MCR

Clinical Investigation

MCR 501: Experimental Clinical Research
This course will (1) introduce trainees to formulation of a research question and hypothesis testing and; (2) introduce trainees to various research methodologies and how they are used to answer clinical research questions. This is not a clinical trials design course but rather is focused on how a clinical paradigm is used to formulate a research question and develop a hypothesis.

Offered
Summer, 1 credit, Letter graded (A, A-, B+, etc.)

MCR 506: Biostatistics 1 for Clinical Scientists
This is Part One of a two-part biostatistics training sequence. This course serves as an introduction to the principles and methodologies of biostatistics for clinical researchers. The material covered includes probability and distribution, descriptive statistics, point and interval estimation, hypothesis testing, correlation, linear regression, ANOVA, ANCOVA, logistical regression, survival analysis, and non-parametric tests.

Prerequisite: High school algebra
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

MCR 507: Biostatistics II
The second course in biostatistics in the clinical scientists training sequence is intended to further acquaint the trainees with the commonly used procedures covered in the first course and to learn to apply these procedures to real and simulated datasets using statistical software. As part of the course requirement, the trainees will need to complete a course project analyzing an appropriate research data set.

Offered
Spring, 3 credits, Letter graded (A, A-, B+, etc.)

MCR 514: Epidemiology for Clinical Scientists
The aims of this course are to introduce trainees to basic epidemiologic concepts, methods and topics, and to provide them with skills to critically evaluate published literature, interpret data, and develop and evidence based approach to medical practice. Upon completion, trainees will be able to apply basic epidemiologic principles and methods to problems encountered in clinical medicine.

Co-requisite: MCR 506 Offered
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

MCR 525: Contemporary Topics in Clinical and Translational Research
This monthly lunchtime seminar is designed to expose clinical and basic science students to contemporary topics in clinical and translational research. Topics include "-Oms", Biobanking and Biorepositories, Biomedical Informatics, Imaging and Big Data. Lunch will be provided.

1 credit, S/U grading
May be repeated 3 times FOR credit.

MCR 549: Legal and Regulatory Issues in Clinical Research
Major contemporary legal and regulatory issues associated with scientific research will be discussed. Additionally, this course will introduce students to the history behind the regulations that safeguard human subjects, will educate students in detail about their responsibilities as clinical investigators.

Offered
Summer, 1 credit, Letter graded (A, A-, B+, etc.)

MCR 562: Data Management and Informatics for Clinical Scientists
This course provides students with computer and data management skills required to complete a research project. Questionnaire development, data processing and analysis, and issues surrounding data security are covered. Students will learn to use Excel, Access and Velos eResearch for data input and management, SPSS for data processing and analysis, and powerpoint and Word for presentations and report generation. Hands-on exercises are used to develop skills.

Offered
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

MCR 566: Clinical Research Methods
This course aims to introduce trainees to the different aspects of clinical trial design, conduct, management and analysis; and to provide trainees with a basic understanding of the key elements of clinical trial design and practice. 2 credits, Fall term, Professor Leslie Hyman, PhD

2 credits, Letter graded (A, A-, B+, etc.)

MCR 576: Research in Population Health and Clinical Outcomes Research
This course provides an overview of research methods as applied to questions raised in the fields of population health and clinical science. It covers the topics of risk adjustment, cost assessment, access to, utilization and quality of care, outcomes and health status measurement, and health system performance.

Offered
Fall, 3 credits, Letter graded (A, A-, B+, etc.)

MCR 580: GCRC/SAC Scientific Review Process
Students will understand and participate in the process of scientific review of human subject research protocols submitted to the GCRC.

Offered
Fall, 1 credit, Letter graded (A, A-, B+, etc.)

MCR 601: Ethics and Professionalism in Clinical Research
Using an interative case-based format, the topics covered include the justification of human research and reasonable balance of risk versus benefits; the use of animals in biomedical research; issues of informed consent and IRB paperwork processing; the ethical challenges of clinical research; ethical concerns associated with genetic testing and screening; research involving minors and adults of questionable capacity to consent; conflict of interest and funding of research for individuals and institutions; investigator responsibilities with regard to fulfilling government regulations; scientific fraud and whistle blowing; the scientific community and mentoring; authorship and attribution; special populations and inclusion of minorities and; mercy research-related special requirements.

2 credits, Letter graded (A, A-, B+, etc.)

MCR 630: Technology Transfer
Students will be exposed to concepts including disclosing inventions, protecting intellectual property, working with industry/working with university faculty, licensing, collaborative agreements, intellectual property protection and management and commercialization.

Offered
Spring, 0-6 credits, Letter graded (A, A-, B+, etc.)

MCR 650: Molecular and Laboratory Methods in Clinical Research
The aims of this course are to introduce trainees to laboratory methods relevant to clinical research with an emphasis on molecular medicine.

Offered
Fall, 2-3 credits, Letter graded (A, A-, B+, etc.)

MCR 684: Writing a Research Proposal
This course will help students develop the skills necessary to design a research
student's Thesis Committee. 1-6 Credits, ABCF Grading

MCR 699: Masters Thesis
Original investigation in clinical research undertaken with the supervision of the
1-6 credits, Letter graded (A, A-, B+, etc.)
May be repeated 4 times FOR credit.

MCR 696: Presenting Research Results
to Peer Audiences
Students will have reading assignments on
designing and giving a great talk as well as
how to write a paper suitable for publication in
a peer reviewed journal. Students will have an
opportunity to practice giving a talk about their
research projects. Masters students will present
a summary of their thesis project to date. Each
student in the Masters in Clinical Research
Program will present a final project as part of
the Annual Research Symposium help the last
day of class.
1 credit, S/U grading

MCR 689: Practicum in Teaching
The course provides hands-on experience
in classroom teaching and mentoring
students in the conduct of clinical research.
Other activities may include preparation
and supervision of class projects, exams,
homework assignments, creation of voice
over PowerPoint lectures, and participation
in interactive Blackboard student discussions.
A final report that summarizes the activities
completed and provides a self-reflection on
the experiences gained during the practicum
is required at the conclusion of the course.
Participation by advanced graduate student
under the supervision of program faculty.
Prerequisite: Permission of the supervising
faculty. 3 credits, S/U grading May be repeated
2 times FOR credit.
3 credits, S/U grading
May be repeated for credit.

MCR 694: Seminars in Clinical
Research
Offered
Fall and Spring, 1 credit, Letter
graded (A, A-, B+, etc.)

MCR 695: Defining and Developing
a Career Path in Clinical and
Transnational Research
Students will read and discuss chapters from
the Howard Hughes Medical Institute "Making
the Right Moves" online textbook and develop
a career plan. Topics include how to set up
your lab, networking, conflicting resolution
and managing your staff.
1 credit, S/U grading

MCR 693: Clinical Research
Opportunities at Stony Brook
University and Affiliated Institutions
The aims of this series are to familiarize
trainees with the range and breadth of
multidisciplinary clinical research carried out
at Stony Brook and its affiliated institutions,
and to provide examples of successful team
approaches to study design, data analysis and
ethical issues in clinical research. At each
semester, a research team will be highlighted
that will describe how the team came to be
formed followed by a presentation about
the research hypothesis, study design, data
collection and analysis, and future work to
follow.
Offered
Fall, Spring, and Summer, 1 credit, Letter
graded (A, A-, B+, etc.)

MCR 692: Research in Progress
This course meets weekly and is attended
by all trainees and mentors. Trainees present
updates of their research endeavors and receive
input from experienced mentors. Trainees
are exposed to discussion among mentors on
research design and interpretation.
Offered
Fall and Spring, 1 credit, S/U grading