RADIOLOGY

Emeriti: (Professors) Herbert L. Abrams, David A. Goodwin, Henry H. Jones, Albert Macovski, William H. Northway, Lewis Wexler, Leslie M. Zatz

Chair: Gary M. Glazer

Professors: Scott W. Atlas, Richard A. Barth, Gary M. Glazer, Gary H. Glover, Michael L. Goris, Robert J. Herfkens, R. Brooke Jeffrey, Barton Lane, I. Ross McDougall, Robert E. Mindelzun, Norbert J. Pelc, F. Graham Sommer

Associate Professors: Patrick D. Barnes, Christopher F. Beaulieu, Robyn L. Birdwell, Francis Blankenberg, R. Kim Butts, Michael D. Dake, Debra M. Ikeda, Ann Leung, Michael Marks, Michael F. Moseley, Sandy Napel, Matilde Nino-Murcia, Eric W. Olcott, Mahmood Razavi, Geoffrey D. Rubin, George M. Segall, Daniel M. Spielman, Daniel Y. Sze

Assistant Professors: Sandip Biswal, Frandics P. Chan, Lawrence Chow, Bruce Daniel, Terry Desser, Huy M. Do, Dominik Fleischmann, Joan K. Frisoli, Garry E. Gold, Stephen Kee, Kathryn J. Stevens

Assistant Professors (Research): Mark Bednarski, John Desmond, Rebecca Fahrig, Sylvia Plevritis

Consulting Assistant Professor: Jarrett Rosenberg

Web Site: http://www-radiology.stanford.edu/

Courses given in Radiology have the subject code RAD. For a complete list of subject codes, see Appendix B.

The Department of Radiology does not offer degrees; however, its faculty teach a variety of courses open to medical students, graduate students, and undergraduates. The department also accepts students in other curricula as advisees for study and research. Undergraduate students may also arrange individual research projects under the supervision of the department's faculty.

This discipline focuses on the use of radiation, ultrasound, and magnetic resonance as diagnostic, therapeutic, and research tools. The fundamental and applied research within the department reflects this broad spectrum as it relates to anatomy, pathology, physiology, and interventional procedures. Original research and development of new clinical applications in medical imaging is supported within the Radiological Sciences Laboratory.

Courses open to undergraduate and postgraduate students are listed below.

COURSES

RAD 101. Selected Readings in Radiology Research
1-18 units, Aut, Win, Spr (Staff)

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

RAD 208. Experimental Nuclear Medicine—Computer applications in medicine, particularly in the use of radioisotopes as tracers. Recommended: some knowledge of physiology and calculus.
2 units, Win, Spr (Goris) by arrangement

RAD 210. Clinical Nuclear Medicine—The application of nuclear medicine procedures to clinical cases. Prerequisite: consent of instructor.
2 units, Win (Goris, Staff)

RAD 220. Introduction to Imaging and Image-based Human Anatomy—Fundamentals of medical imaging and image-based human anatomy. Emphasis is on contrast mechanisms and the relative strengths of each imaging modality. Laboratory component shows imaging and anatomy in real time. Recommended: basic understanding of biology, physics, and math.
3 units, Aut (Gold, Butts)

RAD 221. Introduction to Radiologic Anatomy—Basic human anatomy through imaging examinations including radiography, computed tomography, ultrasound, and magnetic resonance imaging. How to recognize normal anatomy on imaging studies, spatial relationships, and three-dimensional thinking. Case studies of pathology.
2 units (Gold, Staff)

RAD 226. In Vivo Magnetic Resonance Spectroscopy and Imaging—(Same as EE 469A.) Collections of identical independent nuclear spins are described by the classical vector model of magnetic resonance imaging (MRI); however, interactions among spins, as occur in many in vivo processes, require a more complete description. Physics and engineering principles of these in vivo magnetic resonance phenomena with emphasis on current research questions and clinical applications. Topics: quantum mechanical description of magnetic resonance, density matrix theory, product operator formalism, relaxation theory and contrast mechanisms, spectroscopic imaging, spectral editing, and multinuclear studies. Prerequisites: EE 369B or familiarity with magnetic resonance, working knowledge of linear algebra.
3 units, Win (Spielman)

RAD 299. Directed Reading—Prerequisite: consent of instructor. Search for instructor name on Axess.
1-18 units, Aut, Win, Spr, Sum, by arrangement

RAD 399. Research—Investigations sponsored by individual faculty members. Prerequisite: consent of instructor. Search for instructor name on Axess.
1-18 units, Aut, Win, Spr, Sum, by arrangement