

RADIATION ONCOLOGY

Courses offered by the Department of Radiation Oncology are listed under the subject code RADO on the (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=RADO&filter-catalognumber-RADO=on>) Stanford Bulletin's (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=RADO&filter-catalognumber-RADO=on>) ExploreCourses web site (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=RADO&filter-catalognumber-RADO=on>).

Radiation Oncology focuses on the use of radiation for cancer therapy and research. The department does not offer degrees; however, its faculty teach courses open to medical students, graduate students, and undergraduates. The department also accepts students in other curricula as advisees for study and research. Graduate students in Biophysics and Cancer Biology may perform their thesis research in the department. Undergraduates may arrange individual research projects under supervision of faculty.

At the present time, the major areas of basic research investigation in the department include: DNA repair in mammalian cells after ionizing irradiation; studies of the mechanism of tumor hypoxia in animal tumors; development of new anti-cancer drugs to exploit tumor hypoxia; cytogenetic and molecular methods of predicting the sensitivity of individual tumors to cancer therapy; radiolabeled monoclonal antibodies for cancer detection and treatment; studies of oxygen levels in human tumors using polarographic electrodes; clinical trials of a new hypoxic cytotoxic agent (tirapazamine); studies of the late effects of cancer therapy; and techniques of conformal and intensity modulated radiation therapy.

Faculty

Emeriti: Malcolm A. Bagshaw, Peter Fessenden, Don R. Goffinet, George M. Hahn, Kendric Smith

Chair: Richard T. Hoppe

Professors: J. Martin Brown, Sarah S. Donaldson, Amato J. Giaccia, Steven L. Hancock, Richard T. Hoppe, Quynh-Thu Le, Daniel S. Kapp, Steven A. Liebel

Associate Professors: Iris C. Gibbs, Paul Keall, Christopher R. King, Susan J. Knox, Gary Luxton, Lei Xing

Assistant Professors: Laura Attardi, Daniel Chang, Nicholas Denko, Edward Graves, Albert C. Koong

Consulting Professor: Robert M. Sutherland

Courses

RADO 101. Readings in Radiation Biology. 1-18 Unit.

RADO 199. Undergraduate Research. 1-18 Unit.

Students undertake investigations sponsored by individual faculty members. Prerequisite: consent of instructor.

RADO 202. The Basic Science of Radiation and Cancer Biology. 1 Unit.

For residents or fellows in the training program in the Division of Radiation Therapy, and for interested medical students. Basic processes of radiation biology that underly the treatment of malignant diseases by radiation. Carcinogenesis and mutagenesis by radiation are also covered. Prerequisite: familiarity with cell biology and physiology; consent of instructor.

RADO 203. Perspectives on Clinical Research. 1 Unit.

This is an introductory seminar that introduces goals and methods of clinical research to first-year medical students and undergraduates interested in clinical research. The course will consist of a speaker series of clinical researchers and statisticians. Students will also have the opportunity to participate in research projects utilizing methods taught in class.

RADO 210. Current Topics in Oncology. 1 Unit.

Student lead: This is a lunch seminar introducing preclinical students to current topics in oncology, including research, ethics, clinical care, health policies, humanities, etc. Speakers will come from multiple areas of cancer care, research and industry.

RADO 244. Program in Radiation Biology Seminar Series. 1 Unit.

Open to graduate and undergraduate students. Current research in radiation and cancer biology summarized by two laboratories.

RADO 280. Early Clinical Experience in Radiation Oncology. 1-2 Unit.

Provides an observational experience as determined by the instructor and student. Prerequisite: consent of instructor.

RADO 299. Directed Reading in Radiation Oncology. 1-18 Unit.

Prerequisite: consent of instructor.

RADO 300A. Radiation Oncology Clerkship. 5 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Selective 1. DESCRIPTION: The Stanford Department of Radiation Oncology welcomes 3rd and 4th year medical students. THIS ROTATION IS CURRENTLY OFFERED IN A COMPLETELY VIRTUAL ENVIRONMENT. During this rotation, students will be exposed to different radiation oncology topics including history of radiation oncology, basic principles of radiation physics and radiation/cancer biology, radiation treatment planning and work-up and management of a broad range of malignant conditions. Students will participate in didactic Zoom sessions with faculty and residents and attend virtual tumor boards and chart rounds. Students will work with faculty in virtual clinic and be expected to work up patients and present cases to faculty. Students will also be exposed to radiation treatment planning. At the end of the rotation, students will be expected to give a talk over Zoom on a topic of their choosing to the department. PREREQUISITES: MED 300A and/or SURG 300A. PERIODS AVAILABLE: 1-5, 9-12, full-time for 4 weeks, 4 students per period. CLERKSHIP DIRECTOR: Erqi Pollom, M.D., MS. CLERKSHIP COORDINATOR: Jessica Frank, 650-724-7673, jeffrank@stanford.edu. REPORTING INSTRUCTIONS: Where: Contact Jessica Frank at jeffrank@stanford.edu, 650-724-7673 for time and location; Time: TBA. CALL CODE: 0, no call, no weekends. OTHER FACULTY: Staff. LOCATION: SUMC.

RADO 370. Medical Scholars Research. 4-18 Units.

Provides an opportunity for student and faculty interaction, as well as academic credit and financial support, to medical students who undertake original research. Enrollment is limited to students with approved projects.

RADO 398A. Clinical Elective in Radiation Oncology. 5 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Elective.

DESCRIPTION: Provides an opportunity for a student in the clinical years to have an in-depth clinical experience in Radiation Therapy, of a quality and duration to be decided upon by the student and a faculty preceptor in the Department of Radiation Oncology to build on the RADO 300A experience. Please note: Students cannot add 398A clerkships directly to their fishbowl schedules through the regular shuffles. Please contact Caroline Cheang in the Office of Medical Student Affairs at cheang@stanford.edu or 650-498-7619 with the faculty preceptor's name and email address to add this clerkship. PREREQUISITES: RADO 300A and permission from the Program Director. PERIODS AVAILABLE: 1-12, full time for 4 weeks, 4 students per period. CLERKSHIP DIRECTOR: Erqi Pollom, M.D., MS. CLERKSHIP COORDINATOR: Jessica Frank (650-724-7673; jefrank@stanford.edu). REPORTING INSTRUCTIONS: Where: Contact Jessica Frank @ 650-724-7673 for time and location; Time: TBA. CALL CODE: 0. OTHER FACULTY: P. Dubrowski and staff. LOCATION: SUMC.

RADO 399. Graduate Research. 1-18 Unit.

Students undertake investigations sponsored by individual faculty members. Prerequisite: consent of instructor.