

individual student.

2. Supervision of the student is adequate and well-documented. The sponsor need not be a UCSF faculty member. But the sponsor must be qualified to supervise the project and must provide a letter confirming his or her support for the project and specifying the amount of time s/he expects to be available to spend with the student. The Committee advises all students considering off-site projects to discuss the qualifications of the proposed sponsor with Drs. Lowenstein (lowenstein@medsch.ucsf.edu) or Lomen-Hoerth (catherine.lomen-hoerth@ucsf.edu) before committing to the project.

3. Appropriate facilities are available. The sponsor's letter must indicate that all of the facilities necessary to the project are available to the student. This includes any necessary laboratory facilities, office space, specimens, access to study populations, computers, and any other facilities needed to complete the project. The student must either demonstrate fluency in the primary language spoken at the site of the project or must have guaranteed access to translators. If translators are needed, the sponsor's letter must state that translators will be provided and that all necessary arrangements will be made prior to arrival of the student at the site.



4. The scope of the project is appropriate to the time available and advance preparations are in progress. Our experience is that most successful off-site projects require considerable advance preparation and follow-up after the student returns to UCSF. You can increase your chances of funding by demonstrating that you have carried out the initial steps in the project. For example, if your project involves administration of a questionnaire, you should include a semifinal draft of the questionnaire (in both English and the local language) with your application.

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Application Forms

Completed applications must be submitted via email to:

Mario.Mercurio@ucsf.edu

- [Summer Research Application](#)  (Acrobat PDF)
- [Summer Research Application](#)  (Word Format)
- [UCSF IRB approval policy](#)

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UCSF School Of Medicine

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- **M.D. with Thesis**

- **Dean's Prize and Poster Session**

- **Additional Funding Options**

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Overview

Quarterly grants are available to third and fourth year students who will commit at least one quarter to a mentored research project. The project may be a continuation of research begun earlier in school, perhaps as an extension of a project started with a Summer Fellowship, or it may be a new project.

The program is administered by the Office of Curricular Affairs and applications are reviewed by either the Student Research Committee or by ad hoc reviewers from the Faculty. Students are expected to work full time on the research.

Each student whose application is approved receives a stipend of \$4000 for a three month project. Three month projects can be conducted without prolonging time in school. Longer projects require extending to a five-year program. **Students may apply for a maximum of two successive grants.** The stipends are intended to defray student living expenses during the research period. The cost of supplies or other support for the research are the responsibility of the sponsor. These grants are not available to support research of students in the MSTP or other advanced degree programs.

Fellowship Deadlines:

- Fall Quarter: July 15
- Winter Quarter: October 15
- Spring Quarter: January 15
- Summer Quarter: April 15

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Choosing a research sponsor

The process for this is similar to that for the Summer Research Fellowships. Generally the sponsor will be a member of the UCSF Faculty; however, outside research will be considered if sufficient justification for the off-site location is provided. The application must contain an appropriate description of the project by the student and support from the faculty sponsor.

If you have any questions about the process for Quarterly Research Fellowships, email Mario Mercurio (mario.mercurio@ucsf.edu) or Drs. Lowenstein (lowenstein@medsch.ucsf.edu) or Lomen-Hoerth (catherine.lomen-hoerth@ucsf.edu).

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Application Forms



Completed applications must be submitted via email to:

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Mario.Mercurio@ucsf.edu

- [Quarterly Research Application](#)  (Acrobat PDF)
- [Quarterly Research Application](#)  (Word Format)
- [UCSF IRB approval policy](#)

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(HHMI, DDCF, NIH, Genentech & Sarnoff)

- **Genentech Fellowship**
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One year (occasionally two) research programs are available through a variety of sources; however, they are very competitive. Typically, about one-half to two-thirds of UCSF students who apply for such programs are successful in obtaining funding. The year-long block can be taken between second and third or third and fourth years. These programs generally begin in July and continue through the following June, although some flexibility for a slightly later start/finish date may be possible, depending on the agency.

If you extend your program, you may choose to remain enrolled or take a leave of absence. Your decision on this should be based on several factors. First, you should consider the financial implications. If you remain enrolled, you must pay registration fees. If you are not enrolled, you need to obtain health insurance, you may be required to begin repayment of your educational loans, and you will not be eligible for financial aid. Second, will you have any clinical responsibilities during your research year. If you have patient contact (either as part of the research or in a volunteer setting), you must be enrolled in order to be covered by UCSF's malpractice insurance. Finally, do you want credit for your research hours. You can get elective credit only if you remain enrolled.

If you decide to extend your program, you must obtain approval of the Associate Dean for Student and Curricular Affairs and complete a [Request for an Extended Program](#) form, available from the Office of Curricular Affairs. If you are planning to take a leave of absence from school for the duration of your project you must notify the Registrar by filing a Withdrawal Petition, available in the [Registrar's Office](#).

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There are several agencies, foundations and subspecialty scientific societies that offer year-long fellowships for biomedical research. All provide stipends in the neighborhood of 20-25K per annum.

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Howard Hughes Medical Institute (HHMI) Fellowships. \$25,000 stipend, \$5,500 research allowance (for supplies) and a \$5,500 fellows' allowance. These are one-year, with a possibility of a second year

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extension, that support primarily lab-based, basic science research projects. Typically, the research is done at your home institution; however, students can work with investigators in other medical schools. **Applications are due January 11, 2007.**

HHMI-National Institutes of Health (NIH) (Cloisters). Annual salary of \$25,000, payment of moving expenses and health benefits. This is a program jointly supported by the HHMI and the NIH. Basic, translational or applied biomedical research is conducted at the NIH. The lab and project are chosen after arrival at the NIH. Students live in the Cloister, a community on the NIH campus. All Scholars must live at the Cloister. Moving expense reimbursement is provided. **Applications are due in January 10, 2007.**

NIH-Clinical Research Training Program. \$28,400 stipend, health insurance and payment of moving expenses to and from Bethesda. This program also involves research done on the NIH campus in one of their clinical research programs. Research may have some laboratory aspects as well. **Applications are due January 2007.**

General Clinical Research Centers-NIH. This program started in 2000. Research must be done within the home institution and must be a study which is being conducted within one of the Clinical Research Centers at that institution. There are three CRCs at UCSF, the GCRC at Parnassus, the GCRC at SFGH and the Pediatric CRC at Parnassus. Students can review the existing research protocols at any of our CRCs and propose to work with the Principal Investigator. There is also an educational curriculum which each institution must develop, including formal classwork in clinical research methods, study design, biostatistics, human subject protection and the ethical use of animals in biomedical research.


General Clinical Research Center at Parnassus

General Clinical Research Center at SFGH

Pediatric Clinical Research Center at Parnassus


Doris Duke Charitable Foundation Fellowship.

\$27,000 stipend, fees for didactic coursework paid by the grant. This program was initiated in 2001. UCSF was one of ten medical schools to be awarded DDCF Fellowships. Fellowships consist of a combined didactic and practical experience in clinical research.

, you should apply through the **PACCTR Program**. If you plan to apply to schools outside UCSF for the one-year medical program, you should apply to those schools through the **Doris Duke Foundation**. Applications are due **January 17, 2007.** 

Doris Duke Charitable Foundation International Clinical Research Fellowship in Africa Fellowship includes a \$27,000 stipend, plus round trip travel to Africa and study-related expenses. This is a one-year mentored clinical research opportunity, based in Africa, ideal for second and third-year medical students considering international clinical research as a possible career path. Please note prospective students will be required to choose from one of the sites and PIs listed on the website.

Students should contact their PI of interest from our list and submit a research proposal prepared with that PI that will be reviewed as part of the initial application. Students will participate in the Designing Clinical Research Course at UCSF starting late July-mid Sept and then will concentrate their research time in Africa from late Sept-early May. Those interested in less than 6 months research abroad or in research outside of the listed projects or countries should apply through the PACCTR program instead. If you plan to apply to schools outside UCSF for the one-year medical program, you should apply to those schools through the Doris Duke Foundation. Applications are due **January 17, 2007**.

Pathways to Careers in Clinical and Translational Research (PACCTR). Initiated in 2005, the PACCTR Program supports clinical research training for medical, dental, nursing and pharmacy pre-doctoral students for short-term (two-month summer fellowships or quarterly three-month fellowships) and intensive (one-year or two-year) fellowships. Fellowships consist of a combined didactic and practical experience in clinical research. Medical students participating in the one-year program will be asked to write a thesis based on their work and will graduate with an " " designation. Students participating in the two-year program will be awarded a Masters in Clinical Research degree. 

Stipends and Application due dates:

Two-month summer student fellowship \$3,454

- due **April 16, 2007**

Three-month quarterly student fellowship \$5,181

- due **Jan 16, April 16, July 16, or Oct 15, 2007**

(4 months prior to start of fellowship)

One-year student fellowship \$25,000 - due **January 17, 2007**

Two-year student fellowship \$25,000 per year

- due **March 13, 2007**

In addition to the stipend the fellowships will include an annual fellow's allowance, and/or tuition, health insurance, mentor payment and an annual research allowance. The one and two year fellowships will also include a travel allowance to attend the national student's research meeting.

Short-term and one-year applicants should apply through the PACCTR website.

Two-year Masters in Clinical Research program should apply through the

Genentech Foundation Fellowship. One, one-year fellowship is offered through the Office of Curricular Affairs and the Student Research Program, funded by the Genentech Foundation. **Applications are due April 16, 2007.**

XDx Fellowship in Molecular Diagnostics. The Fellowship consists of a year-long supervised program in the Clinical Development group at XDx with the objective of developing strong research skills in the area of molecular diagnostics. XDx will provide a one-year \$25,000 research fellowship including health care benefits. One fellowship will be available beginning **January 2007**.

Linker Fellowship in Biomedical Research. The Linker Fellowship provides funding for students pursuing a year of full-time, biomedical research based here at UCSF. The fellowship provides a stipend of \$20,000, and is intended to support high-quality work in any area of biomedical science, although there is a preference for basic or translational research. Up to two Linker fellowships will be awarded each year. The application process is identical to that for a year-long Genentech Fellowship. **Applications are due April 16, 2007.**

Pathways to Discovery Research Fellowship. The Pathways to Discovery Fellowship provides funding for students pursuing a year of fulltime, biomedical research based here at UCSF. The fellowship provides a stipend of \$23,000, and is intended to support high-quality work in any area of biomedical science, basic or translational research. Up to five Pathways fellowships will be awarded each year. **Applications are due April 16, 2007.**

Subspecialty fellowships are offered in research targeted areas...

- [Sarnoff Foundation](#) (cardiovascular disease). Applications are **due January 9, 2007**
- [American Society of Nephrology](#) (kidney disease)
- [American Diabetes Association](#) (diabetes)
- [Centers for Disease Control](#) (epidemiology)
The Centers for Disease Control and Prevention (CDC) are seeking applications for their CDC Experience fellowship program. The CDC Experience provides third- and fourth-year medical students with a 10-12 month placement at the CDC offices in Atlanta, GA. Fellows carry out epidemiologic analyses in a wide range of public health issues, including parasitic diseases, cardiovascular health, birth defects, foodborne diseases, and air pollution and respiratory health. CDC Experience graduates have the potential to become future physician-leaders and substantially contribute to the quality of the health care system. Applications must be postmarked by Dec. 4.
- [NIH Year-off Training Program for Medical Students](#)

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Application Forms

Applications for these programs are due in April.

Completed applications must be submitted via email to:

Mario.Mercurio@ucsf.edu

- [Linker Fellowship Application](#) 
- [Linker Fellowship Application](#) 
- [Pathways to Discovery Fellowship Application](#) 
- [Pathways to Discovery Fellowship Application](#) 
- [UCSF IRB Approval Policy](#)

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These fellowships are available only to UCSF Medical Students.

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Overview

The Genentech Foundation is offering two short-term research fellowships of \$3750 each. UCSF medical students who are currently in the second or third year and who are planning to carry out full-time research for three or more months may apply. You do not need to enter a five-year program to obtain one of these short-term fellowships. The Genentech Foundation has not specified the type of research to be funded, and applications for research in any field appropriate to medicine will be accepted. The fellowships may be used during any continuous three-month period between May 1 and May 1 of the following year.



The Genentech Foundation is also offering a \$22,500 research fellowship (\$19,000 stipend, \$3500 for registration or other education-related expenses). Second- and third-year UCSF medical students who are planning to carry out full-time research for an entire year may apply. The fellowship may be activated as early as July 1 or as late as September 1.

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Application Forms

Completed applications must be submitted via email to:

Mario.Mercurio@ucsf.edu

- [Genentech Foundation Fellowships Application](#) 
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- [Applications](#)
- [Past Participants](#)

Overview

In 1988, the School of Medicine created the M.D. with Thesis Program to provide academic distinction for students who conduct original research of high quality while in medical school. The distinction of M.D. with Thesis is awarded at graduation to those students who, in addition to fulfilling all of the requirements for the degree of Doctor of Medicine, have completed a research project and have written a thesis approved by the governing committee of the M.D. with Thesis Program.

Students may conduct thesis research in any of a wide variety of disciplines, including basic sciences, clinical investigation, social sciences, and ethics.

The fundamental requirement for the program is that the work be original and of scholarly quality. Research may be conducted at UCSF or at other institutions, subject to approval by the M.D. with Thesis Committee.

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Completing the Application Form

To apply to the program, first select a research sponsor and then submit a description of the proposed research to the M.D. with Thesis Committee.

Application forms are available below and are reviewed in February, April, September and November of each year.

Applications must be received by the first day of a review month to be reviewed during that month's session. (Example: Applications received between February 2 and April 1 will be reviewed in April)

If your proposal is approved, the committee will appoint a three-member thesis committee, which is charged with overseeing your thesis effort, providing help and guidance during your research project and during the writing of your thesis.

The deadline for submission of your thesis to your thesis committee is February 15 of the year you graduate.

If you are interested in the M.D. with Thesis Program you should discuss your plans with **Dr. Jorge Oksenberg** (Jorge.Oksenberg@ucsf.edu) who chairs the M.D. with Thesis Committee, or with **Dr. Dan Lowenstein** (lowenstein@medsch.ucsf.edu).

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Tushar Ranchod	Parent Perceptions of Care for Premature Infants: Counseling and Decision-Making in South African Public Hospitals
Karen Shih	Molecular Determinants of Syntaphilin Synaptic Targeting
Lisa Tibor	Characterization of a Collection of <i>Staphylococcus aureus</i> Wound Isolates
Molly Yancovitz	Genetic Determinants of Fatty Acid Homeostasis in Nonalcoholic Steatohepatitis
2003:	
Nicholas Costouros	Functional Imaging of Tumor Angiogenesis in Mice
Theresa Gurney	Chemokine Ligand & Receptor Expression in the Developing Murine Nervous System
Daniela Kim	Search for Genetic Contribution to the Neurotoxic Effects of Thimerosal (ethylmercury) in Mouse Strains
Nader Sanai	Adult Human Astrocytes That Function as Neural Stem Cells
Phuong Dai Vo	Human Papillomavirus and Cervical Cancer in Vietnamese American Women
2002:	
Tamiko Katsumoto	The Role of GM-CSF in Hematopoietic Engraftment
Catherine Liu	<i>Staphylococcus aureus</i> with Heterogeneous Resistance to Vancomycin: Prevalence and Risk Factors for Colonization
Alexander Papanastassiou	The Cannabinoid Receptor Agonist WIN 55,212-2 Differentially Affects Nociceptive and Non-Nociceptive Neurons
2001:	
Michael Cho	Reactive Oxygen Species Stimulate Macrophage Release of Vascular Endothelial Growth Factor (VEGF)
Eric Chow	History of Blood Transfusion and Risk of Non-Hodgkin's Lymphoma
Courtney Fitzhugh	A Novel Nonmyeloablative Bone Marrow Transplantation Regimen: Rapamycin or Cyclosporine to Induce and Maintain Stable Mixed Chimerism in a Murine Model of Sickle Cell Disease
Rebeca Plank	Immunopathogenesis and Persistence of <i>Chlamydia trachomatis</i> in Trachoma
Ahmad Sheikh	Hyperoxia Mediated Vascular Endothelial Growth Factor Production and Angiogenesis
Vanessa Teplin	Predictors of Condom Use and the Prevalence of Gonorrhea and Chlamydia Among Incarcerated Female Adolescents
2000:	
J. Michael Caruso (Flican 1 Paraz-	A Demographic & Clinical Comparison of American Indian Emergency Department Patients with Emergency Department

(ENSCO J. F. F. C. Z.
Stable, MD)

Patients of other Ethnicities at San
Francisco General Hospital

Nouzhan Sehati

Detection of Autocrine Stimulatory Signals
involving Platelet-Derived Growth Factor,
Vascular Endothelial Growth Factor, and
Epidermal Growth Factor, and the Effects of
a Recombinant Pseudomonas Toxin on
Human Malignant Meningiomas

(Michael McDermott,
MD)

Past Participants from 1989-2000

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UCSF School Of Medicine

School of Medicine > Education & Training > Areas of Concentration Program

School of Medicine > Education & Training > Areas of Concentration Program

- **Community Health/ Advocacy**
-
- **Humanities**
- **Social Sciences in Medicine**
- **Medical Education**
- **The Health Care System**
- **The Science of Medicine**

The Area of Concentration in Global Health has been developed with consultation from faculty and students, and after exploration of similar academic programs in other institutions. It promises to be a unique opportunity in medical education at UCSF. The components of the Global Health AoC are designed to stimulate student interest in global health problems, prepare students for international experiences, and provide exposure to various career and practice opportunities in global health. Certain components are required for completion of the Area of Concentration, and others are recommended.

The first step in getting involved in the AoC is to log onto iROCKET, go to the "Areas of Concentration" course, select the AoC that interests you, and fill out the Interest Form. You should also speak to Dave Backman in the Office of Curricular Affairs (S-221).

- Topics in International Health elective course (recommended in first year)
- Preparation for International Health Field Experiences workshop (recommended, offered twice per year)
- Early International Experience (recommended between first and second year)
- Mentorship by UCSF Faculty (required)
- Global Health Core Course (Summer Qtr., during third or fourth year, required)
- Fifth-Year Option (recommended)
- International Health Practicum project (2-6 months, required)

Topics in International Health (Epidemiology & Biostatistics 180.10) elective course

This course is designed to stimulate interest in global health issues by presenting a diverse offering of topics including health promotion and project planning, infectious disease control and epidemiology, tobacco in developing countries, poverty and health, human and natural disasters and maternal, child and reproductive health. It is intended to introduce first- and second-year medical students to the world of global health. The first offering will be winter quarter (January-March) 2004.

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Preparation for IH Field Experiences

This half-day workshop will be offered twice per year. The first offering was completed in May 2003 with positive evaluations from the attendees. The session includes discussions of cultural sensitivity, case studies of field experience, practical aspects of traveling such as personal safety, necessary documents and travelers' health issues as well as panels with invited guests. Agenda

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Early International Experience (summer)

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This optional international experience is intended for the time period between the first and second years of medical school with the broad goals of learning another language, experiencing a different culture, joining an ongoing research project, shadowing physicians and learning about different health care delivery systems.

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Mentorship by UCSF Faculty

Students will be encouraged to identify a faculty mentor who may assist the student in finding a suitable senior elective project in global health. Research activities are emphasized, and the OIP will soon have a broad listing of faculty who may be approached with mentorship requests.

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Global Health Core Course (Summer Block 2)

This is an intensive four-week summer course covering a variety of topics in much greater detail than the introductory elective and focusing on case discussions and integration of the many issues that influence global health such as, poverty, politics and the development process in addition to the clinical aspects of health care in developing countries. The course is intended for fourth-year students prior to undertaking the international practicum experience, as well as third-year students who are taking a year off to pursue an MPH degree or international work, and motivated first-year students who are between their first and second years. For UCSF students pursuing an MPH degree from UC Berkeley who elect to complete an Area of Specialty in global health, the UCSF course will satisfy the international health core course requirement at UCB. Although the course will not carry any units of credit toward the MPH degree at this time, we intend to propose the plan to the curriculum committee in the School of Public Health for UCB course credit once the course has been proven.

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Fifth-Year Option

It is highly recommended that students pursuing a concentration in Global Health extend their medical education by a year in order to incorporate in-depth opportunities in International Health. This experience should be arranged in cooperation with a mentor and could take the form of an MPH program, and NIH or CDC fellowship emphasizing Global Health, or an individual project designed by the student and a mentor.

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International Practicum

In comparison to the international experience during the summer between first and second years of medical school, the practicum is intended to be a much more focused project (either clinical or research) lasting three to six months. The student will be expected to produce a project report and give a presentation at the Student International Health Symposium during the spring of their fourth year. It is also expected that some students will expand their research project reports enough use them as the basis for an MD with thesis.

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For further information, please [contact the Office of International Programs](#).

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- **Global and Public Health**
- **Humanities**
- **Social Sciences in Medicine**
- **Medical Education**
- **The Health Care System**

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The "Science of Medicine and the Physician-Investigator" concentration offers medical students the opportunity to explore the wide and far-reaching world of biomedical research, ranging from basic, laboratory-oriented research to the clinical sciences. In keeping with the overall philosophy of the medical school to emphasize leadership, scholarship and discovery in our education programs, the Science of Medicine and the Physician-Investigator AoC is meant to provide an individualized program of study which will enable students to:

- develop a deeper understanding of the scientific basis of medicine that goes beyond what is offered in the core curriculum,
- achieve a greater understanding of the process and methods of scientific discovery,
- gain further experience in communicating advances in biomedical research,
- appreciate the opportunities and challenges that exist in academic medicine, and
- recognize the way in which scientific discoveries can translate into major advances in the health of society.

As described in further detail below, students completing the Science of Medicine and the Physician-Investigator AoC also fulfill the requirements for graduating with the honor of "M.D. with Thesis."

The spectrum of activities falling within the rubric "Science of Medicine" is meant to be quite broad. This includes:

- the fundamental sciences such as biophysics, cell biology and bioinformatics
- "translational," human-oriented research such as human genetics, imaging and immunotherapy
- epidemiologic or behavioral research such as clinical trials of therapeutic interventions, environmental studies, or social science research.

In all cases, the emphasis is on delineating the limits of what we do and do not understand about a particular problem in medicine, proposing hypotheses based on existing knowledge, and designing scientific approaches to rigorously test these hypotheses.

The AoC program is designed to accommodate students who have no prior experience in research as well as those with extensive research backgrounds. An extraordinarily diverse array of research opportunities

exist at UCSF, and many faculty are dedicated to helping students learn more about the process of scientific investigation and to convey the knowledge, skills and attitudes that are required for this aspect of the practice of medicine. Thus, students are encouraged to seek out the area of biomedical research they find most exciting and promising, and to work with faculty who they feel will provide the best educational experience. The only prerequisites are a sincere interest in learning about research and a serious commitment to fulfilling all the components of the AoC course of study.

Given a number of differences between the type of training and methodology in laboratory-oriented research and the clinical science, the Science of Medicine and the Physician-Investigator AoC offers two pathways from which to choose:

- [Basic Sciences Pathway](#)
- [Clinical Sciences Pathway](#)

Both the training requirements and timeline for these two pathways differ as described below.

Students may enter into either pathway of the Science of Medicine and the Physician-Investigator AoC at any time prior to the final year of medical school. Regardless of the entry point into the program, students are encouraged to devise a schedule that will allow for a sustained, full-time effort in research. At a minimum, this should be 3-4 months. However, as anyone involved in scientific investigation knows, research, especially research that is novel and creative, is characterized by the unexpected and the unpredictable, and it requires hard work, persistence and patience. Thus, students pursuing this AoC should carefully consider the merits of a five-year course of study during medical school that includes 9-12 months of full-time research. As noted elsewhere in information describing the UCSF School of Medicine M.D. program, there are many programs and resources available to enable students to develop a five-year plan in a way that results in little, if any, additional financial burden.

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Similar to other topic areas in the AoC program, students declaring the Science of Medicine and the Physician-Investigator AoC fulfill requirements in three main areas:

1. Preparatory Studies
2. [Research Experience](#)
3. [Legacy](#)

Preparatory Studies

The Preparatory Studies component is quite different for the [Basic Sciences](#) and [Clinical Sciences](#) Pathways as described below.

Research Experience

The Research Experience component must meet the requirements of the [M.D. with Thesis](#) program. With guidance from a faculty sponsor, students must devise a research project that addresses an interesting and important question, utilizes rigorous methods of data collection and analysis, and provides an opportunity to work in a high quality research environment. The research plan is presented to the M.D. with Thesis Committee by no later than the spring before the final year of medical school, where it is reviewed and considered for approval (Students with proposals not initially meeting the standards of the [M.D. with Thesis](#) program will receive feedback on how to improve their plan and will be encouraged to reapply). Once the research plan is approved, the

student will be assigned a three-person thesis committee (comprised of the student's research sponsor, a member of the M.D. with Thesis Committee, and another faculty member who has expertise in the proposed research) which will be responsible for keeping track of the progress of the student, providing guidance as needed, and reading and approving the thesis itself.

In most cases it is expected that the student's research will be carried out under the direct supervision of a UCSF faculty member. However, some students may prefer to pursue projects at other institutions. This option will only be considered for students who wish to spend a full year devoted to a research project (i.e., are committed to a 5 year medical school program). There should be a compelling reason to undertake research away from UCSF. A clearly defined project under the supervision of an accomplished investigator is mandatory, and the student and the prospective mentor are required to identify a member of the UCSF faculty who will act as a liaison.

Legacy

The Legacy component of the AoC is meant to insure that students take the opportunity to carefully review the results of their research experience, interpret the potential meaning of the results in the context of current scientific knowledge, and convey this thinking to others. This is accomplished in the form of a thesis, as defined in the requirements of the M.D. with Thesis program. Students are also strongly encouraged to write a manuscript describing their research that is submitted for publication. Typically, the writing of the thesis provides the framework for writing the manuscript, or vice versa.

Further details regarding the _____ program can be found at the _____ website.

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Preparatory Studies

The Preparatory Studies component in the Basic Sciences Pathway aims to help students learn more about the general approaches of basic science, analyze and critique scientific publications, and delve into at least one topical area in detail. To satisfy the requirements, students must devote a minimum of 50 hours to a combination of formal coursework, journal clubs, and didactic seminars highlighting advances in laboratory-based or translational research and career paths in biomedical research. Options for Preparatory Studies in the Basic Science Pathway include the following:

1. Attendance in the "Pathways of Discovery" Lecture Series, a series of monthly lectures organized by medical students in which physician-scientists describe their scientific work and the manner in which their careers developed. (Approx. 15 hours available per year)
2. Participation in the Medical Student Journal Club held at noon most Wednesdays during the academic year, during which students present and analyze current articles from the scientific literature. (Approx. 25 hours available per year)
3. Enrollment in elective courses designed specifically for this AoC, such as the spring elective entitled "Foundations of Scientific Inquiry" (Physiology 198).
4. Enrollment in graduate level courses that concentrate on specific areas of biomedical science. These may be taken at UCSF, UC Berkeley, or similar institutions.
5. Independent study of an area of biomedical research under the direction of a UCSF faculty member and qualifying for academic

credit.

Students are expected to devote time to both the more informal learning opportunities (i.e. options #1 and 2 above) and formal coursework (options #3-5).

Research Experience

There are no restrictions as to when this work is done, other than the need to devise the research plan and obtain approval from the M.D. with Thesis Committee before commencing with the research experience itself.

Legacy

As described above under "General Requirements."

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Students electing the Clinical Sciences Pathway will follow a course of study that begins with general planning for the research topic in the middle of the 3rd year (or middle of 4th year in a 5-year plan) followed by a period beginning in August that includes an intensive, full-time course on clinical research followed by the research experience.

Preparatory Studies

The Preparatory Studies component in the Clinical Sciences Pathway has a prescribed timeline as detailed below:

- Winter/Spring Quarter: Work with AoC Coordinator and potential faculty mentor to identify area of interest, develop a research question, and identify a feasible project and source of data.
- Spring Quarter: Submit a proposal for the M.D. with Thesis Program, receive approval and assignment of thesis committee.
- August: Take "Introduction to Clinical Research" course, which typically meets two days a week for the entire month.

For more information, please contact [Dr. Tom Novotny](#).

Research Experience

The research experience may begin immediately after the "Introduction to Clinical Research" course, although students may start anytime as long as they have devised the research plan and obtained approval from the M.D. with Thesis Committee before commencing with the research experience itself.

Please note that virtually all projects conducted within the Clinical Sciences Pathway will require approval by the UCSF Committee on Human Research before any data collection efforts are undertaken.

Legacy

As described above under "General Requirements."

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The first step in getting involved in the AoC is to log onto iROCKET, go to the "Areas of Concentration" course, select the AoC that interests you, and fill out the Interest Form. You should also speak to [Dave Backman](#) in the Office of Curricular Affairs (S-221).

Students must complete a preliminary proposal that specifies the student's AoC advisor(s), and includes information on background, plans for Preparatory Studies, and a general timeline. Students do not need to designate a specific area of research or have details on the planned research experience at the time of the initial application, since

it is expected that many students will use Preparatory Studies to explore their potential interests.

The preliminary proposal will be reviewed in a timely manner by the Steering Committee of the Science of Medicine and the Physician-Investigator AoC. Students should be prepared to undertake modifications of their proposals based on the committee's review.

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Students are required to complete their research project and submit their thesis to the M.D. with Thesis Committee by February of the year of graduation, and submit a brief [AoC summary](#) (or [AoC summary](#)) to the Student Research Office by no later than 3 months before their planned date for graduation from medical school.

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Student Advisors

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A wide range of funding opportunities exist for the support of student research. These are described in detail at the [Office of Student Research website](#).

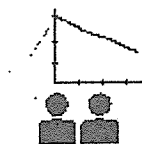
TOP

臨床研究の企画や方法論のトレーニングプログラム

Department of Epidemiology and Biostatistics



ICR



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Summer, Fall, Winter, and Spring
Director: Jeffrey N. Martin, MD, MPH

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OVERVIEW

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ATCR is a four academic quarter program intended for advanced pre-doctoral students, post-doctoral fellows and faculty members who desire rigorous training in the methods and conduct of clinical research. This includes instruction in the epidemiologic and biostatistical methods used in observational and experimental clinical research as well as training in the oral and written presentation of clinical research. In addition to required coursework, scholars are expected to develop and implement their research projects throughout the year and will have access to TCR faculty for methodologic guidance. Trainees achieving program objectives are granted a Certificate of Program Completion.

OBJECTIVES

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1. Learn the methods required to perform both observational and experimental clinical research.
2. Plan and implement one or more clinical research projects.