will be exposed both to team science
(TS) initiatives and the science of team science (SciTS) as presented through practical examples
from local research teams and researchers, focusing upon the practical implications of a team
science approach to biomedical research requiring large-scale data analysis. (Summer)

PM 410 Introduction to Data Management/Analysis/SAS: (Thevenet-Morrison, Kelly, MS)
This course provides an introduction to the SAS analytic software for Windows and a basic
understanding of data management using MS Access, MS Excel and SAS. Through a mixture of
lectures and applied lab sessions, students gain experience using MS Access, MS Excel for the
management and analysis of public health data. Building on linkages to the department’s
biostatistics and epidemiology curriculum, this course emphasizes the integration of data
management and analysis into the research environment and the development of statistical
computing skills. It is required that you bring a laptop to class and have the Microsoft Office
Suite and SAS loaded on your machine prior to class beginning. (Fall/Summer)
PM 412 Survey Research: (McIntosh, Scott, Ph.D., Ossip, Deborah Ossip, Ph.D.)
This course presents the necessary elements of survey instrument development and survey research methods, with a focus on practical applications in health care research, epidemiology and social & behavioral science. The integrated perspective includes a combined qualitative approach to survey development and interpretation and practical methods for conducting valid and reliable survey research. Students participate in all stages of the survey research process through application of homework assignments, survey development and research project design. Grades will be determined through quizzes, participation, and a group survey project. (Fall)

PM 413 Field Epidemiology: (van Wijngaarden, Edwin, Ph.D.)
This course will provide an overview of the practical applications of theoretical epidemiological concepts in the study of the distribution of diseases and their causes in populations. Emphasis will be on the hands-on discussion of basic methods in epidemiologic research, including literature review; study design selection; measurement of disease; selection of relevant variables; development and administration of questionnaires; quantitative data analysis; and reporting study findings. These concepts are discussed in the context of case studies and special topics such as outbreak investigations, cancer cluster investigations, and meta-analysis. (Fall)

PM 414 History of Epidemiology: (TBA)
The overall goal of this course is to provide students with both a review of the historical framework that shaped the field of epidemiology and discussion of important epidemiologic approaches developed within historic periods. The course will first discuss the origins of the field and the interplay between the development of epidemiology inquiry and our scientific understanding of disease and population health. Attention will then turn toward the increasing social awareness and role of public health and overviews of the development of modern epidemiologic methods of study design and analysis, including intellectual exchanges and interactions with other scientific disciplines (e.g., biomedical, social). The course will then close by examining recent and future challenges facing the field. (Alternate Fall semesters)

PM 415 Principles of Epidemiology: (Jusko, Todd, Ph.D., Fernandez, Diana, Ph.D.)
PM 415 is intended to provide an overview of concepts dealing with the study of the distribution and determinants of health conditions in populations. We will define epidemiologic terms, introduce methods to describe health conditions in populations, provide an overview of ways to determine the causes of disease, and apply epidemiologic principles to the evaluation of preventive and therapeutic interventions. This will be carried out by online modules, lecture presentations, and small group discussions. (Fall)

PM 416 Epidemiologic Methods: (David Rich, Sc.D., Kelly Thevenet-Morrison, MS)
This course provides an in-depth coverage of the theoretical and quantitative methodological issues associated with population based epidemiology research, including concepts of study design, selection and information bias, measurement, confounding and effect modification. The course will also cover and multivariable analytic techniques including linear and logistic regression, as well as Kaplan Meier survival analysis, and Cox proportional hazards modeling. Students will also have lectures on the use of SAS software to conduct these statistical analyses.
At the end of the course students will be able to conduct a complete epidemiology study from study design to data analysis to inference. (Spring)

**PM 417 Molecular Epidemiology: (Adams, M. Jacob, MD, MPH)**
Using the same paradigm as traditional epidemiology, this course will explore the opportunities for the use of increasingly powerful biologic markers of exposure, disease and susceptibility to provide high-resolution answers in relation to the causes of disease. The course will focus on the practice of molecular epidemiology as an interdisciplinary science, and the use of biologic markers to advance our knowledge about health and disease among groups of people in a manner that is appropriate for inference to larger populations. (Spring)

**PM 418 Cardiovascular Disease Epidemiology & Prevention: (Block, Robert, M.D., MPH.)**
At the completion of the course, students will be able to demonstrate their knowledge of cardiovascular disease epidemiology and prevention by listing and/or discussing the proven risk factors for cardiovascular disease (CVD) and the seminal studies leading to their discovery. Other important topics students should be able to describe are the emerging risk factors for CVD, strategies and interventions for preventing CVD, and the difference between risk markers and risk factors. Students should also be able to demonstrate an ability to identify and verify that a risk marker is truly independent, recognize the known and suspected risk factors for stroke and the current controversies in CVD epidemiology and prevention and how they have arisen. Prerequisites: PH 103 Concepts of Epidemiology or PM 415 Principles of Epidemiology  (Fall)

**PM 419: Recruitment and Retention of Human Subj. in Clinical Research: (Dozier, Ann, RN, Ph.D.)**
Recruitment and retention of research subjects typically focuses on determining eligibility, minimizing risk to research subjects and designing protocols that are not overly burdensome for the subject or participant. While these concerns are important, successful and sustainable recruitment and retention extends well beyond protocol design. This course focuses on strategies to recruit and retain subjects from groups known to be ‘hard to recruit’ such as individuals from disenfranchised communities (racial/ethnic minorities, homeless) and other sub-groups such as the elderly. This course combines on-line work with in class discussion and presentations from individuals responsible for clinical research recruitment and retention. Participants will critique and design recruitment strategies from published reports and local research, develop feasibility assessments and draft a recruitment plan. (Alternate Fall semesters)

**PM 420 American Health Policy & Politics: (Brown, Theodore, Ph.D.)**
This course examines the formation and evolution of American health policy from a political and historical perspective. Concentrating on developments from the early twentieth century to the present, the focus of readings and discussions will be political forces and institutions and historical and cultural contexts. Among the topics covered are periodic campaigns for national health insurance, efforts to rationalize and regionalize health care institutions, the creation of Medicare and Medicaid and the further evolution of these programs, the rise to dominance of economists and economic analysis in the shaping of health policy, incremental and state-based vs. universal and federal initiatives, the formation and failure of the Clinton administration’s health reform agenda, and national health reform efforts during the Obama administration. The
course is in seminar format and will expect active, well-prepared student participation. The other major requirements are two 5-page take-home essay-exams and a 10-page research paper. Course grades will be determined as follows: take-home essays – 20% each; term paper – 45%; contribution to seminar discussion – 15%. (Fall)

PM 421 US Health Care System: Financing, Delivery, Performance (Intrator, Orna, Ph.D.)
In this course, we examine the organization, financing, delivery, and performance of the US health care system. The inherent tradeoffs between access to care, cost, quality, and outcomes are considered from the perspective of the main actors in the system, i.e., patients, providers (physicians, hospitals, etc.), health plans, insurers, and payers. Topics include: need for and access to care; health care insurance and financing; Medicare and Medicaid; managed care; service delivery; long-term care; public health; quality of care, and others. The aim of the course is to help students deepen their understanding of the health care system, strengthen their ability to synthesize the literature and assess key current policy issues, and to further develop their critical thinking skills. (Fall)

PM 422 Quality of Care & Risk Adjustment: (Cai, Shubing, Ph.D., Li, Yue, Ph.D.)
The purpose of this course is to explore the various methods and opportunities available to track and assess outcomes of clinical practices and medical technologies. The material covered will include the framework, analytic approaches, databases and settings available for studies addressing patient outcomes, practice patterns, clinical interventions and strategies that constitute the content of health care. The course focuses on the use of patient populations and databases as laboratories for the generation of new knowledge and information. (Spring)

PM 424 Chronic Diseases Epidemiology: (Block, Robert, M.D., MPH, Jones, Courtney, Ph.D., MPH)
This course offers an overview of the epidemiology of selected chronic diseases (cardiovascular diseases, cancer, chronic respiratory diseases, and chronic neurological conditions) and the methods to study them. By the end of the course, students should have sufficient understanding of the pathology, diagnostic classification, screening, risk factors and treatment of these diseases as well as approaches for conducting research which involves them. Prerequisites: PH 103 Concepts of Epidemiology OR PM415 Principles of Epidemiology (Alternate Spring semesters)

PM 425 Health Promotion and Preventive Medicine: (Kopin, Laurie AEd. D, RN, ANP, FPCN)
This course will provide the learner with a solid foundation and appreciation for primordial, primary, secondary, and tertiary disease prevention strategies on both an individual (patient and provider) and population-wide basis (society as a whole). The overarching theme of the course is to impress upon the learner the importance of and the need for preventive health behavioral interventions and the positive impact healthy behavior change can have on our society as a whole on an environmental, economical, and social level. (Spring)

PM 426 Social and Behavioral Medicine: (Ossip, Deborah, Ph.D.)
The overall goal is to examine the public health impact of behavioral, psychosocial, cultural, and environmental factors on the development, prevention, and treatment of health problems. This is
a survey course designed to introduce students to a wide range of social and behavioral determinants of health, health behavior change, and health disparities over the life course. (Spring)

**PM 428 Health Services Research Seminar:** (Veazie, Peter, PhD.)

A non-credit course required of all doctoral and postdoctoral students. A variety of topics will be presented for discussion by faculty and students. (Fall/Spring)

**PM 430 Psychology in Health Services Research:** (Veazie, Peter, Ph.D.)

As health services research moves from descriptive to explanatory work for informing policies and interventions, the use of theory becomes essential. Psychology provides theories for explaining individual and social behavior that can underlie many phenomena of interest. For example, psychological theories have been used to understand patient and physician communication and decision making, medical errors, healthcare disparities, and patient engagement of preventive care or persistence with treatment regimens. This course has two objectives: (1) to introduce students to basic and health-related psychological and social-psychological theories germane to health services research, and (2) to introduce the process of creating theory-based explanations. (Fall)

**PM 442 Nutritional Epidemiology:** (Fernandez, Diana, MD, MPH, Ph.D.)

The course is designed to give the students the tools to critically review the nutritional epidemiologic literature and to conduct epidemiologic studies of diet, nutrition, and disease. Concepts on nutritional epidemiology will be applied to nutrition and nutritional-related disorders prevalent in the United States and globally (e.g., descriptive epidemiology of breastfeeding, obesity). (Spring)

**PM 443 Foundations of Maternal & Child Health:** (Alio, Amina)

This course is designed to provide students with an overview of major health issues through the life course of women and children and public health responses to these issues in the U.S. and in low-income countries. The course introduces students to the field of maternal and child health from its historical development, current health priority issues, barriers to care, and public health interventions. (Fall)

**PM 445 Introduction to Health Services Research and Policy:** (Dolan, James, MD)

This course will provide a hands-on introduction to field of health services and policy research. We will review the nature and scope of health services and policy research, learn about organizational and systems theories, compare different conceptual frameworks for guiding health services and policy research, and discuss research studies addressing current topics of interest including: health system planning and policy, effectiveness and quality of care, equity of care/disparities research. Extensive use will be made of a hypothetical new country with a health system similar to that of the United States that will serve as our research “lab.” Upon completion of this course, students will: 1) be familiar with the multi-disciplinary and multi-faceted nature of health services and policy research; 2) have a basic understanding of systems research and organizational theories; and 3) have an understanding of the HRS research methods and their respective advantages and disadvantages. Prerequisites: None. (Fall)
PM 448 Health Policy Analysis: (TBA)
This course provides an introduction to policy analysis in the context of public health and health care. The course focuses on developing the logic and argumentative skills necessary to produce compelling analyses of existing and proposed policies. The main tools used in policy analysis will be identified. Special attention will be given to the implementation of the PPACA reform legislation. (Spring)

PM 450 MPH Practicum (Alio/Adams)
The intent of this practicum is to engage students in activities aligned with their career goals, as well as activities that demonstrate application of public health science concepts and critical thinking relevant to the student’s area of interest within community organizational settings. Students will partner with a community agency to conduct evidence-based activities that meet a programmatic goal of the partnering agency addressing population-health issues. These activities will further develop the student’s skill set in program design, implementation and/or evaluation. Upon completion of the program, students will be able to provide evidence of application of these skills to potential employers. Students will work independently with a faculty supervisor to create and outline an appropriate plan for an onsite practicum experience.

PM 451: Epidemiology of Infectious Diseases: (TBA)
This course examines the epidemiology of infectious diseases within a biological and methodological framework. Students will be introduced to the objectives of conducting research in infectious diseases and the methodologies used to accomplish these objectives. There will be a particular focus on topics not applicable to the study of chronic diseases, such as vaccination, immunity, and transmission dynamics. Students will also gain an appreciation for the public health importance of specific pathogens in the United States and worldwide. (Spring)

PM 452 Community Health Improvement Practicum: (McIntosh, Scott, Ph.D.)
This course serves as a practicum experience for the MPH program. This practicum educates students in the appropriate knowledge, attitudes, and skills necessary for developing population-based interventions, and understanding the connection between community and health. The main goal is to facilitate key partnerships for sustainable interventions (group projects) in the community to improve health at the population level. Student group projects will be responsible for conducting a community health improvement intervention in the Rochester community during the semester, in close partnership with community agencies (e.g., NGOs, American Cancer Society, Monroe County Health Department, Charles Settlement House, Faith-based Organizations, Rochester City School District, Healthy Start, Sojourner House, and many more). (Spring)

PM 456 Health Economics I: Introduction to Health Economics: (Veazie, Peter, Ph.D.)
This is an introductory course that will cover the basic principles of economics and their variations used to understand the production of health, the supply and demand for medical care and health insurance, and market competition in medical care, including the markets for health insurance, medical services, hospital services, pharmaceuticals, medical education, physicians, and nurses. The course will use graphs and calculus-based mathematical models to communicate
A community’s health is not just determined by individual health behaviors, but also by cultural beliefs and forms of social organization. Traditional quantitative methodologies, which have been so powerful in understanding biological phenomena, have limited explanatory power in analyzing socio-cultural phenomena. Qualitative methods, long used in the social sciences, allow for the collection, analysis, and interpretation of social and cultural data that quantitative methods cannot adequately reach. In addition, qualitative methods can function as an essential adjunct to quantitative methods by hypothesis generation or identifying lay terminology for accurate survey developed. This course will cover standard qualitative methodologies through a discussion of relevant literature, class exercises, and a class project. (Spring)

PM 460 Master’s Essay
This research project is designed, carried out, analyzed, and written up by the student under the supervision of, and in consultation with, an essay advisor and an advisory committee.

PM 461 Program Evaluation: (Dozier, Ann, Ph.D., RN)
Provide students with practical skills to organize and conduct credible and useful evaluations of health or human service projects or programs. Focusing on methods, this course will help students design and critique approaches to answer two key questions central to program evaluation: Is this program working as intended? Why is this the case? Students will learn the theories behind program evaluation and how to prevent or overcome common evaluation planning and implementation challenges and pitfalls. Students will also develop additional skills in designing programs, writing objectives, working with stakeholders, establishing appropriate measures/data gathering tools, designing implementation specifications, analyzing results and presenting findings. Course uses both in-class and online learning, group and individual projects. (Summer)

PM 463 Introduction to Mathematical Statistics, Part I: (Xueya Cai, Ph.D.)
The goal of this course is to familiarize students with basic elements of probability and mathematical statistics. At the completion of this course the student will be familiar with set theory and notation, understand probability theory, be familiar with special distributions, both discrete and continuous, how to approach functions of random variables, and understand limit theorems in statistics. (Fall)

PM 464 Introduction to Regression Analysis: (Cai, Shubing Ph.D.)
The course will focus on becoming familiar with the theory of ordinary least squares regression analysis and its assumptions as well as the necessary alterations required to conduct valid analysis when those assumptions are not met. To the extent possible, examples will be taken from the health services research literature. Prerequisites: PM 463 or permission of instructor. (Spring)

PM 465 Advanced Multivariate Analysis: (Veazie, Peter, Ph.D.)
The first part of this course introduces general estimation frameworks including least squares
full course listings

(specifically, least squares as applied to multivariate models, and nonlinear least squares), maximum likelihood, generalized method of moments, generalized linear models and generalized estimating equations, and some corresponding variants (e.g., quasi-likelihood, Monte Carlo methods, and instrumental variables). The second part of the course focuses on the application of the preceding estimation methods to the development and analysis of qualitative and limited dependent variable models (e.g., logit, probit, multinomial/conditional/nested logit, multinomial probit, mixed logit and probit, and censored and truncated data), duration models (e.g. Kaplan-Meier product limit estimator, Cox’s proportional hazard model, and full parametric specifications), and multivariate models (e.g., multivariate regression, sample selection models, and simultaneous equation models) (Spring)

PM 466 Cancer Epidemiology: (Adams, M. Jacob, M.D. M.P.H.)
The purpose of this course is to provide the student with a basic understanding of the biology, burden, epidemiology, natural course, treatment and complications of malignancies in the United States and the etiologic factors associated with each of the most common cancers. The course will include discussion of patterns of cancer incidence, molecular, genetic and environmental aspects of etiologic factors, risk assessment using biomarkers and other screening tools, stages of neoplastic development and interventional approaches related to prevention, screening and treatment. Didactic material will be presented on each topic and selected papers from the literature will be reviewed and discussed. (Fall/Spring)

PM 469: Multivariate Models for Epidemiology: (Seplaki, Christopher, Ph.D.)
The purpose of this course is to provide students with a strong understanding of, and experience in, advanced quantitative methods for the analysis of epidemiologic studies. Coverage includes analytic issues (e.g., confounding and interaction) within a broad survey of important method for multivariable analysis of epidemiologic data. Though some lectures may include somewhat technical material, the general approach and emphasis of the class is applied. Prerequisite: PM 416 Advanced Epidemiology, knowledge of SAS or other statistical software, or permission of the instructor. (Spring)

PM 470 Environmental and Occupational Epidemiology: (Rich, David, ScD, Jusko, Todd, Ph.D.)
This is an intermediate-level course designed to familiarize students with the conduct of environmental and occupational epidemiology studies. Students will become familiar with specific environmental and occupational research areas, as well as the unique epidemiologic or exposure methodologies used in those studies. This is not a survey course of broad content areas. The focus will be on the application and interpretation of epidemiologic methods and findings in environmental and occupational health. Students will be asked to analyze, evaluate, summarize, and present published studies used to investigate health effects related to environmental and occupational exposures. (Spring)

PM 472 Measurement and Evaluation of Research Instruments: (Rogge, Ronald, PhD.)
The purpose of this course is to provide the student with a comprehensive background in the development and testing of self-report instruments for epidemiologic research purposes. A review of the principles of survey development will begin the course, however, it will rapidly
move to a more hands-on approach as students will learn how to run and interpret classical test theory analyses, factor analyses, responsiveness to change analyses and Item Response Theory (IRT) analyses of item pool data. The students will learn how to use and integrate these statistical approaches to develop self-report instruments with high levels of validity and low levels of measurement error. (Spring)

PM 476 CTSI Seminar Series (Kieburtz, Karl, M.D.)
A weekly seminar series, that will include presentations from UR training mentors, guest lecturers, experts in technological innovations in clinical research, as well as trainee presentations. (Fall/Spring)

PM 479/HIS208 Health, Medicine, and Social Reform: (Brown, Theodore, Ph.D.)
Examination of the interconnected histories of medical science, public health, and political action promoting social and health reform, from the Scientific Revolution of the seventeenth century to the present. Attention will also be directed to improvements in health status, variations in the distribution of disease and risk, and changes in the social role of medicine and medical institutions. The course material includes both major primary sources (Frank, Chadwick, Engels, Virchow, Riis, and Geiger) and secondary analyses (by Rosen, McKeown, Navarro, Starr, Jones, and Brown) (Alternate Spring semesters)

PM480/HIS 209: Changing Concepts of Disease: (Brown, Theodore Ph.D.)
Historical account of the way disease has been conceptually understood in the Western tradition. Emphasizes the scientific, epidemiological, philosophical, social, cultural, and professional forces that have shaped the development of ideas. (Alternate Spring semesters)

PM483 Advanced Health Economics II: (Li, Yue, Ph.D.)
The study how three major parties in the health care system, insurers, hospitals and physicians, interact and how the nature of these interactions affects the system’s overall economic performance. Prereq: calculus and Health Economics I. (Spring)

PM484 Medical Decisions & Cost Effectiveness Research: (Dolan, James, MD)
Decision and cost-effectiveness analyses are increasingly used to evaluate alternative choices in clinical practice and to enlighten and inform health policy determinations. In this course, students are introduced to the methods and objectives of decision analysis and cost-effectiveness research, as well as to important study design issues that distinguish these investigations from other clinical research studies. Students will also learn decision analysis software such that they can perform analyses themselves as a class project. After completion of the course students will: a) understand the concepts underlying decision analytic methods and how to apply them to help decision makers make better clinical and policy decisions; b) know how to structure decision problems using decision trees, influence diagrams and multi-attribute values trees; and c) know how to conduct single and multiple outcome decision analyses, including cost-effectiveness analysis. (Spring)

PM 486 Medical Ecology: (Dye, Timothy, Ph.D.)
Medical Ecology is a multidisciplinary approach to the study of environmental impacts on
human health. In medical ecology, human beings as biological and social entities are placed within a wider context of dynamic ecosystems that incorporate physical, biological, and chemical components. Worldwide there is a resurgent interest in medical ecology to offer analytic paradigms to study, track and address both new and old risks to human health, taking into account micro- and macro-environmental conditions and processes. Medical ecology is particularly concerned with applying a systems approach to analyzing disease, with an emphasis on how to change in environments relates to change in risk of exposure and incidence of disease. Many methods are used to generate and test medical ecological models, drawn from medical geography, epidemiology, biology, and the social sciences. (Spring)

**PM488: Experimental Therapeutics: (Augustine, Erika, M.D., MS., Venuto, Charles, PhD.)**
This course is designed for individuals interested in the process for identifying novel interventions for diseases, and for their eventual introduction into humans. Topic areas covered will include: preclinical assessment of an intervention’s ability to modulate disease, the preclinical safety data needed before initiating human experimentation, the appropriate techniques for extrapolating dosages from animals to humans; types of human experimentation (Phase 1-Phase 3 clinical trials), the level of animal and human evidence necessary to progress from one phase of experimentation to the next, and the ethical underpinnings of human experimentation. (Including CTSI Skill-Building Workshop Series Seminar: Good Advice: Case Studies in Clinical Research, Regulation, and the Law). (Fall)

**PM489: Injury Epi. & Emergency Care Research Methods: (Jones, Courtney, Ph.D., MPH)**
The course is designed to provide the student with an introduction to the fields of injury epidemiology and emergency care research. This course will provide an overview of the epidemiology of traumatic injuries and how epidemiologic methods are applied to study injury, including issues of exposure and outcome measurement, study design and analysis. Students will also be introduced to the unique challenges and opportunities when conducting research in the emergency care setting (e.g., emergency departments and ambulance-based pre-hospital care) including approaches to subject recruitment, consent, and risk adjustment. (Fall)

**PM 494 Fundamentals of Science, Technology and Health Policy (Steele, Scott)**
Science and Technology (S&T) continues to be an area of significant focus to drive innovation, improve public health and enhance national security in the U.S. and across the globe. This interactive course will offer students exposure to the interaction between S&T and public policy, particularly exploring the role and impact of the Federal government in this process. Students will also have the opportunity to explore roles for scientists in the policy making process, while gaining the ability to objectively analyze S&T policy issues and develop skills to provide policy recommendations and write policy memos. Some assignments will be tailored to individual students’ policy interests and may be reviewed by the course instructor as well as consultants directly familiar with the issue. Note: This class is broadly designed for students both in the basic and applied sciences interested in the S&T policy process, as well as students focused on public health related policy issues. (Spring)

**PM 494 Advanced Methods in Health Services Research: (Hill, Elaine, Ph.D., Intrator,
Orna, Ph.D.)
The purpose of this course is to provide students with a strong understanding of, and experience in, advanced quantitative methods for health services research. Topics covered will be longitudinal models (e.g. fixed and random effects, conditional, marginal and structural models), casual inference (e.g. difference-in-differences, propensity score methods, instrumental variables, regression discontinuity, and quantile/nonlinear regression), and practical considerations for handling data (e.g. missing data, data structures, effective programming). Time permitting, we will also cover spatial methods and some topics in “Big Data.” The course will be taught by lecture and hands-on sessions. The emphasis of the course will be on applications that will be useful for students to implement in their thesis work. (Fall)