

# RADIATION ONCOLOGY

*Emeriti:* Malcolm A. Bagshaw, Peter Fessenden, George M. Hahn, Robert F. Kallman, Clarence J. Karzmark, Kendric Smith

*Chair:* Richard T. Hoppe

*Professors:* Arthur Boyer, J. Martin Brown, Sarah S. Donaldson, Don R. Goffinet, Steven L. Hancock, Richard T. Hoppe, Daniel S. Kapp

*Associate Professors:* Amato J. Giaccia, Susan J. Knox, Gary Luxton

*Assistant Professors:* Iris C. Gibbs, Christopher R. King, Quynh-Thu Le, Todd Pawlicki, Melanie C. Smitt

*Associate Professor (Research):* Chang-ming Mai

*Assistant Professors (Research):* Cordula Kirchgessner, Lei Xing

*Courtesy Professor:* John R. Adler, Jr.

*Consulting Professor:* Robert M. Sutherland

Radiation Oncology is a discipline focused around the use of radiation for both cancer therapy and research. The fundamental and applied research within the department reflects this spectrum in radiation therapy and clinical oncology, and in radiation and tumor biology.

The department 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. Graduate students in the Biophysics Program and in the Cancer Biology Program may perform their thesis research in the department. Undergraduate students may also arrange individual research projects under the supervision of the 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; cyto-

genetic 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.

## COURSES

Course work and lab instruction in the Department of Radiation Oncology conform to the Policy on the Use of Vertebrate Animals in Teaching Activities as stated in the front of this catalog.

The following are open to undergraduate and postgraduate students.

### 101. Selected Readings in Radiation Biology

*Aut, Win, Spr (Staff)*

**202. The Basic Science of Radiation Therapy**—Primarily for residents or fellows in the Radiation Therapy division training program; open to medical or graduate students. Focus is on the basic biological processes underlying the treatment of malignant disease by radiation. Prerequisites: some familiarity with cell biology and physiology, and consent of instructor.

*1 unit, Aut, Win, Spr (Brown)*

**241,242,243. Molecular and Cellular Biology of Cancer**—(Enroll in Cancer Biology 241, 242, 243.)

*3 units (Staff) alternate years, given 2001-02*

### 299. Research

*any quarter (Staff)*