HEALTH ECONOMICS AND OUTCOMES RESEARCH, MHS

Program Overview
The Master of Health Science in Health Economics and Outcomes Research (https://www.jhsph.edu/departments/health-policy-and-management/degree-programs/master-of-health-science-in-health-economics/) (MHS in HEOR) is an academic/research program focused on economic evaluation and outcomes research methods for healthcare. This rigorous program develops data analytic and economic modeling skills, as employed in the health policy context. Health economics and outcomes research is an applied field of study drawing upon two disciplines: economic evaluation and outcomes research. Methods in this field are used to promote the efficient and equitable allocation of healthcare resources in public health.

The discipline of economic evaluation is grounded on seminal theories of health economics that relate the value of healthcare to individuals and society. Statistical and decision sciences further enable researchers to build upon these theories and model the value of healthcare technologies to individuals and society. Some examples of this research include the evaluation of the value of new pharmaceuticals to existing therapies, the value of vaccines to society, or the value of a public health campaign to provide safety.

The discipline of outcomes research is grounded on seminal theories of health services that relate the role of healthcare to improving the lives of individuals and society. These theories enable researchers to identify important clinical, patient, and provider outcomes; design measurement techniques to capture different outcomes; and incorporate outcomes measurement into health systems. Specific examples of this research include assessing the impact of new pharmaceuticals on patient outcomes, how to measure a new approach for healthcare delivery, or how to validate a new patient reported outcomes instrument for a pediatric population.

Students enrolled in the program have the opportunity to take courses from multiple departments across the School of Public Health taught by faculty with expertise in a variety of disciplines-many of which are true leaders in the respective fields. Through their coursework, experience at seminars, and capstone projects, students are provided a multidisciplinary experience. Graduates of the program work in public health research, healthcare consulting, pharmaceutical and insurance industries. Many go on to pursue doctoral study in health services research, health economics or other areas of economics or public health and some have entered the program with a medical degree or plan to pursue medical school, and these graduates have used the tools taught in the program to supplement their clinical research.

The MHS program can be completed both full-time (9 months on site in Baltimore or online) or part-time (2 years online). The curriculum requires a minimum of 64 course credits and a mentored research experience (the Capstone project.)

Program Administration
Program Director: Jeromie Ballreich (https://www.jhsph.edu/faculty/directory/profile/3522/jeromie-m-ballreich/), PhD, MHS
Assistant Director: David Earle, MLA
Sr. Academic Coordinator: Mary Wisniewski

Bachelor's/MHS Program
The Johns Hopkins University, in conjunction with the Bloomberg School, offers a combined Bachelor's degree and Master of Health Science (MHS) in Health Economics and Outcomes Research degree. The combined degree programs have been tailored to prepare students for a career in economic evaluation and outcomes research methods for healthcare.

JHU undergraduate students have the unique opportunity to seek early admission to the MHS in Health Economics and Outcomes Research degree. The combined Bachelor's/MHS program is focused on economic evaluation and outcomes research methods for healthcare. Students in this program will receive co-advising from both schools to optimize their academic experience.

Successful applicants to the program will have taken an undergraduate course in economics or microeconomics.

Requirements
Bachelor's/MHS degree applications should be submitted through SOPAHS Express by July 1st between the junior and senior years. Bachelor's/MHS students must be accepted before the start of their senior year. Please note that admitted Bachelor's/MHS students must complete their Bachelor's degree before formally matriculating in the Bloomberg School of Public Health.

Bachelor's MHS applicants must submit the following:
- Transcripts from Johns Hopkins University and, if applicable, transcripts from any other college-level institutions you have attended.*
- Three letters of recommendation.
- Resume or curriculum vitae.
- Statement of purpose and objectives.
- *You may upload unofficial transcripts in the document section to expedite the application review process; however, admitted students must submit an official transcript before they can matriculate into the program.

For further information on the Bachelor's/MHS in Health Economics and Outcomes Research program, contact Assistant Director, David Earle, or visit our website (https://www.jhsph.edu/departments/health-policy-and-management/degree-programs/master-of-health-science-in-health-economics/ba-mhs/).

MHS Program Requirements
Course location and modality is found on the JHSPH website (https://www.jhsph.edu/courses/).

Program Core Curriculum
The MHS in HEOR requires the completion of at least 64 credits. In addition to the program requirements, electives are chosen in consultation with the program or academic adviser. All requirements, including elective courses, must be completed for letter grade if the course is offered for letter grade. Any exceptions must be approved by the Program Director prior to the start of the term.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>PH.140.621</td>
<td>Statistical Methods in Public Health I</td>
<td>4</td>
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<tr>
<td>PH.140.622</td>
<td>Statistical Methods in Public Health II</td>
<td>4</td>
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<tr>
<td>PH.140.623</td>
<td>Statistical Methods in Public Health III</td>
<td>4</td>
</tr>
<tr>
<td>PH.300.651</td>
<td>Introduction to the U.S. Healthcare System</td>
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PH.309.712 Assessing Health Status and Patient Outcomes 3
PH.313.601 Economic Evaluation I 3
PH.313.602 Economic Evaluation II 3
PH.313.603 Economic Evaluation III 3
PH.318.603 Applied Microeconomics for Policymaking 3
PH.313.865 MHS Capstone in Health Economics 2
PH.340.721 Epidemiologic Inference in Public Health 1 5
PH.552.601 Foundational Principles of Public Health 1 0.5
PH.552.603 The Role of Qualitative Methods and Science in Describing and Assessing a Population’s Health 1 0.5
PH.552.607 Essentials of Environmental Health 1 0.5
PH.552.608 Biologic, Genetic and Infectious Bases of Human Disease 1 0.5
PH.552.609 Psychological and Behavioral Factors That Affect A Population’s Health 1 0.5
PH.552.610 The Social Determinants of Health 1 0.5
PH.552.611 Globalization and Population Health 1 0.5
PH.552.612 Essentials of One Health 1 0.5
Choose 1 of:
PH.309.616 Introduction to Methods for Health Services Research and Evaluation I 2
and
PH.309.617 Introduction to Methods for Health Services Research and Evaluation II 2
OR
PH.300.713 Research and Evaluation Methods for Health Policy 3
Choose 1 of:
PH.313.641 Introduction to Health Economics 3
OR
PH.312.693 Introduction to Comparative Effectiveness and Outcomes Research 3

1 Course meets one or more CEPH learning objectives (https://ecatalogue.jhu.edu/public-health/ceph-requirements/).

Electives
In order to meet the graduation requirement, students are required to take elective coursework. With so many elective options available, all students should meet with their program advisor prior to registering to determine the right options to meet their program goals.

Capstone Project
Students will complete a mentored capstone (scholarly article) as the culminating requirement for the program. To facilitate this, each student will enroll for the MHS Capstone in the 4th term. The capstone is an economic analysis on a topic with health policy implications. The capstone project is completed under the guidance of a JHSPH faculty member. All students are required to submit a written product and give an oral presentation of their capstone work in 4th Term.

MHS Program Policies

MHS Program Prerequisites
1. All students must complete Introduction to Online Learning, which is offered through the Center for Teaching and Learning at the Bloomberg School. This non-credit course is a prerequisite that must be completed in the summer prior to matriculation.
2. All students must take the required course PH.550.860 Academic & Research Ethics at JHSPH. This is an online offering that must be completed in the summer prior to matriculation. Failure to complete this course will prevent students from registering for 2nd term.

Satisfactory Academic Progress
Students must meet minimum academic standards (https://my.jhsph.edu/Resources/PoliciesProcedures/ppm/PolicyProcedureMemoranda/Academic_Programs_01_GeneralPolicies_7-7-17.pdf) to remain in the MHS in HEOR program. A student’s failure to meet any of the criteria is grounds for being placed on academic warning and/or being dismissed from the program.

HPM Policy on Course Waivers
In rare cases, courses may be waived if an equivalent graduate course was completed at another institution within the last 5 years.

Any request for a course waiver must be submitted an approved by the program director in writing at least one week prior to the start of the term.

Procedure: For any course(s) to be considered for a waiver the student must submit a formal written request with all documentation justifying the request to the Program Director. The decisions on granting approvals for such requests are totally at the discretion of the Program Director in conjunction with the course faculty and will be communicated in writing to the student. The documentation necessary to grant a waiver will, in general, require the the title of previous course(s), textbook(s) used, summary of course syllabi, course format (semester or term), grade(s) received, year completed, and institution where the course was completed.

HPM Guidelines for Student Employment
Full-time master’s students who work for the Bloomberg School are eligible to work a maximum of 19.99 hours per week during each academic term. During periods of academic non-enrollment (i.e., summer, spring break, etc.) student employees may work up to 40 hours per week.

For FICA TAX purposes, "summer" begins on June 1st and ends on the last day of August prior to the first day of Term 1. During this time, students may work up to 40 hours per week.

MHS Learning Outcomes

Program Competencies
The competencies for the MHS in HEOR are met through required and elective coursework, and a mentored research capstone. Upon successful completion of the program, students will have mastered the following program competencies; specifically, students will have the ability to:

• Use statistics and econometric methods (including statistical inferences, regression methods, and applied econometric methods) to solve public health problems
• Measure and calculate health outcomes; differentiate between methods of economic evaluation and practice use of economic evaluation
• Apply economic theory and mathematical microeconomic modeling within the field of health economics
• Evaluate and apply methods in health economics and economic evaluation in public health research
• Assess the analytical methods in health economics and economic techniques in the fields of health services research and health policy
• Cite and reference methods and techniques used within the field of health economics
• Execute a post-graduate career plan

CEPH-Defined Introductory Public Health Learning Objectives
The curriculum for the MHS program includes coursework that has been approved to meet the foundational public health knowledge learning objectives (https://e-catalogue.jhu.edu/public-health/ceph-requirements/) in the Profession & Science of Public Health and Factors Related to Human Health domains as required by the Council on Education for Public Health (CEPH).