PATHOLOGY

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Courtesy Assistant Professor: Donna Bouley, Robert Shafer

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Adjunct Clinical Faculty: Robert Archibald, Jerome S. Burke, Stephen Shi-Hua Chen, Seth Haber, Maie K. Herrick, Paul W. Herrmann, Charles Lombard, John E. McNeal, Judy Melinek, Lawrence Naiman, Mahendra Ranchod, Thomas W. Rogers, William Ruehl, Joshua Sickel, Sharon Van Meter

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Courses given in Pathology have the subject code PATH. For a complete list of subject codes, see Appendix.

PROGRAMS OF STUDY

The Department of Pathology offers advanced courses in aspects of pathology. The department does not offer advanced degrees in pathology, but qualified graduate students who are admitted to the Biophysics Program, the Cancer Biology Program, or other interdepartmental programs may elect to pursue their thesis requirements in the department's research laboratories. The discipline of pathology has served as a bridge between the preclinical and clinical sciences and is concerned with the application of advances in the basic biological sciences, both to the diagnosis of human disease and the elucidation of the mechanisms of normal molecular, cellular, and organ structure and function that manifest themselves in clinical disease. Accordingly, the department's research interests extend from fundamental molecular biology to clinical-pathological correlations, with an emphasis on experimental oncology.

At present, investigation in the department includes basic studies in different areas utilizing molecular biological, biochemical, and genetic cell biological techniques: DNA replication in yeast and cultured eukaryotic cells, cell cycle control in animal cells and yeast, identification and pathogenetic role of chromosomal aberrations in human malignancies and mechanisms of activation of oncogenes in human and animal cells, lymphocyte and neutrophil-interactions with endothelial cells, cell type specification and signal transduction pathways leading to specific gene expression or modulation of cytoskeletal behavior; cytoskeletal architecture, cell-matrix interaction, developmental biology of hematopoietic stem cells and thymus, regulation of the immune system, and mechanisms of immune and other responses in the central nervous system. In addition, a variety of studies focus on the development of novel diagnostic and immunotherapeutic treatment modalities and techniques for solid tumors, lymphomas, HIV, and genetic diseases. Research training in all of these areas is available for qualified medical and graduate students by individual arrangement with the appropriate faculty member. A summary of the research interests of the department faculty is available at http://pathology.stanford.edu.

COURSES

Course and lab instruction in the Department of Pathology conforms to the "Policy on the Use of Vertebrate Animals in Teaching Activities," the text of which is available at http://www.stanford.edu/dept/DoR/rph/8-2.html.

PATH 103Q. Leukocyte Migration—Stanford Introductory Seminar. Preference to sophomores.
1 unit, Aut (Michie)

PATH 105Q. Final Analysis: The Autopsy as a Tool of Medical Inquiry—Stanford Introductory Seminar. Preference to sophomores.
3 units, Spr (Regula)

PATH 199. Undergraduate Research
1-18 units, Aut, Win, Spr (Staff)

PATH 211. Advanced Immunology I—(Enroll in MI 211, IMMUNOL 201.)
3 units, Win (Chien, Staff)

PATH 218. Computational Analysis of Biological Images
2 units, Aut (Staff)

PATH 299. Directed Reading—Prerequisite: consent of instructor.
1-18 units, Aut, Win, Spr, Sum (Staff)

PATH 233. The Biology of Small Modulatory RNAs—(Same as GENE 233, MI 233.) Open to graduate and medical students. How recent discoveries of miRNA, RNA interference, and short interfering RNAs reveal potentially widespread gene regulatory mechanisms mediated by small modulatory RNAs during animal and plant development. Requires paper proposing novel research.
2 units, Aut (Chen, Fire)

PATH 399. Research—Department faculty are involved in active research programs at the Stanford Medical Center. Students interested in research at the molecular, cellular, and clinical-pathologic levels are encouraged to seek out faculty advisers. The department is equipped for modern research and maintains an active postdoctoral research training program. Prerequisite: consent of instructor.
1-18 units, Aut, Win, Spr, Sum (Staff)