



# Graduate School of Biomedical Sciences



## Spring 2021 Course Catalog

Spring Registration Period: 11/17/2020 - 12/7/2020

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# GSBS SPRING 2020 REGISTRATION INSTRUCTIONS

Spring Registration Period: 11/17/2020 - 12/7/2020

Final day for add/drops by session:

MDP: 1/14/2021 | CPH: 1/30/2021 | BBS: 2/11/2020

Course sessions are identified in class number section of the course catalog

## PeopleSoft Campus Solutions (PSCS) On-line Registration

### To begin online Registration

Sign into PeopleSoft Campus Solutions (PSCS) with your UMMS credentials

[https://sm-prd.wsa.umasscs.net/psp/wsaprd92/EMPLOYEE/SA/c/NUI\\_FRAMEWORK.PT\\_LANDINGPAGE.GBL](https://sm-prd.wsa.umasscs.net/psp/wsaprd92/EMPLOYEE/SA/c/NUI_FRAMEWORK.PT_LANDINGPAGE.GBL)

### PSCS FAQ's including login and password issues

[https://umassmed.service-now.com/sp?id=kb\\_article&sys\\_id=7f14024d4ffb9f0475ed97dd0210c7b5](https://umassmed.service-now.com/sp?id=kb_article&sys_id=7f14024d4ffb9f0475ed97dd0210c7b5)

## Class Numbers

Please note course numbers (example: BBS601) are not the same as class numbers (example: 1257). **Class numbers are unique identifiers that change every semester.** The Class Number is included with the course information, except for research or tracking courses (where there are multiple faculty sections)

You will need to use the Class Numbers Lists to register for any Research or Tracking Course. Class number lists are within this registration guide; check the table of contents for the page numbers

## Class Meeting Information

Students are strongly advised to obtain class meeting information directly from the Course Director prior to registering for the course, particularly if there is a concern about conflicts with other course offerings. Frequently faculty have not finalized this information by the date that Registration opens. If the information about class start/end dates, meeting times and room numbers has been submitted to the Graduate School office, it will be in the Course Catalog section of this document.

## ASSISTANCE

### Assistance with Administrative Questions

#### Basic & Biomedical Sciences Students Contact:

First Year: Annette Stratton, S1-824, 508-856-1938, [annette.stratton@umassmed.edu](mailto:annette.stratton@umassmed.edu)

Second Year and Beyond: Mindy Donovan, S1-824, 508-856-5938, [mindy.donovan@umassmed.edu](mailto:mindy.donovan@umassmed.edu)

#### Clinical & Translational Sciences and MD/PhD Students Contact:

Anne Michelson, S1-824, 508-856-8025, [anne.michelson@umassmed.edu](mailto:anne.michelson@umassmed.edu)

### Assistance with Advanced Topics

If you have questions regarding program requirements or the selection of advanced topic or elective courses, you should meet with your Graduate Program Director or Thesis Advisor for clarification.

#### Graduate Program Directors

Program	Name	Location	Telephone
Biochemistry and Molecular Pharmacology	Rhind, Nick	LRB-940E1	508-856-8316
Bioinformatics & Computational Biology	Weng, Zhiping	AS5-1069	508-856-8866
Cancer Biology	Kim, Dohoon	LRB 4-422	508-856-4428
Cancer Biology	Mercurio, Arthur	LRB-408	508-856-8676
Clinical & Population Health Research	Lapane, Kate	AS6-1083	508-856-8999
Immunology & Microbiology (Immunology Advisor)	Silverman, Neal	LRB-326	508-856-5826
Immunology & Microbiology (Virology Advisor)	Morrison, Trudy	S5-250	508-856-6592
Immunology & Microbiology (Bacterial Pathogenesis Advisor)	Beth McCormick	AS8-2049	508-856-6048
Interdisciplinary Graduate Program	Peterson, Craig	Biotech2, Suite 210	508-856-5858
Interdisciplinary Graduate Program	Tissenbaum, Heidi	LRB-621	508-856-5840
MD/PhD	Corvera, Silvia	Biotech 2, suite 107	508-856-6898
Millennium MD/PhD Program	Kornfeld, Hardy	LRB-303	508-856-8025
MS in Clinical Investigation	Goldberg, Robert	AS6-2071	508-856-8025
Neuroscience	Weaver, David	LRB-723	508-856-2495
Pathway to Graduate Study	Lewis, Brian	LRB-521	508-856-4325
Quantitative and Computational Biosciences and Bioengineering	Grunwald, David	AS4-1043	774-455-3632
Translational Science	Mandrekar, Pranoti	LRB-221	508-856-5391
Translational Science	Royer, William	LRB-921	508-856-6912

# CREDIT HOUR DEFINITIONS AND AUDIT PROCESS

Updated 10-1-2020

The University of Massachusetts Medical School, which consists of its School of Medicine, Graduate School of Nursing and Graduate School of Biomedical Sciences, fulfills the following Federal definition of a credit hour:

“Except as provided in 34 CFR 668.8(k) and (1), a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than –

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately 15 weeks for one semester or trimester hour of credit, or 10-12 weeks for one quarter hours of credit, or the equivalent amount of work over a different amount of time; or
2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.”

## **Faculty and Student Notifications:**

The credit hour assignments will be available on websites where they can be accessed by individuals or offices with UMMS credentials for inclusion in appropriate materials. It will also be presented at relevant curriculum committee meetings to ensure faculty awareness.

## **Graduate School of Biomedical Sciences (GSBS) Course Credit Hour Assignments**

All new courses, their associated syllabi, methods of student evaluation and credit hours must be reviewed by the GSBS Assembly Curriculum Committee. Once approved by this Committee, the course is presented for approval to the GSBS Assembly, a body of representative faculty, students and administrators selected by each Program of Study and appointed by the GSBS Dean. An approved course returns to the GSBS Assembly for review only when the content, evaluation methodology or credit hours are significantly altered or when student evaluations of the course demand the attention of the GSBS Dean, GSBS Assembly and/or the faculty.

- One credit hour is assigned to a course per (minimum) three hours of effort/week, for a 12-20 week semester. “Effort” consists of any combination of active contact hours and preparation time. For example, BBS 614 is a six-credit hour course, and requires a minimum of nine contact hours and a minimum of nine hours of preparation time per week, for the fall term.
- Students undertake two eight-week lab rotations each in the fall and in the spring and one 12-week rotation in summer. The eight-week rotations require 160 hours of research each and each is assigned three credit hours. The twelve-week rotation involves over 400 hours of research and each is assigned six credit hours.

## COURSES FOR SPRING REGISTRATION

### Basic & Biomedical Sciences Courses

#### BBS 550 - Laboratory Rotation (PGSP)

Class #: See Class Number List

Laboratory rotations are defined periods of research experience under the direction of a faculty member. They are intended to familiarize the student with concepts and techniques in several areas of research and to assist the student in evaluating research laboratories and projects that might be developed into a dissertation project. The student will participate in an ongoing research project, gain familiarity with concepts underlying the research, acquire a working knowledge of techniques used in the research, and write a report and present an oral summary of the results of the research.

**Prerequisites:** None

**Credits:** Variable | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Postbaccalaureate Research Education Program

**Course Director:** Lewis, Brian

**Course Director email:** brian.lewis@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

#### BBS 717 - Structural Biology

Class #: 4530

Structural Biology has revolutionized biology. The purpose of this course is to provide graduate students with a detailed introduction to approaches for structural determination of macromolecules including protein crystallography, cryo electron microscopy (CryoEM), nuclear magnetic resonance (NMR) spectroscopy and small angle X-ray scattering (SAXS). Emphasis will be placed on both structural determination and analysis of dynamics, which can be crucial for macromolecular function. Normally, each week will include a 90 minute lecture that is supplemented with paper discussion or problem sets, whose time and venue will depend upon the activity.

**Prerequisites:** None

**Credits:** 2 | **Grading:** Letter

**Associated Program(s):** Biochemistry & Molecular Pharmacology

**Course Director:** Kelch, Brian

**Course Director email:** brian.kelch@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Wednesdays 2p-3:30p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 719 - Cellular Biochemistry

Class #: 2045

Cellular Biochemistry takes an inside-out approach to teaching the molecular biological underpinnings of DNA replication, gene transcription, translation, metabolism, secretion and cell signaling.

**Prerequisites:**

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Biochemistry & Molecular Pharmacology

**Course Director:** Thompson, Paul

**Course Director email:** paul.thompson@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:** Dion, Keiko

**Course Administrator email:** Keiko.Dion@umassmed.edu

**Class Meeting Information:** Tuesdays & Thursdays 1p-2:30p

**Class Meeting Location:** online

**Required Textbooks:** None

**Recommended Textbooks:**

**Additional notes:**

## BBS 725 - Cancer Biology and Medicine

Class #: 2131

This course will provide students with a rigorous and comprehensive understanding of the mechanisms that underlie the genesis and progression of human cancers. It will build on the basic science knowledge acquired in the Foundations Course and establish an appreciation of cancer as a disease. The salient topics to be covered include cancer stem cells; oncogenes and tumor suppressor genes; tumor-host interactions, invasion and metastasis, cancer metabolism and anti-tumor immunity. A major theme of the course will be to integrate the biology of cancer with the clinical behavior of tumors.

**Prerequisites:** None

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Cancer Biology, Interdisciplinary

**Course Director:** Mercurio, Arthur

**Course Director email:** Arthur.Mercurio@UMassmed.edu

**Co-Course Director:** Kelliher, Michelle

**Co-Course Director email:** michelle.kelliher@umassmed.edu

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Tuesdays & Thursdays 9a-11a

**Class Meeting Location:** online

**Required Textbooks:** Weinberg, Robert A. The Biology of Cancer, 2nd Edition. Garland Science, Taylor & Francis Group, 2014. ISBN: 978-0815342205

**Recommended Textbooks:**

**Additional notes:**

## BBS 755 - Infection and Immune Response

Class #: 1009

Infectious disease is among the strongest agents of natural selection, and adaptations constituting the armament of pathogens and the defense of the host involve many of the most fascinating mechanisms in biology. This course presents a modern view of the fundamental biology of bacterial and viral disease in the context of molecular mechanisms of host defense. A detailed knowledge of cellular and molecular components of the immune system will be integrated with current understanding of microbial virulence strategies, to provide a working understanding of biological mechanisms important in health and disease. The course is organized as three integrated sections focusing on the fields of virology, bacterial pathogenesis, and immunology. Students will obtain a background for advanced course work in each of these disciplines. We will focus on three themes; (1) basic properties of microbes and the innate and adaptive immune defenses that have evolved to respond to them, (2) the interplay—in both dynamic and evolutionary sense—between host defenses and microbial virulence, and (3) the mechanisms of pathogenesis during infection. Comparative clinical and epidemiological pictures of selected diseases will be presented, and will serve as a framework for development of key molecular, cellular, and physiological concepts.

**Prerequisites:** BBS 614 or course equivalent

**Credits:** 4 | **Grading:** Letter

**Associated Program(s):** Immunology & Microbiology

**Course Director:** Kowalik, Timothy

**Course Director email:** Timothy.Kowalik@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:** Parker, Amy

**Course Administrator email:** Amy.Parker@umassmed.edu

**Class Meeting Information:** 02/02 – 05/28/2021, Tuesdays, Thursdays and Fridays 10:30a-12p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 755a - Virology

Class #: 1629

Infectious disease is among the strongest agents of natural selection, and adaptations constituting the armament of pathogens and the defense of the host involve many of the most fascinating mechanisms in biology. This course presents a modern view of the fundamental biology of bacterial and viral disease in the context of molecular mechanisms of host defense. A detailed knowledge of cellular and molecular components of the immune system will be integrated with current understanding of microbial virulence strategies, to provide a working understanding of biological mechanisms important in health and disease. The course is organized as three integrated sections focusing on the fields of virology, bacterial pathogenesis, and immunology. BBS755a focuses on virology. Students will obtain a background for advanced course work in each of these disciplines. We will focus on three themes; (1) basic properties of microbes and the innate and adaptive immune defenses that have evolved to respond to them, (2) the interplay—in both dynamic and evolutionary sense—between host defenses and microbial virulence, and (3) the mechanisms of pathogenesis during infection. Comparative clinical and epidemiological pictures of selected diseases will be presented, and will serve as a framework for development of key molecular, cellular, and physiological concepts.

**Prerequisites:** BBS 614 or course equivalent

**Credits:** 1 | **Grading:** Letter

**Associated Program(s):** Immunology & Microbiology

**Course Director:** Kowalik, Timothy

**Course Director email:** Timothy.Kowalik@umassmed.edu

**Co-Course Director:** Morrison, Trudy

**Co-Course Director email:** trudy.morrison@umassmed.edu

**Course Administrator:** Parker, Amy

**Course Administrator email:** Amy.Parker@umassmed.edu

**Class Meeting Information:** 02/02 – 03/04/2021, Tuesdays, Thursdays and Fridays 10:30a-12p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 755b - Bacterial Pathogenesis

Class #: 1631

Infectious disease is among the strongest agents of natural selection, and adaptations constituting the armament of pathogens and the defense of the host involve many of the most fascinating mechanisms in biology. This course presents a modern view of the fundamental biology of bacterial and viral disease in the context of molecular mechanisms of host defense. A detailed knowledge of cellular and molecular components of the immune system will be integrated with current understanding of microbial virulence strategies, to provide a working understanding of biological mechanisms important in health and disease. The course is organized as three integrated sections focusing on the fields of virology, bacterial pathogenesis, and immunology. BBS755b focuses on bacterial pathogenesis. Students will obtain a background for advanced course work in each of these disciplines. We will focus on three themes; (1) basic properties of microbes and the innate and adaptive immune defenses that have evolved to respond to them, (2) the interplay—in both dynamic and evolutionary sense—between host defenses and microbial virulence, and (3) the mechanisms of pathogenesis during infection. Comparative clinical and epidemiological pictures of selected diseases will be presented, and will serve as a framework for development of key molecular, cellular, and physiological concepts.

**Prerequisites:** BBS 614 or course equivalent

**Credits:** 1 | **Grading:** Letter

**Associated Program(s):** Immunology & Microbiology

**Course Director:** Kowalik, Timothy

**Course Director email:** Timothy.Kowalik@umassmed.edu

**Co-Course Director:** Irazoqui, Javier

**Co-Course Director email:** javier.irazoqui@umassmed.edu

**Course Administrator:** Parker, Amy

**Course Administrator email:** Amy.Parker@umassmed.edu

**Class Meeting Information:** 03/05 – 04/06/2021, Tuesdays, Thursdays and Fridays 10:30a-12p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

Infectious disease is among the strongest agents of natural selection, and adaptations constituting the armament of pathogens and the defense of the host involve many of the most fascinating mechanisms in biology. This course presents a modern view of the fundamental biology of bacterial and viral disease in the context of molecular mechanisms of host defense. A detailed knowledge of cellular and molecular components of the immune system will be integrated with current understanding of microbial virulence strategies, to provide a working understanding of biological mechanisms important in health and disease. The course is organized as three integrated sections focusing on the fields of virology, bacterial pathogenesis, and immunology. BBS755c focuses on immunology. Students will obtain a background for advanced course work in each of these disciplines. We will focus on three themes; (1) basic properties of microbes and the innate and adaptive immune defenses that have evolved to respond to them, (2) the interplay—in both dynamic and evolutionary sense—between host defenses and microbial virulence, and (3) the mechanisms of pathogenesis during infection. Comparative clinical and epidemiological pictures of selected diseases will be presented, and will serve as a framework for development of key molecular, cellular, and physiological concepts.

**Prerequisites:** BBS 614 or course equivalent

**Credits:** 2 | **Grading:** Letter

**Associated Program(s):** Immunology & Microbiology

**Course Director:** Kowalik, Timothy

**Course Director email:** Timothy.Kowalik@umassmed.edu

**Co-Course Director:** Brehm, Michael

**Co-Course Director email:** michael.brehm@umassmed.edu

**Course Administrator:** Parker, Amy

**Course Administrator email:** Amy.Parker@umassmed.edu

**Class Meeting Information:** 04/08 – 05/28/2021, Tuesdays, Thursdays and Fridays 10:30a-12p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 760 - Introduction to Neuroscience

Class #: 1635

This course gives an overview of the fundamental principles of molecular, cellular, developmental and integrated neuroscience, including state-of-the-art experimental approaches. Required for all students in the Neuroscience Program. Optional advanced topics course for students in other programs.

**Prerequisites:** BBS 614 or course equivalent or permission from course coordinator

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Neuroscience

**Course Director:** Rittenhouse, Ann

**Course Director email:** Ann.Rittenhouse@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Tuesdays & Thursdays

3-4:30p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:** Kandel, Eric R., and Sarah Mack. Principles of Neural Science. McGraw-Hill Medical, 2014. ISBN: 978-0071390118

**Additional notes:**

## BBS 761 - Systems Biology of the Cell Cycle

Class #: 4571

This course covers genetic, biochemical and cellular mechanisms of cell cycle control. Topics include genetic screens for cell cycle regulators; cell cycle checkpoints; cell cycle regulation of DNA replication and chromosome structure; and the cell cycle in development and cancer.

**Prerequisites:** None

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Interdisciplinary

**Course Director:** Rhind, Nicholas

**Course Director email:** nick.rhind@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Wednesdays 3-5p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 786 - Molecular Basis of Disease

Class #: 1929

The objective of this course is to introduce GSBS graduate students to approaches used to understand the molecular causes of representative diseases and application of such knowledge toward the design and implementation of rational therapies. The course focuses on variety of diseases, including neurodegenerative, cardiovascular, and metabolic diseases. Interspersed among these topics will be guest speakers who will discuss specific aspects of the drug design process and novel approaches to therapy, including gene-, RNA-, and cell-based interventions. Class discussions will also help prepare students to participate effectively in team-oriented translational science. Students will write a short NIH-style research proposal addressing a disease mechanism or therapy development of interest and defend the proposal during the last two weeks of class.

**Prerequisites:** BBS 614 or course equivalent

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Translational Science, Biochemistry & Molecular Pharmacology

**Course Director:** Mandrekar, Pranoti

**Course Director email:** pranoti.mandrekar@umassmed.edu

**Co-Course Director:** Trivedi, Chinmay

**Co-Course Director email:** chinmay.trivedi@umassmed.edu

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Wednesdays 9a-12p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:** A list of scientific articles addressing the molecular and/or therapeutic aspects of disease will be provided at the beginning of each section of the course. Generally, the faculty will summarize the background material with the goal to define the

## BBS 810 - Graduate Student Seminar Series

Class #: 1637

This course provides students with the opportunity to develop public speaking skills necessary for scientific presentations. This experience will facilitate both formal and informal presentation of a student's own research. All BMP students will be registered in this course to satisfy the annual presentation requirement.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Biochemistry & Molecular Pharmacology

**Course Director:** Rhind, Nicholas

**Course Director email:** nick.rhind@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Fridays 4pm-5pm

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:** Instructor will advise students of start date.

## BBS 834 - Immunobiology and Virology Spring Seminar Series

Class #: 1639

Leading researchers present a weekly seminar on a basic or clinical immunology and virology topic. Prior to the seminar, students read papers suggested by the seminar speaker and discuss the papers in class. Following the seminar, graduate students meet with the speaker for a discussion of the formal seminar. This course surveys the most important areas of basic and clinical immunology and virology, including, but not limited to, antigen presentation; gene rearrangements; and expression of the genes for antigen receptors, immune tolerance, cytokines, immune cell development, immunodeficiency diseases, autoimmune diseases, human immune system malignancies; and immune response to infectious agents such as viruses, parasites and bacteria.

**Prerequisites:** BBS755, Infection and Immune Response, BBS821, Molecular and Cellular Immunology

**Credits:** 2 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Immunology & Microbiology

**Course Director:** Silverman, Neal

**Course Director email:** neal.silverman@umassmed.edu

**Co-Course Director:** Huseby, Eric & Irazoqui, Javier

**Co-Course Director email:** eric.huseby@umassmed.edu, Javier.Irazoqui@umassmed.edu

**Course Administrator:** Callaghan, Cindi

**Course Administrator email:** Cindi.Callaghan@umassmed.edu

**Class Meeting Information:** Tuesdays 3p-4p and Thursdays 2-4:30p

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 848 - Tutorial in Neuroscience

Class #: 1967

Tutorials offer the opportunity for one student or a small group of students to discuss research in a specific research area, or a series of selected papers, with one or more faculty members. The small group format allows extensive discussion and interaction. This course number allows faculty and students the flexibility to develop a syllabus of their making. The proposed syllabus must be approved by the Neuroscience Program director. Tutorials are arranged with individual faculty members. Students may re-enroll for multiple tutorials.

**Prerequisites:** Permission from Neuroscience Program Director

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Neuroscience

**Course Director:** Weaver, David

**Course Director email:** david.weaver@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** To be arranged with individual faculty member

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:** Expected effort for one credit is 15 contact hours

## BBS 850 - Laboratory Rotation

**Class #: GROUP REGISTERED**

Laboratory rotations are defined periods of research experience under the direction of a faculty member. They are intended to familiarize the student with concepts and techniques in several areas of research and to assist the student in evaluating research laboratories and projects that might be developed into a dissertation project. The student will participate in an ongoing research project; gain familiarity with concepts underlying the research; acquire a working knowledge of techniques used in the research; and write a report and present an oral summary of the results of the research.

**Prerequisites:** None

**Credits:** Variable | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Basic & Biomedical Sciences

**Course Director:** GSBS Full Faculty

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## BBS 865 - BBS TRAC Meeting (MDP ONLY)

**Class #: 3604**

All graduate students are required to have at least one Thesis Research Advisory Committee (TRAC) meeting each academic year. After passing their Qualifying Examination and selection of their TRAC, students are required to register for this course each fall semester until their Dissertation Advisory Committee is formed.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Basic & Biomedical Sciences

**Course Director:** Lane, Mary Ellen

**Course Director email:** maryellen.lane@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## **BBS 870 - Prequalifying Research**

**Class #: See Class Number List**

This course is for students who have selected a program and thesis advisor but who have not yet passed the Qualifying Examination.

**Prerequisites:** None

**Credits:** 9 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Basic & Biomedical Sciences

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## **BBS 900 - Thesis Research**

**Class #: QE YEAR: SEE CLASS NUMBER LIST**

**POST-QE: AUTO REGISTERED**

Students register for Thesis Research fall term of year three of the program, after passing the Qualifying Exam.

**Prerequisites:** None

**Credits:** 12 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Basic & Biomedical Sciences

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## **BBS 990 - Graduate Research**

**Class #: AUTO REGISTERED**

Students register for Graduate Research fall term of year four in the PhD Program and will continue to register each semester until they complete all remaining requirements.

**Prerequisites:** None

**Credits:** 0 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Basic & Biomedical Sciences

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## Clinical & Translational Science Courses

### CTS 550 - Research Assistantship

Class #: See Class Number List

Laboratory rotations are defined periods of research experience under the direction of a faculty member. They are intended to familiarize the student with concepts and techniques in several areas of research and to assist the student in evaluating research laboratories and projects that might be developed into a dissertation project. The student will participate in an on-going research project; gain familiarity with concepts underlying the research; acquire a working knowledge of techniques used in the research; and write a report and present an oral summary of the results of the research.

**Prerequisites:**

**Credits:** 4 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Postbaccalaureate Research Education Program

**Course Director:** Student's advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

### CTS 602B - Advanced Epidemiology and Research Methods

Class #: 3768

The purpose of this class is to learn advanced epidemiologic techniques, to learn how and when to apply them, and to learn to design rigorous epidemiologic studies. Students will gain experience in reading the primary epidemiologic methods literature. Course objectives will be met through class lecture, class discussion, problem sets, exams, application of selected principles to one's research and the development of a mini-lecture.

**Prerequisites:** CTS602A, CTS603A, CTS603B (corequisite)

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Nunes, Anthony

**Course Director email:** Anthony.Nunes@umassmed.edu

**Co-Course Director:** Lapane, Kate

**Co-Course Director email:** 100846570

**Course Administrator:** Baron, Kelley

**Course Administrator email:** kelley.baron@umassmed.edu

**Class Meeting Information:** Tuesdays & Thursdays 9a-10:30a

**Class Meeting Location:** online

**Required Textbooks:** Rothman, K. J., Greenland, S., & Lash, T. L. (n.d.). Modern epidemiology. ISBN: 978-1451190052 | Savitz, D. A., & Wellenius, G. A. (2016). Interpreting epidemiologic evidence: connecting research to applications. New York, NY, United States of America:

**Recommended Textbooks:**

**Additional notes:**

## CTS 603B - Statistical Methods for Survival and Longitudinal Data Analysis

Class #: 3748

Course provides a foundation for statistical thinking in clinical and population health research involving time to event data and longitudinal data. Students will learn statistical models used for estimation and inference; understand advanced statistical techniques; and develop modeling strategies and analysis plans for specific research questions.

**Prerequisites:** CTS603A

**Credits:** 4 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Baek, Jonggyu

**Course Director email:** Jonggyu.Baek@umassmed.edu

**Co-Course Director:** Lapane, Kate

**Co-Course Director email:** kate.lapane@umassmed.edu

**Course Administrator:** Baron, Kelley

**Course Administrator email:** kelley.baron@umassmed.edu

**Class Meeting Information:** Tuesdays & Thursdays 11:00a-12:30p, Wednesdays 3:30p-5p

**Class Meeting Location:** online

**Required Textbooks:** Kleinbaum, D. G., & Klein, M. (2012). Survival analysis: a self-learning text. New York, NY: Springer. ISBN: 978-1441966452 | Fitzmaurice, G. M., Laird, N. M., & Ware, J. H. (2011). Applied Longitudinal Analysis. Hoboken: Wiley. ISBN: 978-0-470-38027-7

**Recommended Textbooks:**

**Additional notes:**

## CTS 609 - Design and Conduct of Clinical Trials

**CANCELLED**

The course considers the scientific and practical considerations in the design and conduct of randomized clinical trials. Topics to be covered include: study design (treatment arms, randomization, study documents); ; confounding and bias; ethical considerations; patient recruitment and retention; interim analysis and safety monitoring; and analysis and reporting. Course objectives will be met through a combination of readings, lectures, discussion groups, quizzes, and tests.

**Prerequisites:** ICTS605A or permission from instructor

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Barton, Bruce

**Course Director email:** bruce.barton@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Wednesday 1pm-3pm

**Class Meeting Location:** online

**Required Textbooks:** Fundamentals of Clinical Trials 5th edition. Lawrence M. Friedman, Curt D. Furberg, David L. DeMets, David M. Reboussin, Christopher B. Granger. Edition: 5th ed. 2015. ISBN: 978-3-3193-0773-2

**Recommended Textbooks:** Clinical Trials: A Methodologic Perspective 3rd Edition. Steven Piantadosi. Edition: 3rd Edition. 2017. ISBN: 978-1-1189-5920-6

**Additional notes:** Statistical software will also be required and discussed in Syllabus.

## CTS 611 - Scientific Writing

Class #: 4387

This course teaches students how to develop a peer reviewed scientific manuscript, through the review of elements of style, authorship and extent of information that needs to be incorporated into a scientific research paper. Students will learn how to develop the elements that go into a successful scientific manuscript, submit an article for peer review and respond to reviewers' concerns. During each session, students will critique the work of others enrolled in the course to obtain hands on experience in the write-up of the introduction, methods, results and discussion sections of a manuscript. This course will also teach students how to put together a successful oral, as well as poster, scientific presentation.

**Prerequisites:** None

**Credits:** 3 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Goldberg, Robert

**Course Director email:** robert.goldberg@umassmed.edu

**Co-Course Director:** Lapane, Kate

**Co-Course Director email:** kate.lapane@umassmed.edu

**Course Administrator:** Baron, Kelley and Riley, Julie

**Course Administrator email:** kelley.baron@umassmed.edu, Julie.riley@umassmed.edu

**Class Meeting Information:** Monday 9am-10am

**Class Meeting Location:** online

**Required Textbooks:** Byrne, D. W. (1998). Publishing your medical research paper: What they dont teach in medical school. Baltimore: Williams & Wilkins. ISBN: 0-683-30074-1 Browner, W. S. (2006). Publishing and presenting clinical research. Philadelphia, PA: Lippincott Willia

**Recommended Textbooks:**

**Additional notes:**

## CTS 711 - Advanced Topics in Epidemiology

Class #: 4529

Course will cover a focused set of issues in advanced epidemiology relating to current hot topics (e.g. health disparities). Skills will be developed in the practical and scientific issues as well as analysis plans and presentation of results.

**Prerequisites:** CTS602A, CTS602B, CTS603A, CTS603B, or permission from instructor

**Credits:** 3 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Forrester, Sarah

**Course Director email:** Sarah.Forrester@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Monday 2pm-4pm

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 727 - Use of Existing Population-Based Public Health and Health Care Data

Class #: 4251

Students will become familiar with existing population-based public health, electronic medical record and claims data. Topics include advantages and disadvantages, complex sampling and weighting, and obtaining limited-access data. Using a population-based dataset, students will develop and implement an analytic plan to answer a research question of their choosing.

**Prerequisites:** At least one semester each of epidemiology and biostatistics or permission of the course director

**Credits:** 2 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Liu, ShaoHsien

**Course Director email:** ShaoHsien.Liu@umassmed.edu

**Co-Course Director:** Lapane, Kate

**Co-Course Director email:** kate.lapane@umassmed.edu

**Course Administrator:** Baron, Kelley

**Course Administrator email:** kelley.baron@umassmed.edu

**Class Meeting Information:** Wednesday 9am - 11 am

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 732 - Qualitative Methods for Health Research

Class #: 4590

This course examines uses of qualitative methods in mixed-qualitative or mixed-qualitative/quantitative health studies. Essential qualitative research components are explored: study community, theory, rigor, research questions, data collection methods, writing open-ended questions, sampling, data analysis, publishing and writing proposals. Students apply concepts covered in class by collecting data for written assignments.

**Prerequisites:** None

**Credits:** 2 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Dube, Catherine

**Course Director email:** catherine.dube@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:** Baron, Kelley

**Course Administrator email:** kelley.baron@umassmed.edu

**Class Meeting Information:** Thursday 1pm-3pm

**Class Meeting Location:** online

**Required Textbooks:** Qualitative Research: Bridging the Conceptual, Theoretical, and Methodological .

Sharon M. Ravitch, Nicole C. Mittenfelner, Carl. ISBN-13: 978-1483351742

ISBN-10: 1483351742

**Recommended Textbooks:**

**Additional notes:**

## CTS 733 - Pharmacoepidemiology

**CANCELLED**

The purpose of this class is to learn pharmacoepidemiology, including: rigorous methodologic approaches to the measurement of medication exposure, adherence and adverse events; pharmacoepidemiologic study design; choices for pharmacoepidemiology data resources; and the role of quality of life measurements and pharmacoeconomics.

**Prerequisites:** CTS 602A or equivalent

**Credits:** 2 | **Grading:** Letter

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Alcusky, Matthew

**Course Director email:** matthew.alcusky@umassmed.edu

**Co-Course Director:** Nunes, Anthony

**Co-Course Director email:** anthony.nunes@umassmed.edu

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Monday 11am-1pm

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:** Strom, B. L., Kimmel, S. E., & Hennessy, S. (2013). Textbook of pharmacoepidemiology. Chichester, West Sussex: Wiley Blackwell. ISBN: 978-1118344866

**Additional notes:**

## CTS 799 - Independent Study

**Class #: See Class Number List**

The purpose of an independent study elective is to gain in depth knowledge of a specific topic by working closely with a faculty member with expertise in that area. Typically independent studies cover areas not addressed in the core curriculum and advanced topics or other electives. However, the level of effort and objectives for an independent study must be equivalent to that of a regular three-credit course. The student and sponsoring faculty member must propose a framework and outcome for the independent study, in the semester prior to the semester in which the student will be enrolled, to the program director for prior approval.

**Prerequisites:** Permission of Associate Dean for CPHR & course coordinator.

**Credits:** 1-6 (variable) | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Lapane, Kate

**Course Director email:** kate.lapane@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Please contact course director for meeting information

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 802 - Journal Club

Class #: 3724

This journal club provides a forum in which students will discuss current articles in the peer reviewed literature and will be introduced to advanced epidemiologic and analytic methods. Through readings, presentations and discussion, students will deepen their understanding of methods critical for clinical investigation and strengthen their data presentation and writing skills.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Goldberg, Robert

**Course Director email:** robert.goldberg@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:** Varies

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:** Requires attendance at seminars and presentations to be announced

## CTS 850 - Research Assistantship

Class #: See Class Number List

Research rotations are defined periods of research experience under the direction of a faculty member. They are intended to familiarize the student with the theory, background, concepts and techniques in several areas of research and to assist the student in evaluating projects and areas that might be developed into a dissertation project. The student will participate in an ongoing research project; gain familiarity with a field of study; acquire a working knowledge of techniques used in the research; and write a report and make an oral presentation on the results of their work.

**Prerequisites:** None

**Credits:** 4 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research

**Course Director:** Student's advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 860A - Written Qualifying Exam

Class #: 4064

This course number is used for students sitting for the written qualifying exam—an evaluation milestone typically conducted in Spring of their second year of graduate study.

**Prerequisites:**

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research

**Course Director:** Lapane, Kate

**Course Director email:** kate.lapane@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 860B - Oral Qualifying Exam

Class #: 3868

This course number is used for students who will defend their dissertation proposal. Students should register for this either in the Spring or Summer of their second year of graduate studies.

**Prerequisites:**

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research

**Course Director:** Lapane, Kate

**Course Director email:** kate.lapane@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 865 - CTS TRAC Meeting

Class #: 3886

All graduate students are required to have a TRAC meeting each academic year in the Fall. After passing their Qualifying Exam in January of the second year, and the Thesis Proposal Defense in the Spring or Summer of second year, students are required to register for this course each Fall semester until their Dissertation Examination Committee is formed.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Lapane, Kate

**Course Director email:** kate.lapane@umassmed.edu

**Co-Course Director:** Goldberg, Robert

**Co-Course Director email:** robert.goldberg@umassmed.edu

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 870 - Pre-Thesis Research

Class #: AUTO REGISTERD

This course is for students who have selected a program and thesis advisor but who have not yet passed their Qualifying Examination.

**Prerequisites:** None

**Credits:** Variable | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 875 - Grant Writing

Class #: 3834

The purpose of this course is to allow students, post-doctoral fellows, residents and junior faculty to gain experience writing NIH-style grant proposals in a systematic fashion under faculty guidance. The course is designed to walk the student through each of the NIH grant proposal requirements. The course will include detailed overviews of the grant process, participation in a mock proposal review session and the completion of each of the written scientific components of an NIH grant. For Ph.D. students, the course serves as a basis for developing the dissertation proposal, which will be in the format of an NIH proposal. Students are expected to involve their mentors and mentorship teams in decision making and receive their input throughout the semester.

**Prerequisites:** CTS702, CTS602A, CTS603A or permission of instructor

**Credits:** 3 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Lapane, Kate

**Course Director email:** [kate.lapane@umassmed.edu](mailto:kate.lapane@umassmed.edu)

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:** Baron, Kelley and Rile,  
Julie

**Course Administrator email:** [kelley.baron@umassmed.edu](mailto:kelley.baron@umassmed.edu)  
and [julie.riley@umassmed.edu](mailto:julie.riley@umassmed.edu)

**Class Meeting Information:** Tuesday 9am-11am

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 900 - Thesis Research

Class #: AUTO REGISTERED

Students register for Thesis Research after passing a Qualifying Examination. They will take Thesis Research each semester until they have accumulated 90 credits.

**Prerequisites:** None

**Credits:** Variable | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## CTS 990 - Graduate Research

**Class #: AUTO REGISTERED**

Students register for Graduate Research after completing the requisite number of credits to meet graduation requirements. They will take this course each semester until they complete all remaining requirements.

**Prerequisites:** None

**Credits:** 0 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** Clinical & Population Health Research, MS Clinical Investigation

**Course Director:** Student's thesis advisor

**Course Director email:** N/A

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## MD/PhD Courses

### **MDP 740A - Developing Solutions To Research Problems A - Year One**

**Class #: AUTO REGISTERED**

**Course Goals:** The goal for the course is to engage MD-PhD students in the critical thinking skills required to perform biomedical research, in a manner that enables their intellectual contribution to the University's academic and research functions. The course will examine specific questions of relevance in medicine, and explore how these questions are addressed from multiple scientific perspectives, (e.g., epidemiological, population based, animal model research, cellular and molecular mechanisms). The course will be mostly based on critical analysis of primary literature. Faculty will provide brief background material in the form of lectures, to enable analysis of the primary research papers. Students will discuss papers in small teams and within the whole group. Each section will culminate with the presentation by students of an original research proposal on the specific question being studied.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Corvera, Silvia

**Course Director email:** [silvia.corvera@umassmed.edu](mailto:silvia.corvera@umassmed.edu)

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## **MDP 740B - Developing Solutions To Research Problems B - Year Two**

**Class #: See Class Number List**

The goal for the course is to engage MD-PhD students in the critical thinking skills required to perform biomedical research, in a manner that enables their intellectual contribution to the University's academic and research functions. It will enhance understanding of the continuum of research that is required for advancement of medicine and health, and of quantitative approaches that enable such research. Topics range from basic science insights on the pathogenesis of disease to examining the quality of health care, health care outcomes, health care disparities and health policy. The course is divided into 2 sections: Section 1 is a computational skills bootcamp based on R, which includes data types, data structures, data visualization, supervised and unsupervised machine learning and basic statistics. Section 1 culminates with a data science competition where teams with the best predictive model derived from a de-identified clinical data set are awarded. Section 2 explores rigor and reproducibility in research and includes analysis of published articles and re-analysis of accompanying data sets to compare alternative approaches and define the strength of conclusions. Both sections include team-based project development and presentation. Course is combined class of MD/PhD students and medical students in the Clinical and Translational Research Pathway (CTRP) in the School of Medicine.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Corvera, Silvia

**Co-Course Director:**

**Course Administrator:**

**Course Director email:**

silvia.corvera@umassmed.edu

**Co-Course Director email:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## MDP 740C - Developing Solutions To Research Problems C - Year Three

**Class #: AUTO REGISTERED**

**Course Goals:** The goal for the course is to expose MD-PhD students to areas of basic and translational research, and to the knowledge skills necessary to conduct research in these areas in a manner that enables their intellectual contribution to the University's academic and research functions. To meet this goal, the student will work directly with a selected member of the research faculty, which can include but is not limited to their PhD thesis mentor, for a minimum of one hour per week over the course of the semester (15 hours total). They will discuss experimental strategies to address questions of basic, clinical, and/or translation importance. These can include, but are not limited to, work that advances the student's personal research toward publication or presentation.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Corvera, Silvia

**Course Director email:** [silvia.corvera@umassmed.edu](mailto:silvia.corvera@umassmed.edu)

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## MDP 741 - Introduction to Translational Medicine

**Class #: AUTO REGISTERED**

**Course Goals:** The MD/PhD program stresses the importance of clinical involvement throughout the graduate years. The first goal of this course is to provide students with a continuous link to clinical skills and to familiarize students with different clinical settings. Sessions should reinforce clinical skills learned from the first two years of the medical curriculum plus the 16 weeks of clerkship in Care of Family and Care of Adults prior to research studies. The second goal is to introduce clinicians and potential mentors to the MD/PhD students. The third goal of this section of the course is to ease the transition back to the clinical years of medical school. Students are encouraged to work with physician scientists that will help them to get hands-on experience with the day-to-day work of physician scientists.

**Prerequisites:** Open only to MD/PhD Students in PhD Portion of Degree

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Corvera, Silvia

**Course Director email:** [silvia.corvera@umassmed.edu](mailto:silvia.corvera@umassmed.edu)

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## MDP 800 - MD/PhD Seminar

Class #: 4119

This is a weekly 2h event with participation required for all years in the program. The students develop stage-appropriate clinical diagnostic skills, research presentation skills, and career development skills. Emphasis is on understanding all factors contributing to disease, including molecular, cellular, pharmacological and epidemiological, as well as social determinants of health and health disparities. Areas of current or necessary research are emphasized. Each session includes faculty and student contributions.

**Prerequisites:** None

**Credits:** 1 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Michelson, Anne

**Course Director email:** anne.michelson@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**

## MDP 990 - MD/PhD Graduate Research for Students Post-Dissertation

Class #: AUTO REGISTERED

Students enrolled in the MD/PHD Program who have completed their requirements for the PhD degree will register for this GSBS course each semester while completing their School of Medicine requirements. Students enrolled in this course will participate in and assist with the teaching/evaluation of the MDP Seminar course (MDP800). This course is the MD/PhD equivalent of the GSBS course - GR900, Graduate Research. All students must be in good standing in the MD/PhD program to pass.

**Prerequisites:** Completion of all the PhD requirements in the Graduate School of Biomedical Sciences.

**Credits:** 0 | **Grading:** Pass/Marginal Pass/Fail

**Associated Program(s):** MD/PhD

**Course Director:** Michelson, Anne

**Course Director email:** anne.michelson@umassmed.edu

**Co-Course Director:**

**Co-Course Director email:**

**Course Administrator:**

**Course Administrator email:**

**Class Meeting Information:**

**Class Meeting Location:** online

**Required Textbooks:**

**Recommended Textbooks:**

**Additional notes:**



## CLASS NUMBERS

### Basic & Biomedical Sciences Non-Research Class Numbers

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
4530	BBS	717	1	Structural Biology	Kelch	Brian
2045	BBS	719	1	Cellular Biochemistry	Thompson	Paul
2131	BBS	725	1	Cancer Biology and Medicine	Mercurio	Arthur
1009	BBS	755	1	Infection and Immune Response	Kowalik	Timothy
1629	BBS	755A	1	Introduction to Immunology	Kowalik	Timothy
1631	BBS	755B	1	Introduction to Bacteriology	Kowalik	Timothy
1633	BBS	755C	1	Introduction to Virology	Kowalik	Timothy
1635	BBS	760	1	Introduction to Neuroscience	Rittenhouse	Ann
4571	BBS	761	1	Systems Biology of Cell Cycl	Rhind	Nicholas
1929	BBS	786	1	Molecular Basis of Disease	Mandrekar	Pranoti
1637	BBS	810	1	Grad. Student Seminar Series	Rhind	Nicholas
1639	BBS	834	1	Immunobio & Virology Spr Sem	Silverman	Neal
1967	BBS	848	1	Tutorial in Neuroscience	Weaver	David

### Basic & Biomedical Sciences Research Class Numbers

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
4474	BBS	550	L1	Laboratory Rotation (PREP)	Bolon	Daniel
4531	BBS	550	L1	Laboratory Rotation (PREP)	Bosco	Daryl
4533	BBS	550	L1	Laboratory Rotation (PREP)	Han	Gang
4535	BBS	550	L1	Laboratory Rotation (PREP)	Kim	Dohoon
4537	BBS	550	L1	Laboratory Rotation (PREP)	Levitz	Stuart
4539	BBS	550	L1	Laboratory Rotation (PREP)	Massi	Francesca
4541	BBS	550	L1	Laboratory Rotation (PREP)	Shaw	Leslie
4543	BBS	550	L1	Laboratory Rotation (PREP)	Zhang	Hong
4475	BBS	550	L2	Laboratory Rotation (PREP)	Bolon	Daniel
4532	BBS	550	L2	Laboratory Rotation (PREP)	Bosco	Daryl
4534	BBS	550	L2	Laboratory Rotation (PREP)	Han	Gang
4536	BBS	550	L2	Laboratory Rotation (PREP)	Kim	Dohoon
4538	BBS	550	L2	Laboratory Rotation (PREP)	Levitz	Stuart
4540	BBS	550	L2	Laboratory Rotation (PREP)	Massi	Francesca
4542	BBS	550	L2	Laboratory Rotation (PREP)	Shaw	Leslie
4544	BBS	550	L2	Laboratory Rotation (PREP)	Zhang	Hong
1937	BBS	870	1	Prequalifying Research	Alkema	Mark
1923	BBS	870	1	Prequalifying Research	Alonso	Laura
1939	BBS	870	1	Prequalifying Research	Ambros	Victor
2073	BBS	870	1	Prequalifying Research	ANACLET	Christelle
1999	BBS	870	1	Prequalifying Research	Aroian	Raffi
1119	BBS	870	1	Prequalifying Research	Aronin	Neil

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
2137	BBS	870	1	Prequalifying Research	Bach	Ingolf
1121	BBS	870	1	Prequalifying Research	Baehrecke	Eric
1755	BBS	870	1	Prequalifying Research	Bailey	Jeffrey
1953	BBS	870	1	Prequalifying Research	Behar	Samuel
1777	BBS	870	1	Prequalifying Research	Benanti	Jennifer
1717	BBS	870	1	Prequalifying Research	Benard	Claire
1123	BBS	870	1	Prequalifying Research	Berg	Leslie
1933	BBS	870	1	Prequalifying Research	Bergmann	Andreas
2163	BBS	870	1	Prequalifying Research	BOGUNOVIC	Milena
1125	BBS	870	1	Prequalifying Research	Bolon	Daniel
1651	BBS	870	1	Prequalifying Research	Bosco	Daryl
1703	BBS	870	1	Prequalifying Research	Boyer	Edward
1699	BBS	870	1	Prequalifying Research	Brehm	Michael
2009	BBS	870	1	Prequalifying Research	Brewster	Robert
4496	BBS	870	1	Prequalifying Research	Brodsky	Michael
1663	BBS	870	1	Prequalifying Research	Brown	Robert
4435	BBS	870	1	Prequalifying Research	BUCCI	Vanni
1127	BBS	870	1	Prequalifying Research	Budnik	Vivian
2047	BBS	870	1	Prequalifying Research	BYRNE	Alexandra Catherine
1129	BBS	870	1	Prequalifying Research	Cantor	Sharon
1131	BBS	870	1	Prequalifying Research	Castilla	Lucio
2033	BBS	870	1	Prequalifying Research	Cavacini	Lisa
1749	BBS	870	1	Prequalifying Research	Ceol	Craig
1133	BBS	870	1	Prequalifying Research	CHAN	Francis Ka Ming
1135	BBS	870	1	Prequalifying Research	Clapham	Paul
1137	BBS	870	1	Prequalifying Research	Clark	Robin
1729	BBS	870	1	Prequalifying Research	Cooper	Marcus
1139	BBS	870	1	Prequalifying Research	Corvera	Silvia
1141	BBS	870	1	Prequalifying Research	CZECH	Michael Paul
1143	BBS	870	1	Prequalifying Research	Davis	Roger
1145	BBS	870	1	Prequalifying Research	Dekker	Job
1147	BBS	870	1	Prequalifying Research	EMERY	Patrick
1775	BBS	870	1	Prequalifying Research	Fazzio	Thomas
1149	BBS	870	1	Prequalifying Research	Finberg	Robert
1151	BBS	870	1	Prequalifying Research	Fitzgerald	Katherine
2169	BBS	870	1	Prequalifying Research	FITZGERALD	Thomas
4510	BBS	870	1	Prequalifying Research	Flavahan	William
1153	BBS	870	1	Prequalifying Research	Flotte	Terence
1155	BBS	870	1	Prequalifying Research	Francis	Michael
1861	BBS	870	1	Prequalifying Research	FREEDMAN	Jane
1825	BBS	870	1	Prequalifying Research	Futai	Kensuke
1769	BBS	870	1	Prequalifying Research	Gao	Fen-Biao

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1159	BBS	870	1	Prequalifying Research	Gao	Guangping
1901	BBS	870	1	Prequalifying Research	Garber	Manuel
1157	BBS	870	1	Prequalifying Research	Gardner	Paul
1161	BBS	870	1	Prequalifying Research	GOLDBERG	Robert Joel
1163	BBS	870	1	Prequalifying Research	Golenbock	Douglas
1165	BBS	870	1	Prequalifying Research	Gottlinger	Heinrich
1167	BBS	870	1	Prequalifying Research	Gravallese	Ellen
2175	BBS	870	1	Prequalifying Research	GRAYEDWARDS	Heather Leigh
1169	BBS	870	1	Prequalifying Research	Green	Michael
2103	BBS	870	1	Prequalifying Research	GREER	Paul Lieberman
1171	BBS	870	1	Prequalifying Research	Greiner	Dale
1899	BBS	870	1	Prequalifying Research	Grunwald	David
1735	BBS	870	1	Prequalifying Research	Guertin	David
1819	BBS	870	1	Prequalifying Research	Han	Gang
1829	BBS	870	1	Prequalifying Research	Harris	John
2053	BBS	870	1	Prequalifying Research	Haynes	Cole
1173	BBS	870	1	Prequalifying Research	Hayward	Lawrence
2153	BBS	870	1	Prequalifying Research	Henninger	Nils
1175	BBS	870	1	Prequalifying Research	Huseby	Eric
1177	BBS	870	1	Prequalifying Research	Imbalzano	Anthony
1179	BBS	870	1	Prequalifying Research	Ip	Yicktung
2071	BBS	870	1	Prequalifying Research	IRAZOQUI	Javier Elbio
1181	BBS	870	1	Prequalifying Research	Jacobson	Allan
2155	BBS	870	1	Prequalifying Research	JOHNSON	Mark Damone
1183	BBS	870	1	Prequalifying Research	Jones	Stephen
1185	BBS	870	1	Prequalifying Research	Kang	Joonsoo
2001	BBS	870	1	Prequalifying Research	Karlsson	Elinor
1187	BBS	870	1	Prequalifying Research	Kaufman	Paul
1955	BBS	870	1	Prequalifying Research	Kelch	Brian
1189	BBS	870	1	Prequalifying Research	Kelliher	Michelle
1827	BBS	870	1	Prequalifying Research	Kennedy	David
1817	BBS	870	1	Prequalifying Research	Khanna	Hemant
1003	BBS	870	1	Prequalifying Research	Khvorova	Anastasia
2035	BBS	870	1	Prequalifying Research	Kim	Dohoon
1649	BBS	870	1	Prequalifying Research	Kim	Jason
1191	BBS	870	1	Prequalifying Research	King	Jean
1193	BBS	870	1	Prequalifying Research	Kobertz	William
1195	BBS	870	1	Prequalifying Research	Kornfeld	Hardy
1767	BBS	870	1	Prequalifying Research	Korostelev	Andrei
4509	BBS	870	1	Prequalifying Research	Koupenova-Zamor	Milka
1197	BBS	870	1	Prequalifying Research	Kowalik	Timothy
1199	BBS	870	1	Prequalifying Research	Kurt-Jones	Evelyn

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1719	BBS	870	1	Prequalifying Research	Landers	John
1219	BBS	870	1	Prequalifying Research	Lawrence	Jeanne
1221	BBS	870	1	Prequalifying Research	Lawson	Nathan
1961	BBS	870	1	Prequalifying Research	Lee	Michael
1223	BBS	870	1	Prequalifying Research	Lee	Tzumin
1225	BBS	870	1	Prequalifying Research	Levitz	Stuart
1227	BBS	870	1	Prequalifying Research	Lewis	Brian
1229	BBS	870	1	Prequalifying Research	Li	Hong-Sheng
1643	BBS	870	1	Prequalifying Research	Li	Shaoguang
2105	BBS	870	1	Prequalifying Research	Li	Wenjun
1231	BBS	870	1	Prequalifying Research	Libraty	Daniel
1233	BBS	870	1	Prequalifying Research	Lien	Egil
4449	BBS	870	1	Prequalifying Research	Lodato	Michael
1779	BBS	870	1	Prequalifying Research	Lois	Carlos
1235	BBS	870	1	Prequalifying Research	Lu	Shan
1897	BBS	870	1	Prequalifying Research	Luban	Jeremy
1237	BBS	870	1	Prequalifying Research	Luckmann	Roger
1887	BBS	870	1	Prequalifying Research	Maehr	Rene
1685	BBS	870	1	Prequalifying Research	Mandrekar	Pranoti
1665	BBS	870	1	Prequalifying Research	Mao	Junhao
1701	BBS	870	1	Prequalifying Research	Martin	Gilles
1239	BBS	870	1	Prequalifying Research	Massi	Francesca
1241	BBS	870	1	Prequalifying Research	Matthews	Charles
1243	BBS	870	1	Prequalifying Research	McCollum	Dannel
1667	BBS	870	1	Prequalifying Research	McCormick	Beth
1245	BBS	870	1	Prequalifying Research	Melikian	Haley
1247	BBS	870	1	Prequalifying Research	Mello	Craig
1249	BBS	870	1	Prequalifying Research	Mercurio	Arthur
1251	BBS	870	1	Prequalifying Research	Miller	Stephen
2075	BBS	870	1	Prequalifying Research	MITCHELL	Amir Zadok
1253	BBS	870	1	Prequalifying Research	Moore	Melissa
1687	BBS	870	1	Prequalifying Research	Moormann	Ann
1255	BBS	870	1	Prequalifying Research	Morrison	Trudy
1869	BBS	870	1	Prequalifying Research	Muller	Christian
4478	BBS	870	1	Prequalifying Research	Munro	James
1257	BBS	870	1	Prequalifying Research	Munson	Maryann
1259	BBS	870	1	Prequalifying Research	Newburger	Peter
1261	BBS	870	1	Prequalifying Research	Ockene	Judith
1877	BBS	870	1	Prequalifying Research	Ortiz-Miranda	Sonia
4556	BBS	870	1	Prequalifying Research	ORZALLI	Megan Horn
1787	BBS	870	1	Prequalifying Research	Ostroff	Gary
2125	BBS	870	1	Prequalifying Research	PAI	Athma Anjali

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1263	BBS	870	1	Prequalifying Research	Paydarfar	David
1265	BBS	870	1	Prequalifying Research	Pazour	Gregory
1267	BBS	870	1	Prequalifying Research	Peterson	Craig
1269	BBS	870	1	Prequalifying Research	Pryciak	Peter
2003	BBS	870	1	Prequalifying Research	Pukkila-Worley	Read
1831	BBS	870	1	Prequalifying Research	Punzo	Claudio
1271	BBS	870	1	Prequalifying Research	Ram	Sanjay
1273	BBS	870	1	Prequalifying Research	Rando	Oliver
2051	BBS	870	1	Prequalifying Research	REBOLDI	Andrea
1275	BBS	870	1	Prequalifying Research	Rhind	Nicholas
1277	BBS	870	1	Prequalifying Research	Richter	Joel
1279	BBS	870	1	Prequalifying Research	Rivera Perez	Jaime
1281	BBS	870	1	Prequalifying Research	Rock	Kenneth
2107	BBS	870	1	Prequalifying Research	Rogaev	Evgeny
1283	BBS	870	1	Prequalifying Research	Ross	Alonzo
1747	BBS	870	1	Prequalifying Research	Rothstein	Ann
1285	BBS	870	1	Prequalifying Research	Royer	William
1287	BBS	870	1	Prequalifying Research	Ruiz De Luzuriaga	Katherine
4508	BBS	870	1	Prequalifying Research	RUSCETTI	Marcus
1311	BBS	870	1	Prequalifying Research	Ryder	Sean
1313	BBS	870	1	Prequalifying Research	Sagerstrom	Charles
1315	BBS	870	1	Prequalifying Research	Sassetti	Christopher
4557	BBS	870	1	Prequalifying Research	Schaal	Shlomit
2011	BBS	870	1	Prequalifying Research	Schafer	Dorothy
1317	BBS	870	1	Prequalifying Research	Schiffer	Celia
1333	BBS	870	1	Prequalifying Research	Selin	Liisa
1741	BBS	870	1	Prequalifying Research	Sena Esteves	Miguel
4558	BBS	870	1	Prequalifying Research	Shank	Elizabeth
1319	BBS	870	1	Prequalifying Research	Shaw	Leslie
2189	BBS	870	1	Prequalifying Research	SHEN	Kuang
2049	BBS	870	1	Prequalifying Research	Shim	Jae-Hyuck
2121	BBS	870	1	Prequalifying Research	SHOHET	Jason Matthew
1321	BBS	870	1	Prequalifying Research	Silverman	Neal
1323	BBS	870	1	Prequalifying Research	Sluder	Greenfield
1325	BBS	870	1	Prequalifying Research	Socolovsky	Merav
1327	BBS	870	1	Prequalifying Research	Song	Jie
2005	BBS	870	1	Prequalifying Research	Sontheimer	Erik
1329	BBS	870	1	Prequalifying Research	Stein	Gary
1331	BBS	870	1	Prequalifying Research	Stern	Lawrence
1867	BBS	870	1	Prequalifying Research	Swain	Susan
1357	BBS	870	1	Prequalifying Research	Szabo	Gyongyi
1641	BBS	870	1	Prequalifying Research	Tapper	Andrew

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1359	BBS	870	1	Prequalifying Research	Theurkauf	William
2007	BBS	870	1	Prequalifying Research	Thompson	Paul
2181	BBS	870	1	Prequalifying Research	Thomson	Travis
1361	BBS	870	1	Prequalifying Research	Tissenbaum	Heidi
1785	BBS	870	1	Prequalifying Research	Torres	Eduardo
1911	BBS	870	1	Prequalifying Research	Trivedi	Chinmay
1363	BBS	870	1	Prequalifying Research	Walhout	Albertha
1913	BBS	870	1	Prequalifying Research	Walker	Amy
1793	BBS	870	1	Prequalifying Research	Wang	Jennifer
1795	BBS	870	1	Prequalifying Research	Waring	Molly
2027	BBS	870	1	Prequalifying Research	Watts	Jonathan
1365	BBS	870	1	Prequalifying Research	Weaver	David
1367	BBS	870	1	Prequalifying Research	Welsh	Raymond
1369	BBS	870	1	Prequalifying Research	Weng	Zhiping
1371	BBS	870	1	Prequalifying Research	Wolfe	Scot
1373	BBS	870	1	Prequalifying Research	Woodland	Robert
1761	BBS	870	1	Prequalifying Research	Xiang	Yang
1375	BBS	870	1	Prequalifying Research	Xu	Zuoshang
1973	BBS	870	1	Prequalifying Research	Xue	Wen
4559	BBS	870	1	Prequalifying Research	YOUK	Hyun
2091	BBS	870	1	Prequalifying Research	Yu	Hong
1377	BBS	870	1	Prequalifying Research	Zamore	Phillip
1661	BBS	870	1	Prequalifying Research	Zeldovich	Konstantin
1379	BBS	870	1	Prequalifying Research	Zhang	Hong
4560	BBS	870	1	Prequalifying Research	ZHOU	Chan
1381	BBS	870	1	Prequalifying Research	ZHUGE	Ronghua
1117	BBS	870	1	Prequalifying Research	Ziedonis	Douglas
2109	BBS	870	1	Prequalifying Research	Zitzewitz	Jill
1941	BBS	900	1	Thesis Research	Alkema	Mark
1925	BBS	900	1	Thesis Research	Alonso	Laura
1943	BBS	900	1	Thesis Research	Ambros	Victor
2079	BBS	900	1	Thesis Research	ANACLET	Christelle
1989	BBS	900	1	Thesis Research	Aroian	Raffi
1013	BBS	900	1	Thesis Research	Aronin	Neil
2139	BBS	900	1	Thesis Research	Bach	Ingolf
1015	BBS	900	1	Thesis Research	Baehrecke	Eric
1757	BBS	900	1	Thesis Research	Bailey	Jeffrey
1969	BBS	900	1	Thesis Research	Behar	Samuel
1809	BBS	900	1	Thesis Research	Benanti	Jennifer
1721	BBS	900	1	Thesis Research	Benard	Claire
1017	BBS	900	1	Thesis Research	Berg	Leslie
1931	BBS	900	1	Thesis Research	Bergmann	Andreas

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2165	BBS	900	1	Thesis Research	BOGUNOVIC	Milena
1019	BBS	900	1	Thesis Research	Bolon	Daniel
1655	BBS	900	1	Thesis Research	Bosco	Daryl
2119	BBS	900	1	Thesis Research	Boudreaux	Edwin
1715	BBS	900	1	Thesis Research	Boyer	Edward
1711	BBS	900	1	Thesis Research	Brehm	Michael
2013	BBS	900	1	Thesis Research	Brewster	Robert
4497	BBS	900	1	Thesis Research	Brodsky	Michael
1671	BBS	900	1	Thesis Research	Brown	Robert
4437	BBS	900	1	Thesis Research	BUCCI	Vanni
1021	BBS	900	1	Thesis Research	Budnik	Vivian
2055	BBS	900	1	Thesis Research	BYRNE	Alexandra Catherine
1023	BBS	900	1	Thesis Research	Cantor	Sharon
1025	BBS	900	1	Thesis Research	Castilla	Lucio
2037	BBS	900	1	Thesis Research	Cavacini	Lisa
1751	BBS	900	1	Thesis Research	Ceol	Craig
1027	BBS	900	1	Thesis Research	CHAN	Francis Ka Ming
1031	BBS	900	1	Thesis Research	Clapham	Paul
1033	BBS	900	1	Thesis Research	Clark	Robin
1731	BBS	900	1	Thesis Research	Cooper	Marcus
1035	BBS	900	1	Thesis Research	Corvera	Silvia
1037	BBS	900	1	Thesis Research	CZECH	Michael Paul
1039	BBS	900	1	Thesis Research	Davis	Roger
1041	BBS	900	1	Thesis Research	Dekker	Job
1043	BBS	900	1	Thesis Research	EMERY	Patrick
1811	BBS	900	1	Thesis Research	Fazzio	Thomas
1045	BBS	900	1	Thesis Research	Finberg	Robert
2135	BBS	900	1	Thesis Research	Fitzgerald	Katherine
2171	BBS	900	1	Thesis Research	FITZGERALD	Thomas
4513	BBS	900	1	Thesis Research	Flavahan	William
1047	BBS	900	1	Thesis Research	Flotte	Terence
1049	BBS	900	1	Thesis Research	Francis	Michael
1863	BBS	900	1	Thesis Research	FREEDMAN	Jane
1051	BBS	900	1	Thesis Research	Freeman	Marc
1821	BBS	900	1	Thesis Research	Futai	Kensuke
1771	BBS	900	1	Thesis Research	Gao	Fen-Biao
1055	BBS	900	1	Thesis Research	Gao	Guangping
1905	BBS	900	1	Thesis Research	Garber	Manuel
1053	BBS	900	1	Thesis Research	Gardner	Paul
1057	BBS	900	1	Thesis Research	GOLDBERG	Robert Joel
1059	BBS	900	1	Thesis Research	Golenbock	Douglas
1061	BBS	900	1	Thesis Research	Gottlinger	Heinrich

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1063	BBS	900	1	Thesis Research	Gravallese	Ellen
2177	BBS	900	1	Thesis Research	GRAYEDWARDS	Heather Leigh
1065	BBS	900	1	Thesis Research	Green	Michael
2111	BBS	900	1	Thesis Research	GREER	Paul Lieberman
1903	BBS	900	1	Thesis Research	Grunwald	David
1737	BBS	900	1	Thesis Research	Guertin	David
1837	BBS	900	1	Thesis Research	Han	Gang
1835	BBS	900	1	Thesis Research	Harris	John
2061	BBS	900	1	Thesis Research	Haynes	Cole
1067	BBS	900	1	Thesis Research	Hayward	Lawrence
2187	BBS	900	1	Thesis Research	Henninger	Nils
1069	BBS	900	1	Thesis Research	Huseby	Eric
1071	BBS	900	1	Thesis Research	Imbalzano	Anthony
1073	BBS	900	1	Thesis Research	Ip	Yicktung
2077	BBS	900	1	Thesis Research	IRAZOQUI	Javier Elbio
1075	BBS	900	1	Thesis Research	Jacobson	Allan
2157	BBS	900	1	Thesis Research	JOHNSON	Mark Damone
1077	BBS	900	1	Thesis Research	Jones	Stephen
1079	BBS	900	1	Thesis Research	Kang	Joonsoo
1991	BBS	900	1	Thesis Research	Karlsson	Elinor
1081	BBS	900	1	Thesis Research	Kaufman	Paul
1957	BBS	900	1	Thesis Research	Kelch	Brian
1417	BBS	900	1	Thesis Research	Kelliher	Michelle
1833	BBS	900	1	Thesis Research	Kennedy	David
1839	BBS	900	1	Thesis Research	Khanna	Hemant
1005	BBS	900	1	Thesis Research	Khvorova	Anastasia
2039	BBS	900	1	Thesis Research	Kim	Dohoon
1653	BBS	900	1	Thesis Research	Kim	Jason
1083	BBS	900	1	Thesis Research	Kobertz	William
1085	BBS	900	1	Thesis Research	Kornfeld	Hardy
1857	BBS	900	1	Thesis Research	Korostelev	Andrei
4512	BBS	900	1	Thesis Research	Koupenova-Zamor	Milka
1087	BBS	900	1	Thesis Research	Kowalik	Timothy
1089	BBS	900	1	Thesis Research	Kurt-Jones	Evelyn
1723	BBS	900	1	Thesis Research	Landers	John
1091	BBS	900	1	Thesis Research	Lawrence	Jeanne
1093	BBS	900	1	Thesis Research	Lawson	Nathan
1963	BBS	900	1	Thesis Research	Lee	Michael
1095	BBS	900	1	Thesis Research	Lee	Tzumin
1097	BBS	900	1	Thesis Research	Levitz	Stuart
1099	BBS	900	1	Thesis Research	Lewis	Brian
1101	BBS	900	1	Thesis Research	Li	Hong-Sheng

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1645	BBS	900	1	Thesis Research	Li	Shaoguang
2113	BBS	900	1	Thesis Research	Li	Wenjun
1103	BBS	900	1	Thesis Research	Libraty	Daniel
1105	BBS	900	1	Thesis Research	Lien	Egil
4451	BBS	900	1	Thesis Research	Lodato	Michael
1781	BBS	900	1	Thesis Research	Lois	Carlos
1107	BBS	900	1	Thesis Research	Lu	Shan
1895	BBS	900	1	Thesis Research	Luban	Jeremy
1109	BBS	900	1	Thesis Research	Luckmann	Roger
1889	BBS	900	1	Thesis Research	Maehr	Rene
1689	BBS	900	1	Thesis Research	Mandrekar	Pranoti
1673	BBS	900	1	Thesis Research	Mao	Junhao
1713	BBS	900	1	Thesis Research	Martin	Gilles
1111	BBS	900	1	Thesis Research	Massi	Francesca
1113	BBS	900	1	Thesis Research	Matthews	Charles
1115	BBS	900	1	Thesis Research	McCollum	Dannel
1675	BBS	900	1	Thesis Research	McCormick	Beth
1201	BBS	900	1	Thesis Research	Melikian	Haley
1203	BBS	900	1	Thesis Research	Mello	Craig
1205	BBS	900	1	Thesis Research	Mercurio	Arthur
1207	BBS	900	1	Thesis Research	Miller	Stephen
2081	BBS	900	1	Thesis Research	MITCHELL	Amir Zadok
1879	BBS	900	1	Thesis Research	Moore	Constance
1209	BBS	900	1	Thesis Research	Moore	Melissa
1691	BBS	900	1	Thesis Research	Moormann	Ann
1211	BBS	900	1	Thesis Research	Morrison	Trudy
1871	BBS	900	1	Thesis Research	Muller	Christian
4480	BBS	900	1	Thesis Research	Munro	James
1213	BBS	900	1	Thesis Research	Munson	Maryann
1215	BBS	900	1	Thesis Research	Newburger	Peter
1217	BBS	900	1	Thesis Research	Ockene	Judith
1881	BBS	900	1	Thesis Research	Ortiz-Miranda	Sonia
4561	BBS	900	1	Thesis Research	ORZALLI	Megan Horn
1789	BBS	900	1	Thesis Research	Ostroff	Gary
2127	BBS	900	1	Thesis Research	PAI	Athma Anjali
1289	BBS	900	1	Thesis Research	Paydarfar	David
1291	BBS	900	1	Thesis Research	Pazour	Gregory
1293	BBS	900	1	Thesis Research	Peterson	Craig
1295	BBS	900	1	Thesis Research	Pryciak	Peter
1993	BBS	900	1	Thesis Research	Pukkila-Worley	Read
1841	BBS	900	1	Thesis Research	Punzo	Claudio
1297	BBS	900	1	Thesis Research	Ram	Sanjay

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1299	BBS	900	1	Thesis Research	Rando	Oliver
2059	BBS	900	1	Thesis Research	REBOLDI	Andrea
1301	BBS	900	1	Thesis Research	Rhind	Nicholas
1303	BBS	900	1	Thesis Research	Richter	Joel
1305	BBS	900	1	Thesis Research	Rivera Perez	Jaime
1307	BBS	900	1	Thesis Research	Rock	Kenneth
2115	BBS	900	1	Thesis Research	Rogaev	Evgeny
1309	BBS	900	1	Thesis Research	Ross	Alonzo
1797	BBS	900	1	Thesis Research	Rothstein	Ann
1335	BBS	900	1	Thesis Research	Royer	William
1337	BBS	900	1	Thesis Research	Ruiz De Luzuriaga	Katherine
4511	BBS	900	1	Thesis Research	RUSCETTI	Marcus
1339	BBS	900	1	Thesis Research	Ryder	Sean
1341	BBS	900	1	Thesis Research	Sagerstrom	Charles
1343	BBS	900	1	Thesis Research	Sassetti	Christopher
4562	BBS	900	1	Thesis Research	Schaal	Shlomit
2015	BBS	900	1	Thesis Research	Schafer	Dorothy
1345	BBS	900	1	Thesis Research	Schiffer	Celia
1347	BBS	900	1	Thesis Research	Selin	Liisa
1743	BBS	900	1	Thesis Research	Sena Esteves	Miguel
4563	BBS	900	1	Thesis Research	Shank	Elizabeth
1349	BBS	900	1	Thesis Research	Shaw	Leslie
2191	BBS	900	1	Thesis Research	SHEN	Kuang
2057	BBS	900	1	Thesis Research	Shim	Jae-Hyuck
2123	BBS	900	1	Thesis Research	SHOHET	Jason Matthew
1351	BBS	900	1	Thesis Research	Silverman	Neal
1353	BBS	900	1	Thesis Research	Sluder	Greenfield
1355	BBS	900	1	Thesis Research	Socolovsky	Merav
1383	BBS	900	1	Thesis Research	Song	Jie
1995	BBS	900	1	Thesis Research	Sontheimer	Erik
1385	BBS	900	1	Thesis Research	Stein	Gary
1387	BBS	900	1	Thesis Research	Stern	Lawrence
1843	BBS	900	1	Thesis Research	Swain	Susan
1389	BBS	900	1	Thesis Research	Szabo	Gyongyi
1391	BBS	900	1	Thesis Research	Tapper	Andrew
1393	BBS	900	1	Thesis Research	Theurkauf	William
1997	BBS	900	1	Thesis Research	Thompson	Paul
2183	BBS	900	1	Thesis Research	Thomson	Travis
1395	BBS	900	1	Thesis Research	Tissenbaum	Heidi
1029	BBS	900	1	Thesis Research	Torres	Eduardo
1945	BBS	900	1	Thesis Research	Trivedi	Chinmay
1397	BBS	900	1	Thesis Research	Walhout	Albertha

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
1915	BBS	900	1	Thesis Research	Walker	Amy
1799	BBS	900	1	Thesis Research	Wang	Jennifer
1801	BBS	900	1	Thesis Research	Waring	Molly
2029	BBS	900	1	Thesis Research	Watts	Jonathan
1399	BBS	900	1	Thesis Research	Weaver	David
1401	BBS	900	1	Thesis Research	Welsh	Raymond
1403	BBS	900	1	Thesis Research	Weng	Zhiping
1405	BBS	900	1	Thesis Research	Wolfe	Scot
1407	BBS	900	1	Thesis Research	Woodland	Robert
1763	BBS	900	1	Thesis Research	Xiang	Yang
1409	BBS	900	1	Thesis Research	Xu	Zuoshang
1975	BBS	900	1	Thesis Research	Xue	Wen
4564	BBS	900	1	Thesis Research	YOUK	Hyun
2093	BBS	900	1	Thesis Research	Yu	Hong
1411	BBS	900	1	Thesis Research	Zamore	Phillip
1669	BBS	900	1	Thesis Research	Zeldovich	Konstantin
1413	BBS	900	1	Thesis Research	Zhang	Hong
4565	BBS	900	1	Thesis Research	ZHOU	Chan
1415	BBS	900	1	Thesis Research	ZHUGE	Ronghua
1011	BBS	900	1	Thesis Research	Ziedonis	Douglas
2117	BBS	900	1	Thesis Research	Zitzewitz	Jill
1947	BBS	990	1	Graduate Research	Alkema	Mark
1927	BBS	990	1	Graduate Research	Alonso	Laura
1949	BBS	990	1	Graduate Research	Ambros	Victor
2085	BBS	990	1	Graduate Research	ANACLET	Christelle
1979	BBS	990	1	Graduate Research	Aroian	Raffi
1421	BBS	990	1	Graduate Research	Aronin	Neil
2141	BBS	990	1	Graduate Research	Bach	Ingolf
1423	BBS	990	1	Graduate Research	Baehrecke	Eric
1759	BBS	990	1	Graduate Research	Bailey	Jeffrey
1971	BBS	990	1	Graduate Research	Behar	Samuel
1813	BBS	990	1	Graduate Research	Benanti	Jennifer
1725	BBS	990	1	Graduate Research	Benard	Claire
1425	BBS	990	1	Graduate Research	Berg	Leslie
1935	BBS	990	1	Graduate Research	Bergmann	Andreas
2167	BBS	990	1	Graduate Research	BOGUNOVIC	Milena
1427	BBS	990	1	Graduate Research	Bolon	Daniel
1659	BBS	990	1	Graduate Research	Bosco	Daryl
1709	BBS	990	1	Graduate Research	Boyer	Edward
1705	BBS	990	1	Graduate Research	Brehm	Michael
2017	BBS	990	1	Graduate Research	Brewster	Robert
1679	BBS	990	1	Graduate Research	Brown	Robert

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
4439	BBS	990	1	Graduate Research	BUCCI	Vanni
1429	BBS	990	1	Graduate Research	Budnik	Vivian
2063	BBS	990	1	Graduate Research	BYRNE	Alexandra Catherine
1431	BBS	990	1	Graduate Research	Cantor	Sharon
1433	BBS	990	1	Graduate Research	Castilla	Lucio
2041	BBS	990	1	Graduate Research	Cavacini	Lisa
1753	BBS	990	1	Graduate Research	Ceol	Craig
1435	BBS	990	1	Graduate Research	CHAN	Francis Ka Ming
1439	BBS	990	1	Graduate Research	Clapham	Paul
1441	BBS	990	1	Graduate Research	Clark	Robin
1733	BBS	990	1	Graduate Research	Cooper	Marcus
1443	BBS	990	1	Graduate Research	Corvera	Silvia
1445	BBS	990	1	Graduate Research	CZECH	Michael Paul
1447	BBS	990	1	Graduate Research	Davis	Roger
1449	BBS	990	1	Graduate Research	Dekker	Job
1451	BBS	990	1	Graduate Research	EMERY	Patrick
1815	BBS	990	1	Graduate Research	Fazzio	Thomas
1453	BBS	990	1	Graduate Research	Finberg	Robert
1455	BBS	990	1	Graduate Research	Fitzgerald	Katherine
2173	BBS	990	1	Graduate Research	FITZGERALD	Thomas
4516	BBS	990	1	Graduate Research	Flavahan	William
1457	BBS	990	1	Graduate Research	Flotte	Terence
1459	BBS	990	1	Graduate Research	Francis	Michael
1865	BBS	990	1	Graduate Research	FREEDMAN	Jane
1461	BBS	990	1	Graduate Research	Freeman	Marc
1823	BBS	990	1	Graduate Research	Futai	Kensuke
1773	BBS	990	1	Graduate Research	Gao	Fen-Biao
1465	BBS	990	1	Graduate Research	Gao	Guangping
1909	BBS	990	1	Graduate Research	Garber	Manuel
1463	BBS	990	1	Graduate Research	Gardner	Paul
2143	BBS	990	1	Graduate Research	Gilmore	James
1467	BBS	990	1	Graduate Research	GOLDBERG	Robert Joel
1469	BBS	990	1	Graduate Research	Golenbock	Douglas
1471	BBS	990	1	Graduate Research	Gottlinger	Heinrich
1473	BBS	990	1	Graduate Research	Gravallese	Ellen
2179	BBS	990	1	Graduate Research	GRAYEDWARDS	Heather Leigh
1475	BBS	990	1	Graduate Research	Green	Michael
2097	BBS	990	1	Graduate Research	GREER	Paul Lieberman
1477	BBS	990	1	Graduate Research	Greiner	Dale
1907	BBS	990	1	Graduate Research	Grunwald	David
1739	BBS	990	1	Graduate Research	Guertin	David
1849	BBS	990	1	Graduate Research	Han	Gang

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
1847	BBS	990	1	Graduate Research	Harris	John
2069	BBS	990	1	Graduate Research	Haynes	Cole
1479	BBS	990	1	Graduate Research	Hayward	Lawrence
2159	BBS	990	1	Graduate Research	Henninger	Nils
1481	BBS	990	1	Graduate Research	Huseby	Eric
1483	BBS	990	1	Graduate Research	Imbalzano	Anthony
1485	BBS	990	1	Graduate Research	Ip	Yicktung
2083	BBS	990	1	Graduate Research	IRAZOQUI	Javier Elbio
1487	BBS	990	1	Graduate Research	Jacobson	Allan
2161	BBS	990	1	Graduate Research	JOHNSON	Mark Damone
1489	BBS	990	1	Graduate Research	Jones	Stephen
1491	BBS	990	1	Graduate Research	Kang	Joonsoo
1981	BBS	990	1	Graduate Research	Karlsson	Elinor
1493	BBS	990	1	Graduate Research	Kaufman	Paul
2025	BBS	990	1	Graduate Research	Keaney	John
1959	BBS	990	1	Graduate Research	Kelch	Brian
1495	BBS	990	1	Graduate Research	Kelliher	Michelle
1883	BBS	990	1	Graduate Research	Kennedy	David
1851	BBS	990	1	Graduate Research	Khanna	Hemant
1007	BBS	990	1	Graduate Research	Khvorova	Anastasia
2043	BBS	990	1	Graduate Research	Kim	Dohoon
1657	BBS	990	1	Graduate Research	Kim	Jason
1497	BBS	990	1	Graduate Research	King	Jean
1499	BBS	990	1	Graduate Research	Kobertz	William
1501	BBS	990	1	Graduate Research	Kornfeld	Hardy
1859	BBS	990	1	Graduate Research	Korostelev	Andrei
4515	BBS	990	1	Graduate Research	Koupenova-Zamor	Milka
1503	BBS	990	1	Graduate Research	Kowalik	Timothy
1505	BBS	990	1	Graduate Research	Kurt-Jones	Evelyn
1727	BBS	990	1	Graduate Research	Landers	John
1507	BBS	990	1	Graduate Research	Lawrence	Jeanne
1509	BBS	990	1	Graduate Research	Lawson	Nathan
1965	BBS	990	1	Graduate Research	Lee	Michael
1511	BBS	990	1	Graduate Research	Lee	Tzumin
1513	BBS	990	1	Graduate Research	Levitz	Stuart
1515	BBS	990	1	Graduate Research	Lewis	Brian
1517	BBS	990	1	Graduate Research	Li	Hong-Sheng
1647	BBS	990	1	Graduate Research	Li	Shaoguang
2099	BBS	990	1	Graduate Research	Li	Wenjun
1519	BBS	990	1	Graduate Research	Libraty	Daniel
1521	BBS	990	1	Graduate Research	Lien	Egil
4453	BBS	990	1	Graduate Research	Lodato	Michael

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
1783	BBS	990	1	Graduate Research	Lois	Carlos
1523	BBS	990	1	Graduate Research	Lu	Shan
1893	BBS	990	1	Graduate Research	Luban	Jeremy
1525	BBS	990	1	Graduate Research	Luckmann	Roger
1891	BBS	990	1	Graduate Research	Maehr	Rene
1693	BBS	990	1	Graduate Research	Mandrekar	Pranoti
1681	BBS	990	1	Graduate Research	Mao	Junhao
1707	BBS	990	1	Graduate Research	Martin	Gilles
1527	BBS	990	1	Graduate Research	Massi	Francesca
1529	BBS	990	1	Graduate Research	Matthews	Charles
1531	BBS	990	1	Graduate Research	McCollum	Dannel
1683	BBS	990	1	Graduate Research	McCormick	Beth
1533	BBS	990	1	Graduate Research	Melikian	Haley
1535	BBS	990	1	Graduate Research	Mello	Craig
1537	BBS	990	1	Graduate Research	Mercurio	Arthur
1539	BBS	990	1	Graduate Research	Miller	Stephen
2087	BBS	990	1	Graduate Research	MITCHELL	Amir Zadok
1845	BBS	990	1	Graduate Research	Moore	Constance
1541	BBS	990	1	Graduate Research	Moore	Melissa
1695	BBS	990	1	Graduate Research	Moormann	Ann
1543	BBS	990	1	Graduate Research	Morrison	Trudy
1873	BBS	990	1	Graduate Research	Muller	Christian
4482	BBS	990	1	Graduate Research	Munro	James
1545	BBS	990	1	Graduate Research	Munson	Maryann
1547	BBS	990	1	Graduate Research	Newburger	Peter
1549	BBS	990	1	Graduate Research	Ockene	Judith
1885	BBS	990	1	Graduate Research	Ortiz-Miranda	Sonia
4566	BBS	990	1	Graduate Research	ORZALLI	Megan Horn
1791	BBS	990	1	Graduate Research	Ostroff	Gary
2129	BBS	990	1	Graduate Research	PAI	Athma Anjali
1551	BBS	990	1	Graduate Research	Paydarfar	David
1553	BBS	990	1	Graduate Research	Pazour	Gregory
1555	BBS	990	1	Graduate Research	Peterson	Craig
1557	BBS	990	1	Graduate Research	Pryciak	Peter
1983	BBS	990	1	Graduate Research	Pukkila-Worley	Read
1853	BBS	990	1	Graduate Research	Punzo	Claudio
1559	BBS	990	1	Graduate Research	Ram	Sanjay
1561	BBS	990	1	Graduate Research	Rando	Oliver
2067	BBS	990	1	Graduate Research	REBOLDI	Andrea
1563	BBS	990	1	Graduate Research	Rhind	Nicholas
1565	BBS	990	1	Graduate Research	Richter	Joel
1567	BBS	990	1	Graduate Research	Rivera Perez	Jaime

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
1569	BBS	990	1	Graduate Research	Rock	Kenneth
2101	BBS	990	1	Graduate Research	Rogaev	Evgeny
1571	BBS	990	1	Graduate Research	Ross	Alonzo
1803	BBS	990	1	Graduate Research	Rothstein	Ann
1573	BBS	990	1	Graduate Research	Royer	William
1575	BBS	990	1	Graduate Research	Ruiz De Luzuriaga	Katherine
4514	BBS	990	1	Graduate Research	RUSCETTI	Marcus
1577	BBS	990	1	Graduate Research	Ryder	Sean
1579	BBS	990	1	Graduate Research	Sagerstrom	Charles
1581	BBS	990	1	Graduate Research	Sassetti	Christopher
4567	BBS	990	1	Graduate Research	Schaal	Shlomit
2019	BBS	990	1	Graduate Research	Schafer	Dorothy
1583	BBS	990	1	Graduate Research	Schiffer	Celia
1585	BBS	990	1	Graduate Research	Selin	Liisa
1745	BBS	990	1	Graduate Research	Sena Esteves	Miguel
4568	BBS	990	1	Graduate Research	Shank	Elizabeth
1587	BBS	990	1	Graduate Research	Shaw	Leslie
2193	BBS	990	1	Graduate Research	SHEN	Kuang
2065	BBS	990	1	Graduate Research	Shim	Jae-Hyuck
1589	BBS	990	1	Graduate Research	Silverman	Neal
1591	BBS	990	1	Graduate Research	Sluder	Greenfield
1593	BBS	990	1	Graduate Research	Socolovsky	Merav
1595	BBS	990	1	Graduate Research	Song	Jie
1985	BBS	990	1	Graduate Research	Sontheimer	Erik
1597	BBS	990	1	Graduate Research	Stein	Gary
1599	BBS	990	1	Graduate Research	Stern	Lawrence
1855	BBS	990	1	Graduate Research	Swain	Susan
1601	BBS	990	1	Graduate Research	Szabo	Gyongyi
1603	BBS	990	1	Graduate Research	Tapper	Andrew
1605	BBS	990	1	Graduate Research	Theurkauf	William
1987	BBS	990	1	Graduate Research	Thompson	Paul
2185	BBS	990	1	Graduate Research	Thomson	Travis
1607	BBS	990	1	Graduate Research	Tissenbaum	Heidi
1437	BBS	990	1	Graduate Research	Torres	Eduardo
1951	BBS	990	1	Graduate Research	Trivedi	Chinmay
1609	BBS	990	1	Graduate Research	Walhout	Albertha
1917	BBS	990	1	Graduate Research	Walker	Amy
1805	BBS	990	1	Graduate Research	Wang	Jennifer
1807	BBS	990	1	Graduate Research	Waring	Molly
2031	BBS	990	1	Graduate Research	Watts	Jonathan
1611	BBS	990	1	Graduate Research	Weaver	David
1613	BBS	990	1	Graduate Research	Welsh	Raymond

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
<b>1615</b>	BBS	990	1	Graduate Research	Weng	Zhiping
<b>1617</b>	BBS	990	1	Graduate Research	Wolfe	Scot
<b>1619</b>	BBS	990	1	Graduate Research	Woodland	Robert
<b>1765</b>	BBS	990	1	Graduate Research	Xiang	Yang
<b>1621</b>	BBS	990	1	Graduate Research	Xu	Zuoshang
<b>1977</b>	BBS	990	1	Graduate Research	Xue	Wen
<b>4569</b>	BBS	990	1	Graduate Research	YOUK	Hyun
<b>2095</b>	BBS	990	1	Graduate Research	Yu	Hong
<b>1623</b>	BBS	990	1	Graduate Research	Zamore	Phillip
<b>1677</b>	BBS	990	1	Graduate Research	Zeldovich	Konstantin
<b>1625</b>	BBS	990	1	Graduate Research	Zhang	Hong
<b>4570</b>	BBS	990	1	Graduate Research	ZHOU	Chan
<b>1627</b>	BBS	990	1	Graduate Research	ZHUGE	Ronghua
<b>1419</b>	BBS	990	1	Graduate Research	Ziedonis	Douglas

## Clinical & Translational Sciences Non-Research Class Numbers

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
3768	CTS	602B	CPH	Adv Epidemiology & Res Mthds	Nunes	Anthony
3748	CTS	603B	CPH	Stat.Meth.Survival&Long.DatAna	BAEK	Jong Gyu
<b>CANCELLED</b>	CTS	609	CPH	Design& ConductClinical Trials	Barton	Bruce
4387	CTS	611	CPH	Scientific Writing	GOLDBERG	Robert Joel
4529	CTS	711	CTS	Adv Topics in Epidemiology	FORRESTER	Sarah Nicole
4251	CTS	727	CPH	Use Exist.Pop.Based PHlth Data	LIU	Shao-Hsien
4590	CTS	732	CPH	Qualit.Methods Health Research	Dube	Catherine
<b>CANCELLED</b>	CTS	733	CPH	Pharmacoepidemiology	ALCUSKY	Matthew James
4070	CTS	799	CPH	Independent Study	Ulbricht	Christine
3904	CTS	799	CPH	Independent Study	Lapane	Kate
3906	CTS	799	CPH	Independent Study	GOLDBERG	Robert Joel
4022	CTS	799	CPH	Independent Study	Rosal	Milagros
3952	CTS	799	CPH	Independent Study	Epstein	Mara
4066	CTS	799	CPH	Independent Study	LIU	Shao-Hsien
4068	CTS	799	CPH	Independent Study	Sadasivam	Rajani
4391	CTS	799	CPH	Independent Study	ALCUSKY	Matthew James
4393	CTS	799	CPH	Independent Study	Moore Simas	Tiffany
4395	CTS	799	CPH	Independent Study	Nunes	Anthony
3842	CTS	799	CPH	Independent Study	Person	Sharina
4423	CTS	799	CPH	Independent Study	Curtin	Carol
4407	CTS	799	CPH	Independent Study	BAEK	Jong Gyu
4409	CTS	799	CPH	Independent Study	FORRESTER	Sarah Nicole
3966	CTS	799	CPH	Independent Study	Ma	Yunsheng
3862	CTS	799	CPH	Independent Study	Allison	Jeroan
3864	CTS	799	CPH	Independent Study	Jesdale	William
3866	CTS	799	CPH	Independent Study	Alavi	Karim
3870	CTS	799	CPH	Independent Study	Fang	Hua
3968	CTS	799	CPH	Independent Study	Aidlen	Jeremy
3902	CTS	799	CPH	Independent Study	Lemon	Stephenie
3724	CTS	802	CPH	Journal Club	GOLDBERG	Robert Joel
4064	CTS	860A	CPH	Written Qualifying Exam	Lapane	Kate
3868	CTS	860B	CPH	Oral Qualifying Exam	Lapane	Kate
3886	CTS	865	CTS	CTS TRAC MEETING	Lapane	Kate
3834	CTS	875	CPH	Grant Writing	Lapane	Kate

## Clinical & Translational Sciences Research Class Numbers

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
4472	CTS	550	CTS	Research Assistantship	Lapane	Kate
4473	CTS	550	CTS	Research Assistantship	Rosal	Milagros
3908	CTS	850	CTS	Research Assistantship	Aidlen	Jeremy
4016	CTS	850	CTS	Research Assistantship	Alavi	Karim
4279	CTS	850	CTS	Research Assistantship	ALCUSKY	Matthew James
3888	CTS	850	CTS	Research Assistantship	Allison	Jeroan
3894	CTS	850	CTS	Research Assistantship	ANDERSON	Frederick Arthur
4018	CTS	850	CTS	Research Assistantship	Ash	Arlene
4030	CTS	850	CTS	Research Assistantship	Byatt	Nancy
3892	CTS	850	CTS	Research Assistantship	Clark	Robin
4572	CTS	850	CTS	Research Assistantship	Curtin	Carol
4014	CTS	850	CTS	Research Assistantship	Epstein	Mara
4573	CTS	850	CTS	Research Assistantship	Fisher	Kimberly
4054	CTS	850	CTS	Research Assistantship	Friedmann	Peter
3838	CTS	850	CTS	Research Assistantship	GOLDBERG	Robert Joel
4026	CTS	850	CTS	Research Assistantship	Himmelstein	Jay
3878	CTS	850	CTS	Research Assistantship	Kiefe	Catarina
3740	CTS	850	CTS	Research Assistantship	Lapane	Kate
3890	CTS	850	CTS	Research Assistantship	Lemon	Stephenie
4090	CTS	850	CTS	Research Assistantship	LIU	Shao-Hsien
3856	CTS	850	CTS	Research Assistantship	Luckmann	Roger
3732	CTS	850	CTS	Research Assistantship	Mattocks	Kristin
4028	CTS	850	CTS	Research Assistantship	Mazor	Kathleen
3922	CTS	850	CTS	Research Assistantship	McManus	David
3844	CTS	850	CTS	Research Assistantship	Mick	Eric
4484	CTS	850	CTS	Research Assistantship	Munro	James
4574	CTS	850	CTS	Research Assistantship	Nunes	Anthony
3836	CTS	850	CTS	Research Assistantship	Ockene	Judith
3810	CTS	850	CTS	Research Assistantship	Person	Sharina
4324	CTS	850	CTS	Research Assistantship	RHEIN	Lawrence
3726	CTS	850	CTS	Research Assistantship	Rosal	Milagros
3788	CTS	850	CTS	Research Assistantship	Rosen	Allison
4575	CTS	850	CTS	Research Assistantship	Rosen	Max
4072	CTS	850	CTS	Research Assistantship	Sadasivam	Rajani
4576	CTS	850	CTS	Research Assistantship	Tisminetzky	Mayra
3850	CTS	850	CTS	Research Assistantship	Tjia	Jennifer
4498	CTS	850	CTS	Research Assistantship	Trivedi	Michelle
4020	CTS	850	CTS	Research Assistantship	Ulbricht	Christine
3872	CTS	850	CTS	Research Assistantship	Waring	Molly
4455	CTS	850	CTS	Research Assistantship	ZHOU	Chan
3828	CTS	850	CTS	Research Assistantship	Ziedonis	Douglas

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
3910	CTS	870	CTS	Pre-Thesis Research	Aidlen	Jeremy
3950	CTS	870	CTS	Pre-Thesis Research	Alavi	Karim
4281	CTS	870	CTS	Pre-Thesis Research	ALCUSKY	Matthew James
4074	CTS	870	CTS	Pre-Thesis Research	Allison	Jeroan
4078	CTS	870	CTS	Pre-Thesis Research	Ash	Arlene
4429	CTS	870	CTS	Pre-Thesis Research	Brehm	Michael
4032	CTS	870	CTS	Pre-Thesis Research	Byatt	Nancy
4577	CTS	870	CTS	Pre-Thesis Research	Curtin	Carol
3988	CTS	870	CTS	Pre-Thesis Research	Epstein	Mara
4578	CTS	870	CTS	Pre-Thesis Research	Fisher	Kimberly
4052	CTS	870	CTS	Pre-Thesis Research	Friedmann	Peter
3990	CTS	870	CTS	Pre-Thesis Research	GOLDBERG	Robert Joel
4080	CTS	870	CTS	Pre-Thesis Research	Kiefe	Catarina
4024	CTS	870	CTS	Pre-Thesis Research	LAFEMINA	Jennifer
3970	CTS	870	CTS	Pre-Thesis Research	Lapane	Kate
3958	CTS	870	CTS	Pre-Thesis Research	Lemon	Stephenie
4092	CTS	870	CTS	Pre-Thesis Research	LIU	Shao-Hsien
4082	CTS	870	CTS	Pre-Thesis Research	Mattocks	Kristin
4034	CTS	870	CTS	Pre-Thesis Research	Mazor	Kathleen
3920	CTS	870	CTS	Pre-Thesis Research	McManus	David
4485	CTS	870	CTS	Pre-Thesis Research	Munro	James
4417	CTS	870	CTS	Pre-Thesis Research	Nunes	Anthony
3960	CTS	870	CTS	Pre-Thesis Research	Ockene	Judith
3956	CTS	870	CTS	Pre-Thesis Research	Person	Sharina
4326	CTS	870	CTS	Pre-Thesis Research	RHEIN	Lawrence
3954	CTS	870	CTS	Pre-Thesis Research	Rosal	Milagros
4579	CTS	870	CTS	Pre-Thesis Research	Rosen	Max
4076	CTS	870	CTS	Pre-Thesis Research	Sadasivam	Rajani
4580	CTS	870	CTS	Pre-Thesis Research	Tisminetzky	Mayra
4100	CTS	870	CTS	Pre-Thesis Research	Tjia	Jennifer
4499	CTS	870	CTS	Pre-Thesis Research	Trivedi	Michelle
4084	CTS	870	CTS	Pre-Thesis Research	Ulbricht	Christine
4457	CTS	870	CTS	Pre-Thesis Research	ZHOU	Chan
3912	CTS	900	CTS	Thesis Research	Aidlen	Jeremy
3976	CTS	900	CTS	Thesis Research	Alavi	Karim
4283	CTS	900	CTS	Thesis Research	ALCUSKY	Matthew James
3784	CTS	900	CTS	Thesis Research	Allison	Jeroan
3770	CTS	900	CTS	Thesis Research	ANDERSON	Frederick Arthur
3818	CTS	900	CTS	Thesis Research	Ash	Arlene
4036	CTS	900	CTS	Thesis Research	Byatt	Nancy
3772	CTS	900	CTS	Thesis Research	Clark	Robin
4581	CTS	900	CTS	Thesis Research	Curtin	Carol

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
3974	CTS	900	CTS	Thesis Research	Epstein	Mara
4419	CTS	900	CTS	Thesis Research	Etzel	Lori
4582	CTS	900	CTS	Thesis Research	Fisher	Kimberly
4056	CTS	900	CTS	Thesis Research	Friedmann	Peter
3840	CTS	900	CTS	Thesis Research	GOLDBERG	Robert Joel
3896	CTS	900	CTS	Thesis Research	Harlan	David
3786	CTS	900	CTS	Thesis Research	Kiefe	Catarina
3804	CTS	900	CTS	Thesis Research	King	Jean
4088	CTS	900	CTS	Thesis Research	LAFEMINA	Jennifer
3742	CTS	900	CTS	Thesis Research	Lapane	Kate
3816	CTS	900	CTS	Thesis Research	Lemon	Stephenie
4094	CTS	900	CTS	Thesis Research	LIU	Shao-Hsien
3774	CTS	900	CTS	Thesis Research	Luckmann	Roger
3734	CTS	900	CTS	Thesis Research	Mattocks	Kristin
4038	CTS	900	CTS	Thesis Research	Mazor	Kathleen
3918	CTS	900	CTS	Thesis Research	McManus	David
3846	CTS	900	CTS	Thesis Research	Mick	Eric
3820	CTS	900	CTS	Thesis Research	Moore	Constance
3962	CTS	900	CTS	Thesis Research	Moormann	Ann
4487	CTS	900	CTS	Thesis Research	Munro	James
4583	CTS	900	CTS	Thesis Research	Nunes	Anthony
3972	CTS	900	CTS	Thesis Research	Ockene	Judith
3802	CTS	900	CTS	Thesis Research	Paydarfar	David
3812	CTS	900	CTS	Thesis Research	Person	Sharina
4330	CTS	900	CTS	Thesis Research	RHEIN	Lawrence
3728	CTS	900	CTS	Thesis Research	Rosal	Milagros
3790	CTS	900	CTS	Thesis Research	Rosen	Allison
4425	CTS	900	CTS	Thesis Research	Rosen	Max
3860	CTS	900	CTS	Thesis Research	Sadasivam	Rajani
4584	CTS	900	CTS	Thesis Research	Tisminetzky	Mayra
3852	CTS	900	CTS	Thesis Research	Tjia	Jennifer
4500	CTS	900	CTS	Thesis Research	Trivedi	Michelle
3978	CTS	900	CTS	Thesis Research	Ulbricht	Christine
3874	CTS	900	CTS	Thesis Research	Waring	Molly
4459	CTS	900	CTS	Thesis Research	ZHOU	Chan
3830	CTS	900	CTS	Thesis Research	Ziedonis	Douglas
3914	CTS	990	CTS	Graduate Research	Aidlen	Jeremy
3984	CTS	990	CTS	Graduate Research	Alavi	Karim
4285	CTS	990	CTS	Graduate Research	ALCUSKY	Matthew James
3778	CTS	990	CTS	Graduate Research	Allison	Jeroan
3764	CTS	990	CTS	Graduate Research	ANDERSON	Frederick Arthur
3822	CTS	990	CTS	Graduate Research	Ash	Arlene

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
3800	CTS	990	CTS	Graduate Research	Bandini	Linda
3798	CTS	990	CTS	Graduate Research	Barton	Bruce
3880	CTS	990	CTS	Graduate Research	Bozorgzadeh	Adel
3780	CTS	990	CTS	Graduate Research	Briesacher	Becky
4040	CTS	990	CTS	Graduate Research	Byatt	Nancy
3900	CTS	990	CTS	Graduate Research	Clark	Melissa
3758	CTS	990	CTS	Graduate Research	Clark	Robin
4585	CTS	990	CTS	Graduate Research	Curtin	Carol
3826	CTS	990	CTS	Graduate Research	DIFRANZA	Joseph
3982	CTS	990	CTS	Graduate Research	Epstein	Mara
4586	CTS	990	CTS	Graduate Research	Fisher	Kimberly
3782	CTS	990	CTS	Graduate Research	Fisher	William
3750	CTS	990	CTS	Graduate Research	Franklin	Patricia
3792	CTS	990	CTS	Graduate Research	Frazier	Jean
4058	CTS	990	CTS	Graduate Research	Friedmann	Peter
3776	CTS	990	CTS	Graduate Research	GOLDBERG	Robert Joel
4086	CTS	990	CTS	Graduate Research	Kiefe	Catarina
3746	CTS	990	CTS	Graduate Research	King	Jean
3736	CTS	990	CTS	Graduate Research	LAFEMINA	Jennifer
3744	CTS	990	CTS	Graduate Research	Lapane	Kate
3796	CTS	990	CTS	Graduate Research	Lemon	Stephenie
3756	CTS	990	CTS	Graduate Research	Lilly	Craig
4096	CTS	990	CTS	Graduate Research	LIU	Shao-Hsien
3754	CTS	990	CTS	Graduate Research	Luckmann	Roger
3762	CTS	990	CTS	Graduate Research	Madoff	Lawrence
3806	CTS	990	CTS	Graduate Research	Marsh	Wendy
3882	CTS	990	CTS	Graduate Research	MARTINS	Paulo
3738	CTS	990	CTS	Graduate Research	Mattocks	Kristin
4042	CTS	990	CTS	Graduate Research	Mazor	Kathleen
3916	CTS	990	CTS	Graduate Research	McManus	David
3848	CTS	990	CTS	Graduate Research	Mick	Eric
3824	CTS	990	CTS	Graduate Research	Moore	Constance
4489	CTS	990	CTS	Graduate Research	Munro	James
4587	CTS	990	CTS	Graduate Research	Nunes	Anthony
3766	CTS	990	CTS	Graduate Research	Ockene	Ira
3980	CTS	990	CTS	Graduate Research	Ockene	Judith
3858	CTS	990	CTS	Graduate Research	Paydarfar	David
3814	CTS	990	CTS	Graduate Research	Person	Sharina
3752	CTS	990	CTS	Graduate Research	Reed	George
4334	CTS	990	CTS	Graduate Research	RHEIN	Lawrence
3730	CTS	990	CTS	Graduate Research	Rosal	Milagros
3794	CTS	990	CTS	Graduate Research	Rosen	Allison

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
<b>4588</b>	CTS	990	CTS	Graduate Research	Rosen	Max
<b>3760</b>	CTS	990	CTS	Graduate Research	Rothman	Alan
<b>3898</b>	CTS	990	CTS	Graduate Research	Sadasivam	Rajani
<b>3808</b>	CTS	990	CTS	Graduate Research	Schneider	Kristin
<b>4589</b>	CTS	990	CTS	Graduate Research	Tisminetzky	Mayra
<b>3854</b>	CTS	990	CTS	Graduate Research	Tjia	Jennifer
<b>4501</b>	CTS	990	CTS	Graduate Research	Trivedi	Michelle
<b>3986</b>	CTS	990	CTS	Graduate Research	Ulbricht	Christine
<b>3884</b>	CTS	990	CTS	Graduate Research	Walz	Jens
<b>3876</b>	CTS	990	CTS	Graduate Research	Waring	Molly
<b>4461</b>	CTS	990	CTS	Graduate Research	ZHOU	Chan
<b>3832</b>	CTS	990	CTS	Graduate Research	Ziedonis	Douglas

## MD/PhD Class Numbers

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
3604	BBS	865	MDP	BBS TRAC Meeting	Lane	Mary
3644	BBS	870	MDP	Prequalifying Research	Boudreaux	Edwin
4263	BBS	870	MDP	Prequalifying Research	JOHNSON	Mark Damone
4303	BBS	870	MDP	Prequalifying Research	GRAYEDWARDS	Heather Leigh
4355	BBS	870	MDP	Prequalifying Research	Brehm	Michael
4316	BBS	870	MDP	Prequalifying Research	Thomson	Travis
4357	BBS	870	MDP	Prequalifying Research	Haynes	Cole
4359	BBS	870	MDP	Prequalifying Research	Peterson	Craig
4361	BBS	870	MDP	Prequalifying Research	Richter	Joel
4479	BBS	870	MDP	Prequalifying Research	Munro	James
4523	BBS	870	MDP	Prequalifying Research	RUSCETTI	Marcus
4524	BBS	870	MDP	Prequalifying Research	Koupenova-Zamor	Milka
4525	BBS	870	MDP	Prequalifying Research	Flavahan	William
3665	BBS	870	MDP	Prequalifying Research	SHOHET	Jason Matthew
4595	BBS	870	MDP	Prequalifying Research	Behar	Samuel
4596	BBS	870	MDP	Prequalifying Research	Pazour	Gregory
4597	BBS	870	MDP	Prequalifying Research	MARTINS	Paulo
4598	BBS	870	MDP	Prequalifying Research	Pukkila-Worley	Read
4599	BBS	870	MDP	Prequalifying Research	REBOLDI	Andrea
4600	BBS	870	MDP	Prequalifying Research	Sena Esteves	Miguel
3669	BBS	870	MDP	Prequalifying Research	WANG	Bo
3675	BBS	870	MDP	Prequalifying Research	Fitzgerald	Katherine
3677	BBS	870	MDP	Prequalifying Research	Kelliher	Michelle
3679	BBS	870	MDP	Prequalifying Research	McCormick	Beth
3681	BBS	870	MDP	Prequalifying Research	Melikian	Haley
3683	BBS	870	MDP	Prequalifying Research	Weng	Zhiping
4260	BBS	870	MDP	Prequalifying Research	Henninger	Nils
3462	BBS	900	MDP	Thesis Research	Alonso	Laura
3480	BBS	900	MDP	Thesis Research	Guertin	David
4521	BBS	900	MDP	Thesis Research	Koupenova-Zamor	Milka
4522	BBS	900	MDP	Thesis Research	Flavahan	William
3482	BBS	900	MDP	Thesis Research	Harris	John
4265	BBS	900	MDP	Thesis Research	Henninger	Nils
3484	BBS	900	MDP	Thesis Research	Kurt-Jones	Evelyn
3486	BBS	900	MDP	Thesis Research	Lawrence	Jeanne
3488	BBS	900	MDP	Thesis Research	Lee	Michael
4319	BBS	900	MDP	Thesis Research	Thomson	Travis
3490	BBS	900	MDP	Thesis Research	Li	Hong-Sheng
3492	BBS	900	MDP	Thesis Research	McCormick	Beth
3494	BBS	900	MDP	Thesis Research	Mercurio	Arthur
3496	BBS	900	MDP	Thesis Research	Moore	Melissa
3464	BBS	900	MDP	Thesis Research	Aronin	Neil
3498	BBS	900	MDP	Thesis Research	Rhind	Nicholas

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
3500	BBS	900	MDP	Thesis Research	Richter	Joel
3502	BBS	900	MDP	Thesis Research	Rock	Kenneth
3504	BBS	900	MDP	Thesis Research	Sassetti	Christopher
3506	BBS	900	MDP	Thesis Research	Schafer	Dorothy
3508	BBS	900	MDP	Thesis Research	Schiffer	Celia
3510	BBS	900	MDP	Thesis Research	Shaw	Leslie
3512	BBS	900	MDP	Thesis Research	Song	Jie
3514	BBS	900	MDP	Thesis Research	Szabo	Gyongyi
3516	BBS	900	MDP	Thesis Research	Trivedi	Chinmay
3466	BBS	900	MDP	Thesis Research	Bailey	Jeffrey
3518	BBS	900	MDP	Thesis Research	Walhout	Albertha
3520	BBS	900	MDP	Thesis Research	Weng	Zhiping
3522	BBS	900	MDP	Thesis Research	Xue	Wen
3524	BBS	900	MDP	Thesis Research	Zamore	Phillip
3606	BBS	900	MDP	Thesis Research	Luban	Jeremy
3667	BBS	900	MDP	Thesis Research	SHOHET	Jason Matthew
3671	BBS	900	MDP	Thesis Research	WANG	Bo
4268	BBS	900	MDP	Thesis Research	JOHNSON	Mark Damone
4306	BBS	900	MDP	Thesis Research	GRAYEDWARDS	Heather Leigh
4363	BBS	900	MDP	Thesis Research	EMERY	Patrick
3468	BBS	900	MDP	Thesis Research	Behar	Samuel
4365	BBS	900	MDP	Thesis Research	Fitzgerald	Katherine
4367	BBS	900	MDP	Thesis Research	Kelliher	Michelle
4369	BBS	900	MDP	Thesis Research	Melikian	Haley
4371	BBS	900	MDP	Thesis Research	Rothstein	Ann
3470	BBS	900	MDP	Thesis Research	Bosco	Daryl
4481	BBS	900	MDP	Thesis Research	Munro	James
3472	BBS	900	MDP	Thesis Research	Brown	Robert
3474	BBS	900	MDP	Thesis Research	Ceol	Craig
3476	BBS	900	MDP	Thesis Research	Gardner	Paul
4605	BBS	900	MDP	Thesis Research	Haynes	Cole
4606	BBS	900	MDP	Thesis Research	Green	Michael
3478	BBS	900	MDP	Thesis Research	Golenbock	Douglas
3685	BBS	900	MDP	Thesis Research	ANACLET	Christelle
3687	BBS	900	MDP	Thesis Research	Baehrecke	Eric
3689	BBS	900	MDP	Thesis Research	Boudreaux	Edwin
3691	BBS	900	MDP	Thesis Research	Futai	Kensuke
3693	BBS	900	MDP	Thesis Research	Khvorova	Anastasia
3695	BBS	900	MDP	Thesis Research	Peterson	Craig
3697	BBS	900	MDP	Thesis Research	Pukkila-Worley	Read
3699	BBS	900	MDP	Thesis Research	Sontheimer	Erik
4520	BBS	900	MDP	Thesis Research	RUSCETTI	Marcus
3411	BBS	990	MDP	Graduate Research	McManus	David
3542	BBS	990	MDP	Graduate Research	Golenbock	Douglas

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
3544	BBS	990	MDP	Graduate Research	Guertin	David
3546	BBS	990	MDP	Graduate Research	Harris	John
3548	BBS	990	MDP	Graduate Research	Kurt-Jones	Evelyn
3550	BBS	990	MDP	Graduate Research	Lawrence	Jeanne
3552	BBS	990	MDP	Graduate Research	Lee	Michael
3554	BBS	990	MDP	Graduate Research	Li	Hong-Sheng
3656	BBS	990	MDP	Graduate Research	SHOHET	Jason Matthew
3556	BBS	990	MDP	Graduate Research	McCormick	Beth
3558	BBS	990	MDP	Graduate Research	Mercurio	Arthur
3526	BBS	990	MDP	Graduate Research	Alonso	Laura
3560	BBS	990	MDP	Graduate Research	Moore	Melissa
3562	BBS	990	MDP	Graduate Research	Rhind	Nicholas
3564	BBS	990	MDP	Graduate Research	Richter	Joel
3566	BBS	990	MDP	Graduate Research	Rock	Kenneth
3568	BBS	990	MDP	Graduate Research	Sassetti	Christopher
3570	BBS	990	MDP	Graduate Research	Schafer	Dorothy
3572	BBS	990	MDP	Graduate Research	Schiffer	Celia
3574	BBS	990	MDP	Graduate Research	Shaw	Leslie
3576	BBS	990	MDP	Graduate Research	Song	Jie
3578	BBS	990	MDP	Graduate Research	Szabo	Gyongyi
3528	BBS	990	MDP	Graduate Research	Aronin	Neil
3580	BBS	990	MDP	Graduate Research	Trivedi	Chinmay
3582	BBS	990	MDP	Graduate Research	Walhout	Albertha
3584	BBS	990	MDP	Graduate Research	Weng	Zhiping
3586	BBS	990	MDP	Graduate Research	Xue	Wen
3588	BBS	990	MDP	Graduate Research	Zamore	Phillip
3592	BBS	990	MDP	Graduate Research	Lane	Mary
3592	BBS	990	MDP	Graduate Research	Xiang	Yang
3608	BBS	990	MDP	Graduate Research	Pazour	Gregory
3673	BBS	990	MDP	Graduate Research	WANG	Bo
3701	BBS	990	MDP	Graduate Research	Luban	Jeremy
4272	BBS	990	MDP	Graduate Research	Henninger	Nils
3530	BBS	990	MDP	Graduate Research	Bailey	Jeffrey
4274	BBS	990	MDP	Graduate Research	JOHNSON	Mark Damone
4309	BBS	990	MDP	Graduate Research	GRAYEDWARDS	Heather Leigh
4322	BBS	990	MDP	Graduate Research	Thomson	Travis
4373	BBS	990	MDP	Graduate Research	Baehrecke	Eric
4375	BBS	990	MDP	Graduate Research	Boudreaux	Edwin
4377	BBS	990	MDP	Graduate Research	Futai	Kensuke
4379	BBS	990	MDP	Graduate Research	Khvorova	Anastasia
4381	BBS	990	MDP	Graduate Research	Peterson	Craig
4383	BBS	990	MDP	Graduate Research	Pukkila-Worley	Read
3532	BBS	990	MDP	Graduate Research	Behar	Samuel
4385	BBS	990	MDP	Graduate Research	Sontheimer	Erik

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
4443	BBS	990	MDP	Graduate Research	ANACLET	Christelle
4517	BBS	990	MDP	Graduate Research	RUSCETTI	Marcus
4518	BBS	990	MDP	Graduate Research	Koupenova-Zamor	Milka
4519	BBS	990	MDP	Graduate Research	Flavahan	William
3534	BBS	990	MDP	Graduate Research	Bosco	Daryl
3536	BBS	990	MDP	Graduate Research	Brown	Robert
4483	BBS	990	MDP	Graduate Research	Munro	James
3538	BBS	990	MDP	Graduate Research	Ceol	Craig
3540	BBS	990	MDP	Graduate Research	Gardner	Paul
4601	BBS	990	MDP	Graduate Research	EMERY	Patrick
4602	BBS	990	MDP	Graduate Research	Fitzgerald	Katherine
4603	BBS	990	MDP	Graduate Research	Kelliher	Michelle
4604	BBS	990	MDP	Graduate Research	Rothstein	Ann
4607	BBS	990	MDP	Graduate Research	Melikian	Haley
3964	CTS	865	MDP	CTS TRAC MEETING	Lapane	Kate
4044	CTS	870	MDP	Pre-Thesis Research	Mazor	Kathleen
3992	CTS	870	MDP	Pre-Thesis Research	McManus	David
3994	CTS	870	MDP	Pre-Thesis Research	Boudreaux	Edwin
3996	CTS	870	MDP	Pre-Thesis Research	Byatt	Nancy
3998	CTS	870	MDP	Pre-Thesis Research	Peterson	Craig
4000	CTS	870	MDP	Pre-Thesis Research	Futai	Kensuke
4002	CTS	870	MDP	Pre-Thesis Research	Khvorova	Anastasia
4004	CTS	870	MDP	Pre-Thesis Research	ANACLET	Christelle
4006	CTS	870	MDP	Pre-Thesis Research	Pukkila-Worley	Read
4008	CTS	870	MDP	Pre-Thesis Research	Sontheimer	Erik
4010	CTS	870	MDP	Pre-Thesis Research	Baehrecke	Eric
4012	CTS	870	MDP	Pre-Thesis Research	Xue	Wen
4046	CTS	870	MDP	Pre-Thesis Research	Friedmann	Peter
4328	CTS	870	MDP	Pre-Thesis Research	RHEIN	Lawrence
4397	CTS	870	MDP	Pre-Thesis Research	Ash	Arlene
4399	CTS	870	MDP	Pre-Thesis Research	Himmelstein	Jay
4401	CTS	870	MDP	Pre-Thesis Research	Ulbricht	Christine
4486	CTS	870	MDP	Pre-Thesis Research	Munro	James
4611	CTS	870	MDP	Pre-Thesis Research	WANG	Bo
3928	CTS	900	MDP	Thesis Research	Allison	Jeroan
4609	CTS	900	MDP	Thesis Research	Himmelstein	Jay
4610	CTS	900	MDP	Thesis Research	Ulbricht	Christine
3930	CTS	900	MDP	Thesis Research	Kiefe	Catarina
3932	CTS	900	MDP	Thesis Research	Luckmann	Roger
4048	CTS	900	MDP	Thesis Research	Byatt	Nancy
4050	CTS	900	MDP	Thesis Research	McManus	David
4062	CTS	900	MDP	Thesis Research	Friedmann	Peter
4332	CTS	900	MDP	Thesis Research	RHEIN	Lawrence
4488	CTS	900	MDP	Thesis Research	Munro	James

Class No.	Subject	Catalog	Session	Description	Faculty Last	Faculty First
4608	CTS	900	MDP	Thesis Research	Ash	Arlene
3924	CTS	990	MDP	Graduate Research	McManus	David
3948	CTS	990	MDP	Graduate Research	MARTINS	Paulo
4060	CTS	990	MDP	Graduate Research	Friedmann	Peter
4403	CTS	990	MDP	Graduate Research	Lapane	Kate
4405	CTS	990	MDP	Graduate Research	Byatt	Nancy
3926	CTS	990	MDP	Graduate Research	Aidlen	Jeremy
4336	CTS	990	MDP	Graduate Research	RHEIN	Lawrence
4490	CTS	990	MDP	Graduate Research	Munro	James
3934	CTS	990	MDP	Graduate Research	Allison	Jeroan
3936	CTS	990	MDP	Graduate Research	Kiefe	Catarina
3938	CTS	990	MDP	Graduate Research	Luckmann	Roger
3940	CTS	990	MDP	Graduate Research	Donahue	John
3942	CTS	990	MDP	Graduate Research	IRAZOQUI	Javier Elbio
3944	CTS	990	MDP	Graduate Research	ANACLET	Christelle
3946	CTS	990	MDP	Graduate Research	MITCHELL	Amir Zadok
4121	MDP	740A	MDP	Dev. Solutions Res.Prob.A Yr1	Corvera	Silvia
4121	MDP	740A	MDP	Dev. Solutions Res.Prob.A Yr1	Lapane	Kate
4121	MDP	740A	MDP	Dev. Solutions Res.Prob.A Yr1	Dube	Catherine
4199	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Donahue	John
4141	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Luckmann	Roger
4145	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Bosco	Daryl
4147	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Khanna	Hemant
4183	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Walz	Jens
4151	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Walhout	Albertha
4153	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Harris	John
4155	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Shaw	Leslie
4157	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Schiffer	Celia
4159	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Paydarfar	David
4161	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Trivedi	Chinmay
4201	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	IRAZOQUI	Javier Elbio
4125	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Golenbock	Douglas
4165	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Szabo	Gyongyi
4167	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Lawrence	Jeanne
4169	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Allison	Jeroan
4171	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Punzo	Claudio
4173	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Ash	Arlene
4175	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Lee	Michael
4177	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Ceol	Craig
4179	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Moore	Melissa
4181	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	GOLDBERG	Robert Joel
4203	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	ANACLET	Christelle
4127	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Weng	Zhiping
4245	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Haynes	Cole

<b>Class No.</b>	<b>Subject</b>	<b>Catalog</b>	<b>Session</b>	<b>Description</b>	<b>Faculty Last</b>	<b>Faculty First</b>
4185	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Alonso	Laura
4187	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Schafer	Dorothy
4189	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Mercurio	Arthur
4191	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Xue	Wen
4193	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	McCormick	Beth
4195	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Fitzgerald	Katherine
4197	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	McManus	David
4213	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Peterson	Craig
4205	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	MITCHELL	Amir Zadok
4129	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Bailey	Jeffrey
4131	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Brass	Abraham
4217	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Pukkila-Worley	Read
4139	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Tjia	Jennifer
4209	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Baehrecke	Eric
4211	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Ziedonis	Douglas
4133	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Richter	Joel
4135	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Sassetti	Christopher
4137	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Aronin	Neil
4219	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Tapper	Andrew
4207	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	MARTINS	Paulo
4221	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Khvorova	Anastasia
4223	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Francis	Michael
4463	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Behar	Samuel
4227	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Kelliher	Michelle
4229	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Melikian	Haley
4231	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Keaney	John
4233	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Brehm	Michael
4235	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Rothstein	Ann
4237	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Caffrey	Daniel
4239	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Ulbricht	Christine
4149	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Corvera	Silvia
4241	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	SHOHET	Jason Matthew
4243	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	WANG	Bo
4465	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Sena Esteves	Miguel
4526	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	RUSCETTI	Marcus
4527	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Koupenova-Zamor	Milka
4528	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Flavahan	William
4115	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Zhang	Nanyin
4215	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Rhind	Nicholas
4163	MDP	740B	MDP	Dev. Solutions Res.Prob.B Yr2	Guertin	David
4123	MDP	740C	MDP	Dev. Solutions Res.Prob.C Yr3	Corvera	Silvia
4117	MDP	741	MDP	Intro. to Translational Med	Corvera	Silvia
4119	MDP	800	MDP	MD/PhD Seminar	Michelson	Anne
4113	MDP	990	MDP	MD/PhD Grad.Res.Stu Post-Disse	Michelson	Anne

