

Experimental Pathology

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Dan Mercola, Departmental Graduate Advisor

Medical Sciences I, Building D, Room D440

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<http://www.pathology.uci.edu/>

The Department of Pathology and Laboratory Medicine offers a Ph.D. in Biomedical Sciences with a focus on Experimental Pathology. The graduate program emphasizes experimental approaches to better understand the molecular and cellular mechanisms of disease, particularly human disease. Principal areas of research investigated by faculty in Experimental Pathology include concentrating studies in microbial genomics, innate immunity, cellular stress, stem cell biology, developmental neurobiology, cancer, and neurodegenerative disease.

The Department of Pathology & Laboratory Medicine offers a graduate program in Experimental Pathology. Application to Experimental Pathology is generally through one of two "gateway" programs, which offer multidisciplinary graduate training under the heading of Cellular and Molecular Biosciences (CMB) (<https://cmb.uci.edu>) or the Interdepartmental Neuroscience Program (INP) (<https://inp.uci.edu>). Members of the Pathology faculty participate in the CMB and INP programs.

The CMB and INP programs include a first-year curriculum and the opportunity to rotate through two or more research laboratories. For the CMB program, students select a specific area of interest from ten areas of academic study, one of which is Experimental Pathology. Experimental Pathology emphasizes experimental approaches to better understand the molecular and cellular mechanisms of disease, with a focus on human disease. After the first year in the CMB or INP program, students interested in Experimental Pathology will join the laboratories of faculty within the department or the laboratories of approved affiliated faculty.

Students should advance to candidacy by the end of their third year. The normative time for completion of the Ph.D. is five years, and the maximum time permitted is seven years.

Faculty

Daniela A. Bota, M.D., Ph.D. Carol Davila University of Medicine and Pharmacy, *Chief Scientific Officer, Center for Clinical Research and Vice Dean for Clinical Research and Associate Professor of Neurology; Neurological Surgery; Pathology and Laboratory Medicine*

Jefferson Chan, M.D. Ph.D. University of California, San Francisco, *Professor of Pathology and Laboratory Medicine; Environmental Health Sciences*

Vishal S. Chandan, M.D. Maharashtra University of Health Sciences, *Health Sciences Clinical Professor of Pathology and Laboratory Medicine*

Peter Chang, M.D. Northwestern University, *Assistant Professor in Residence of Radiological Sciences; Computer Science; Pathology and Laboratory Medicine*

Daniel Chow, M.D. University of California, Los Angeles, *Assistant Professor in Residence of Radiological Sciences; Neurology; Pathology and Laboratory Medicine*

Bridgit O. Crews, Ph.D. University of California, Santa Barbara, *Health Sciences Assistant Clinical Professor of Pathology and Laboratory Medicine*

Maria G. Dacoste-Iyer, M.D. Topiwala National Medical College, *Health Sciences Clinical Professor of Pathology and Laboratory Medicine*

Luis M. De La Maza, M.D., Ph.D. University of Minnesota, *Professor of Pathology and Laboratory Medicine*

Suvarna Ajay Deshmukh-Rane, M.D. Bharti Vidyapeeth Medical College, *Health Sciences Assistant Clinical Professor of Pathology and Laboratory Medicine*

Robert A. Edwards, M.D., Ph.D. Baylor College of Medicine, *Associate Professor of Pathology and Laboratory Medicine*

Ted Farzaneh, M.D. Shaheed Beheshti University of Medical Sciences, *Health Sciences Assistant Clinical Professor of Pathology and Laboratory Medicine*

Min Han, M.D. Xi'an Jiaotong University, *Health Sciences Assistant Clinical Professor of Pathology and Laboratory Medicine*

Elizabeth Head, Ph.D. University of Toronto, *Vice Chair for Research and Professor of Pathology and Laboratory Medicine*

Maria Cristina Kenney, M.D., Ph.D. University of California, Los Angeles; University of Arizona, *Professor of Ophthalmology; Pathology and Laboratory Medicine*

Virginia E. Kimonis, M.D. University of Southampton, *Professor of Pediatrics; Environmental Health Sciences; Genetic Counseling; Pathology and Laboratory Medicine*

Dan Mercola, M.D., Ph.D. University of California, Los Angeles, *Professor of Pathology and Laboratory Medicine*

Edwin S. Monuki, M.D., Ph.D. University of California, San Diego, *Department Chair and Warren L. Bostick Chair in Pathology and Professor of Pathology and Laboratory Medicine; Developmental and Cell Biology*

Tahseen Mozaffar, MBBS Aga Kahn University, *Dr. Stanley van den Noort Endowed Chair and Interim Department Chair and Professor of Neurology; Pathology and Laboratory Medicine*

Ellena Peterson, Ph.D. Georgetown University, *Professor Emerita of Pathology and Laboratory Medicine*

Sherif Rezk, M.D. Alexandria University, *Professor of Pathology and Laboratory Medicine*

Beverly Wang, M.D. Jiangxi Medical College, *Professor of Pathology and Laboratory Medicine; Otolaryngology*

Courses

PATH 200A. Research in Experimental Pathology. 2-12 Units.

Independent research for the Ph.D. program within the laboratories of graduate training faculty in Experimental Pathology.

Corequisite: PATH 203A

Repeatability: Unlimited as topics vary.

PATH 200B. Research in Experimental Pathology. 2-12 Units.

Independent research for the Ph.D. program within the laboratories of graduate training faculty in Experimental Pathology.

Corequisite: PATH 203B

Repeatability: Unlimited as topics vary.

PATH 200C. Research in Experimental Pathology. 2-12 Units.

Independent research for the Ph.D. program within the laboratories of graduate training faculty in Experimental Pathology.

Corequisite: PATH 203C

Repeatability: Unlimited as topics vary.

PATH 200R. Research in Experimental Pathology for First-Year Students. 2-12 Units.

Independent research within the laboratories of graduate training faculty in Experimental Pathology for first-year Ph.D. students.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be taken for credit 3 times.

PATH 203A. Advanced Studies in Experimental Pathology. 1 Unit.

A tutorial course for Ph.D. students in Experimental Pathology entailing attendance at Departmental seminars and critical reading of the scientific literature.

Corequisite: PATH 200A

Repeatability: May be repeated for credit unlimited times.

PATH 203B. Advanced Studies in Experimental Pathology. 1 Unit.

A tutorial course for Ph.D. students in Experimental Pathology entailing attendance at Departmental seminars and critical reading of the scientific literature.

Corequisite: PATH 200B

Repeatability: May be repeated for credit unlimited times.

PATH 203C. Advanced Studies in Experimental Pathology. 1 Unit.

A tutorial course for Ph.D. students in Experimental Pathology entailing attendance at Departmental seminars and critical reading of the scientific literature.

Corequisite: PATH 200C

Repeatability: May be repeated for credit unlimited times.

PATH 204A. Experimental Pathology Research Seminar. 1 Unit.

Seminar series for graduate students in Experimental Pathology. Students attend seminars and, beginning in their third year of graduate study, present one formal seminar on their graduate research.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 204B. Experimental Pathology Research Seminar. 1 Unit.

Seminar series for graduate students in Experimental Pathology. Students attend seminars and, beginning in their third year of graduate study, present one formal seminar on their graduate research.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 204C. Experimental Pathology Research Seminar. 1 Unit.

Seminar series for graduate students in Experimental Pathology. Students attend seminars and, beginning in their third year of graduate study, present one formal seminar on their graduate research.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 221. Immunopathogenic Mechanisms of Disease. 3 Units.

Examination of the mechanisms underlying disease states mediated by immune dysregulation. Topics include mechanisms of immune evasion by cancer, diseases mediated by cytokine dysregulation, role of the microbiome of the GI tract and other disease sites, and adoptive T-cell therapy.

Prerequisite: MMG 215

Same as MMG 221.

Restriction: Graduate students only.

PATH 225. Molecular Mechanisms of Human Disease. 3 Units.

Provides an overview of the molecular mechanisms of human diseases, including neurologic, hematologic, neoplastic, and infectious diseases. Students gain an understanding of these mechanisms, as well as models of human diseases.

Same as MMG 225.

PATH 227. Experimental Pathology Journal Club. 1 Unit.

Graduate-level course, which is open to all years, will involve the reading and discussion of papers, preferably written by the invited seminar speaker. Discussions will cover advanced topics in experimental pathology as related to an understanding of human disease.

Corequisite: PATH 204A and PATH 204B and PATH 204C

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 240. Neuropathology. 3 Units.

Covers genetic and molecular mechanisms of neurological diseases. A grounding in neuroanatomy and prior or simultaneous enrollment in Anatomy 210A or the equivalent is strongly recommended. Resident physicians and clinical fellows can audit the course.

Repeatability: May be repeated for credit unlimited times.

Restriction: Graduate students only.

PATH 292A. Scientific Communication. 2 Units.

Small group meetings for graduate students to practice scientific writing, debate, and presentation skills.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 292B. Scientific Communication. 2 Units.

Small group meetings for graduate students to practice scientific writing, debate, and presentation skills.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 292C. Scientific Communication. 2 Units.

Small group meetings for graduate students to practice scientific writing, debate, and presentation skills.

Grading Option: Satisfactory/unsatisfactory only.

Repeatability: May be repeated for credit unlimited times.

PATH 299. Dissertation in Experimental Pathology. 1-12 Units.

Provided for the preparation and completion of the dissertation required for the Ph.D. degree.

Repeatability: May be repeated for credit unlimited times.