

## USC Provost's Biomedical Imaging Sciences Initiative

Interdisciplinary Course and Seminar (2, 2 credits)

Semester II Biomedical Imaging: *Molecules to Man* \_02 PSCI 599 Fall 2006

Class Number: 49029D

For registration please call 323-442-1474 for graduate clearance

Course Coordinators: Professors Patrick M. Colletti and Walter Wolf

Narrative: This is a two semester *interdisciplinary* course and seminar representing the scope of the Provost's Biomedical Imaging Science Initiative where students will learn the principles of biomedical imaging science. The Fall Semester will emphasize *Animal and Human Imaging*. Class meets weekly, with introductory lectures and presentations by USC experts and visiting professors. Sessions will be available on videolink to participants at HSC and UPC, and to CHLA when technically possible.

Requirements: This *interdisciplinary* offering has no specific prerequisites. Homework assignments may be completed with easy-to-use ImageJ software. Each student who takes the course for credit will complete a project, for presentation at the end of each semester. Participants who audit the course will be offered the option of also completing a project and making a presentation.

Grading: The final grade will be based on active participation in the course (30%), the oral presentation (30%), and the research term paper (40%). Students will be graded in the written term paper (40%) on focus, clarity of presentation (including demonstration of appropriate writing and presentation skills), appropriate selection from the literature and accurate analysis of the literature. Students will be graded in the oral presentation (30%) on focus, clarity of presentation and ability to field questions. Students will be graded in the course participation (30%) on their ability to raise and address questions related to the lecture material.

Students with Disabilities: Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the course instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 AM to 5:00 PM, Monday through Friday. The phone number for DSP is (213) 740-0776.

Lecture Schedule: Classes will be held Tuesdays 10-12 am

Location at HSC in PSCI B13 and at UP in a DEN location to be specified. A location at CHLA will be added if technically possible.

Date	Topic	Faculty
August 22	1. Radiation Science and Imaging with Radiography	<b>Patrick Colletti</b>
August 29	2. Computed Tomography	<b>Richard Leahy / Colletti</b>
September 5	3. Magnetic Resonance Imaging	<b>Manbir Singh /</b>

		<b>Colletti</b>
September 12	4. Animal Imaging	<b>Rex Moats</b>
September 19	5. Functional Brain Imaging I: Volumetry, tractology	<b>Colletti / Singh</b>
September 26	6. Functional Brain Imaging II: Rational, methods, algorithms	<b>Zhong-Lin Lu</b>
October 3	7. Functional Brain Imaging III: Analysis, results	<b>Antonio Damasio</b>
October 10	8. Cardiovascular Imaging: Biofluid mechanics, volumetry, flow, perfusion, viability	<b>Colletti</b>
October 17	9. Pharmacokinetic Imaging Analysis	<b>Walter Wolf</b>
October 24	10. Ultrasound Science and Imaging	<b>Ed Grant</b>
October 31	11. Clinical Applications of Imaging I	<b>Colletti</b>
November 7	12. Clinical Applications of Imaging II	<b>Colletti</b>
November 14	13. Surgical Applications	<b>Shirin Towfigh</b>
November 21	14. Student Presentations	<b>Faculty</b>
November 28	15. Student Presentations	<b>Faculty</b>