WELCOME
to the
NEUROSCIENCE
GRADUATE TRAINING PROGRAM
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On behalf of the entire Neuroscience training faculty, we would like to welcome you to Mount Sinai, to the MSTP program and to the Neuroscience Multidisciplinary Training Area (MTA). We have prepared this "welcome letter" to help you become familiarized with the graduate training phase of the program and to give you a heads-up to what’s coming down the road as you start your training. All of this information will be repeated throughout the year and is also available on the Neuroscience program website (http://icahn.mssm.edu/education/graduate-school/degrees-and-programs/phd-program/multidisciplinary-training-areas/neuroscience).

1. **Courses**

We have prepared a comprehensive Neuroscience Core course and and a number of advanced courses designed to expose students from a wide range of backgrounds to principles of brain structure and function, spanning molecules, synapses, cells, circuits, behavior and disease.

During the first year, you will take our required Neuroscience Core course (*Principles of Neural Science, Behavior and Pathophysiology*) in addition to your medical school curriculum. This Core course comprises three Units (there is a 4th Unit that is required for all Ph.D students, but is optional for MSTP students--more on this below). In the Fall term, you will take Unit 1: Cellular and Molecular Neuroscience (BSR1705); in the Spring-1 term, you’ll take Unit 2: Systems Neuroscience (BSR1706); and in the Spring-2 term, you’ll take Unit 3: Behavioral and Cognitive Neuroscience (BSR1707). You must register for each Unit separately. This course meets M-F, 9-9:50am in the Icahn Building, room 10-84 (Units 1-2), or M and W, 8:30-9:50 in the Hess building, room 9-101 (Unit 3). The timing of this course has been integrated with your medical school curriculum to allow you a quick transition to your 10am medical school courses on Annenberg 12th floor. Neuro MSTP students have the option of attending all or part of the medical school’s Molecules/Cells/Genomics course held mid-Oct through mid-December, however we strongly encourage you to attend at least the Genomics block of this course.

During the summer between years 1 and 2, you can take your General Knowledge exam, which is part of the requirement for advancing to candidacy. This oral exam covers the material in the Core course (Units 1-3). Additional information on this exam is given below.

In year 2, you will focus on your medical school courses, including Brain and Behavior. Generally, you will be taking Step 1 of the Boards during the summer between Years 2 and 3, and then be ready to enter the Neuroscience graduate training phase full-time starting in year 3. Upon entering the Ph.D phase of training, your remaining course requirements include the following: (1) a minimum of one advanced elective--check the Neuroscience MTA website and the Registrar for current advanced courses in Neuroscience, Genetics and Genomics, Pharmacology or any other training areas that may be of interest,
keeping in mind that these change year-to-year. Additionally, MSTP students may choose to take Unit 4 of the Core course (Molecular Pathogenesis of Neurological and Psychiatric Disorders) and/or a separate, but concurrent course called "Topics in Clinical Neuroscience". As mentioned, these are required for Ph.D students, but they are optional for you (since, as medical students, you will have plenty of exposure to human clinical neuroscience). If you choose to take one or both of these, they would count as advanced electives; (2) Responsible Conduct in Research; (3) Biostatistics; (4) "Selected Topics in Neuroscience", which is a works-in-progress/journal club series; (5) and our weekly Translational Neuroscience Seminar series.

All students should register for "Selected Topics in Neuroscience" in Years 3-4. Attendance is required for Year 3 MSTP students. Annual presentations are required for Years 3-4 MSTP students.

MSTP students are also required to take the "Medical Scientist Research Seminar" until the time that you have submitted your thesis proposal. Finally, at the very end of your Ph.D training, but before rejoining the medical school class for 3rd/4th years, you will take a "Clinical Refresher" course.

2. Laboratory Rotations

Students take 2-3 laboratory rotations over two summers (one, before the start of medical school, and the second, or second and third, in the summer between years 1 and 2). At the end of each rotation period, the Graduate School organizes Rotation Presentations, where students from all training areas (not just Neuroscience) must give a 10 min talk to other graduate students and their MTA directors followed by questions. Students should plan their rotations carefully: these are the labs that you are potentially interested in for your thesis work. As such, it is incumbent upon you to discuss with each rotation preceptor, prior to the start of the rotation, whether they have, or anticipate having, the funding to support you financially for the entirety of your thesis training. The answer to this question may influence with whom you choose to rotate with. The goal of the rotation is to experience a prospective lab in terms of the kind of science it focuses on, the methods and approaches used, the lab "dynamic" between students, technicians, postdocs and the PI, etc. Conversely, the lab--and the PI--is experiencing you: are you the kind of student-colleague that would excel in and contribute to that environment? Finding a lab and a PI that will support you during your thesis training ultimately requires mutual agreement between you and the PI and can depend on several things, for example, mutual agreement that the rotation was successful, sufficient funding, space in the laboratory, etc. While you are expected to be in the lab and work hard during your rotation, you are NOT expected to produce a finished study. PIs should be willing to give you time to prepare for your course exams. Please contact any faculty that you are interested in directly to setup your rotations. There is also a Directed Reading program during your first year in which you can choose a faculty member with whom you will read and discuss papers from the literature.
3. **Advisory committees**

All incoming first-year students are assigned a Neuroscience faculty advisor. This advisor, plus the MSTP Director (Dr. Hurd) and the Neuroscience Training Area Co-Directors (Drs. Huntley and Salton) are the people to whom you can turn if you have questions, problems or need advice. As you complete your coursework, take the General Knowledge exam, choose a lab for thesis work, and prepare to submit and defend your thesis proposal (see below for further details), a new committee (the Dissertation Advisory Committee) will be formed, generally consisting of three members and your thesis advisor.

4. **General Knowledge exam**

The General Knowledge exam is an oral, ~2-hour exam administered by a four-person committee who will test your cumulative knowledge of fundamental principles of neuroscience. Prospective thesis preceptors or rotation supervisors are not allowed to attend this exam. There is no written component. The exam covers the material presented in the Neuro Core course (Units 1-3) as well as material you may have been exposed to in any of the Seminar or works-in-progress series. This means that test topics can range from didactic material to experimental or conceptual approaches in the context of papers that were presented in the courses, but it is not a test specifically on your laboratory rotations or prior laboratory experience. During the exam, you will be encouraged to draw and/or diagram your answers on the board. In the past, most, if not all MSTP students have found it best to schedule their exam during the summer/early fall between your medical school Years 1 and 2 (that is, after you have completed Unit 3). Alternatively, you could wait and take it after Step 1 of the boards, as you enter the graduate training phase in Year 3. The Graduate School schedules the time and location of all exams based on the time-frame that you indicate. The Neuro MTA directors select the qualifying exam committees. Generally, one Neuro MTA Co-Director is on every exam for consistency. We also solicit from each of you the names of any faculty that you would particularly like to have on your committee, and any faculty that you would particularly NOT want on your committee. We encourage students to study together for the exam, and especially encourage senior students to provide "mock" qualifying exams to students preparing to take the exam. If a student does not pass on the first round, they have one more chance to take and pass the exam. Passing this General Knowledge exam is required to "advance" to candidacy, allowing you to move forward in the program to the next phase which is your thesis proposal.

5. **Preparing and defending your thesis proposal**

Typically, MSTP students assemble their thesis proposal sometime during Year 3. By this time, rotations are finished, the Core class has been completed, the General Knowledge exam has been passed, and you have identified a mentor who has agreed to support you in the laboratory for your thesis project. The thesis proposal document follows precisely the format of the Ruth L. Kirschstein NRSA (National Research Service
Award), the NIH predoctoral fellowship (http://grants.nih.gov/grants/guide/pa-files/pa-11-111.html). Briefly, this is one-page for your Specific Aims, followed by a maximum of six-pages for Background and Significance, Preliminary Data and Research Strategy. References are not counted as part of the six-page limit (but figures are counted as part of the six-page limit). You are not required to have extensive preliminary data, but you should be able to demonstrate that your ideas are well-grounded and the methods you propose are appropriate and feasible. You will present your research plan to your thesis proposal exam committee in a formal oral presentation format. The Thesis Proposal Exam Committee consists of your 3-member Dissertation Advisory Committee plus one additional faculty member (so at least 4 members, one of whom will be nominated to chair the committee by one of the MTA Co-Directors; in addition, your preceptor must be present for this exam). A registration form for the thesis proposal exam, signed by one of the MTA Co-Directors, must be submitted to the Graduate School. The dissertation advisory and thesis proposal committees are chosen by you and your preceptor. The idea is to pick committee members that have particular expertise--either conceptual or methodological--who can help you accomplish your scientific goals. Unlike the General Knowledge exam, you are not required to have a Neuroscience MTA director serve on your dissertation committee. At the time when you defend your thesis work, your Dissertation Advisory Committee--plus one additional member from outside Mount Sinai--will serve as the final Thesis Defense examining committee.