

# MEDICAL SCIENTIST TRAINING PROGRAM

Visit program website. (<https://mstp.ucsf.edu/>)

## Program Description

The Medical Scientist Training Program (MSTP) at UCSF is designed to train the next generation of physician-investigators by offering a rigorous, integrated, and supportive educational experience leading to both the MD and PhD degrees. MSTP offers a combination of an outstanding public medical school with an innovative curriculum, committed and renowned faculty, and a collection of premier graduate training programs. Leadership includes Director Aimee Kao, MD, PhD, and three associate directors who are accomplished physician-scientists with complementary areas of scientific expertise: Catherine Lomen-Hoerth, MD, PhD; Mercedes Paredes, MD, PhD; and Dean Sheppard, MD. The MSTP Council includes 38 distinguished investigators who advise students, screen applicants for admission, serve on PhD thesis committees, and participate regularly in other MSTP activities.

## Training Program

The MSTP training sequence generally consists of the one-and-a-half pre-clerkship years of medical school, followed by four years of graduate research leading to a doctoral dissertation, and the final five quarters of medical school clinical clerkships. This curriculum enables students to complete their MD/PhD training as efficiently as possible while still maintaining the highest standards for both degrees.

**Medical School Years.** UCSF's medical curriculum provides a set of educational experiences designed to support students' mastery of the core knowledge and skills needed to achieve their goals as physicians, researchers, teachers, and public servants: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal/Communication Skills, Professionalism, Systems-Based Practice, and Interprofessional Collaboration. Achievement of these competencies is assessed through written and laboratory practical examinations, structured clinical examinations, instructor and peer assessments, and self-reflection exercises. Students are assigned an MSTP faculty adviser with whom they meet quarterly in the first two years of medical school to decide on rotation labs, a graduate program, and assess required course work to ensure a smooth transition into graduate school. Journal Club introduces original research papers and promotes informal discussion about laboratory research between MSTP students and their medical school classmates in the first two years of medical school; and MSTP Seminar Series introduces students to potential research topics and faculty mentors. Lab Rotations: Summer prior to first year of medical school (optional), after first year and again after completing USMLE Step 1 exams in the second year. A minimum of two are required and up to four are acceptable.

**The Graduate Programs.** Each student chooses their graduate program during their second year of medical school and enters graduate school after completing the USMLE Step 1 examination. The students have already completed two laboratory rotations and begin thesis work while taking any remaining graduate courses. Since many have completed coursework during the first two years of medical school, this positions students to take their qualifying exams at the end of the third year or early in the fourth year. They remain full-time graduate students until they complete their thesis work and have written an approved dissertation. Each graduate program establishes policies for thesis committees, but

MSTP students are required to have at least one MSTP Council member on her/his committee, providing programmatic oversight and ensuring optimal progress towards completing PhD thesis work. Students are required to meet with their thesis committee every six months. During graduate school, students can take a Clinical Preceptorship, an elective designed specifically to allow MSTP students to maintain their clinical skills and interests during graduate school. Clinical Case Reviews is a vehicle for PhD-phase MSTPs to practice generating differential diagnoses, presenting orally, and discussing next steps for treatment and prognosis. Into the Clinic is an intensive re-introduction to clinical medicine for MSTP students completing graduate studies and planning to return to medical school.

**Time to Degree.** MSTP has implemented policies to reduce the time to degree, which include:

- Optional early summer lab rotations and early choice of a thesis lab;
- The temporal integration of graduate program course opportunities with the medical school curriculum;
- Reducing required graduate program electives;
- Decreasing required lab rotations from three to two;
- Requiring earlier qualifying exams; and
- Timely reviews by thesis committees (every six months).

These policies and programs have contributed to a continued reduction in time to degree to 8.6 years within the past ten years.

## Mentoring and Evaluation of Students

Throughout the training program, students receive mentoring, evaluation and guidance from both their Medical MSTP and PhD advisers.

**Graduate Training.** Students are assigned academic advisers and meet quarterly during the first year of the PhD. After advancing to candidacy and forming their thesis committee, they meet every six months. The MSTP administration tracks these milestones and works with the PhD administration to assist students who may be experiencing difficulties.

**Medical School.** Students are assigned a College Advisory Mentor who also holds an MD/PhD who advises and guides the students through clinical training.

**Clinical Faculty Advisers for Students Reentering Medical School.** Students returning to medical school are assigned a physician-scientist faculty adviser to advise them in the selection of clinical specialties for residency application.

## Additional Information

Contact for questions and additional info:

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