



**SPRING 2008**

**<http://fss.berkeley.edu/>**

**Freshman and Sophomore Seminars  
University of California, Berkeley  
301 Campbell Hall  
Berkeley, CA 94720-2922**

## **Freshman & Sophomore Seminars at Berkeley**

UC Berkeley's Freshman and Sophomore Seminars provide an unparalleled opportunity for faculty members and small groups of lower-division students to explore a scholarly topic of mutual interest together, in the spirit of learning for its own sake. By taking a seminar a student becomes an active member of Berkeley's intellectual community. The seminars depend on the regular presence and active participation of every student. Sharing ideas in class is an important academic skill that can be acquired only through practice. The vigorous discussions that characterize the most successful seminars depend on the commitment of each and every member of the class. Students are encouraged to choose their seminars based on the pull of intellectual curiosity, a desire to explore enticing and even unfamiliar realms.

Please visit the Freshman & Sophomore Seminar website at <http://fss.berkeley.edu> for the following:

- Updates to the seminar lists included in this document on easy-to-follow web pages
- Revisions to this document
- Pop-up menus to help students find seminars of interest based on seminar topics
- Information regarding the Food for Thought Seminar series, a wonderful way for faculty and students to get better acquainted in an informal setting before or after class
- Success, Seminars, and You – a web page full of good ideas and helpful links to support students in registering for a seminar and getting the most out of their seminars before, during and after taking a seminar

## **L&S Discovery Courses**

The seven-course breadth requirement can be an unparalleled opportunity to explore fascinating worlds of knowledge. The Letters & Science Discovery Courses, which the College is launching in fall 2005, will take the guesswork out of satisfying the breadth requirement. Taught by some of the most distinguished faculty on campus and deliberately designed to engage and ignite the minds of non-experts, these courses are destined to be unforgettable. For details on the Discovery Courses planned for the upcoming semester, see <http://lsdiscovery.berkeley.edu>.

This document was last updated on January 22, 2008.

## FRESHMAN SEMINARS

The following courses, most of which are numbered 24, are limited to 15-18 students. Each is offered for one unit of credit. First-year students will be given priority for enrollment. Courses designated P/NP may be taken pass/no pass only; courses designated LG may be taken for a letter grade or on a pass/no pass basis. If a course is designated as requiring the consent of the instructor to enroll, or if you would like additional course information, contact the undergraduate assistant in the department offering the seminar.

**Aerospace Studies 24, Section I**  
**The Foundation of the United States Air Force (1 unit, LG)**  
**Professor Amber Henson**  
**Wednesday 5:00-6:00, 160 Dwinelle Hall, CCN: 57306**

This course is designed to be an introduction to the Air Force Reserve Officers Training Corps and the Air Force . . . how it's organized, how it works, and how college students like yourselves can try out our program so you can see for yourself if the Air Force is for you. The topics we will be covering this term include leadership, core values, managing diversity, equal opportunity and treatment, team building, and communication skills. Most of these topics are a basic introduction to the Air Force and the military.

**Enrollment in this seminar is by instructor approval only. To request approval, send an email to [ahenson@berkeley.edu](mailto:ahenson@berkeley.edu) and tell the instructor why you are interested in taking the seminar no later than January 23, 2008.**

Captain Amber Henson is a Manpower/Personnel Officer in the United States Air Force. She received her Bachelor's degree in Biology with a French minor from Samford University and her Masters in Health Science, emphasis in International Health, from Touro University.

**Astronomy 24, Section I**  
**Space, Time, and the Cosmos (1 unit, P/NP)**  
**Professor Alex Filippenko**  
**Thursday 1:00-3:00, 544 Campbell Hall, CCN: 06759**

**This seminar will meet on Thursday, January 24, 2008 from 1:10 - 3:00 pm, and on seven Thursdays between January 31, 2008 and May 8, 2008 to be announced. Food for Thought dining arrangements will be discussed in class.**

We will consider the nature of space and time, especially in the context of our understanding of the overall properties of the Universe. The major topics from the following two best-selling books will be discussed: "A Briefer History of Time," by Stephen Hawking, and "The Fabric of the Cosmos: Space, Time, and the Texture of Reality," by Brian Greene. Our journey will take us through the basics of the two pillars of modern physics: quantum mechanics and Einstein's general theory of relativity. We will also explore string theory, which attempts to unify these two great fields by postulating the existence of many hidden dimensions in which packages of energy vibrate. **Though the seminar is intended for non-science majors, the discussion will be held at a fairly high level; thus, students must have already successfully completed at least one of the following courses: Astronomy 10 (or C10), L&S C70U, Astronomy 7A, or Astronomy 7B. This seminar is part of the Food for Thought Seminar Series.**

Alex Filippenko received his B.A. (1979, Physics) from UC Santa Barbara and his Ph.D. (1984, Astronomy) from the California Institute of Technology. He joined the UC Berkeley faculty in 1986. An observational astronomer who makes frequent use of the Hubble Space Telescope, the Keck ten-meter telescopes, and Lick Observatory, he engages in research on exploding stars, active galaxies, black holes, gamma-ray bursts, and observational cosmology. Having written over 500 articles on his research, Filippenko has received numerous awards and is one of the world's most highly cited astronomers. His group's discovery that the expansion of the Universe is accelerating with time was named the "Top Science Breakthrough of

1998" by the editors of Science magazine. A dedicated and enthusiastic teacher, he has won the campus Distinguished Teaching Award and has been voted "Best Professor" five times in the Daily Cal's annual "Best of Berkeley" survey; he was also named the 2006 CASE/Carnegie National Professor of the Year among doctoral and research institutions. Besides being an avid tennis player and hiker, he enjoys world travel and is addicted to observing total solar eclipses.

**Chicano Studies 24, Section I**  
**Chicano Civil Rights Movement (1 unit, P/NP)**  
**Professor Carlos Munoz Jr.**  
**Monday 9:00-10:00, 103 Wheeler Hall, CCN: 13006**

The seminar will consist of examining the multifaceted dimensions of the 1960s Chicano Civil Rights Movement via documentary films.

Professor Carlos Muñoz, Jr. is a Professor Emeritus in the Department of Ethnic Studies. He is the award-winning author of *Youth, Identity, Power: The Chicano Movement*, and is working on a book on the topic of the seminar.

**Civil and Environmental Engineering 24, Section I**  
**Two Field Trips in Environmental Engineering (1 unit, P/NP)**  
**Professor John Dracup**  
**Wednesday 6:00-7:00, 406 Davis Hall, CCN: 13908**

**A one-hour lecture/discussion concerning the science/engineering aspects of each field trip will be held before each of the Saturday field trips. These seminars will meet in 406 Davis Hall. The first class meeting will be on January 23, 2008 for a group orientation and a review of the two field trips. The two pre-field trip discussions will meet on Wednesdays, April 9 and 16, 2008. Pizza and soft drinks will be served at the 6:00 p.m. Wednesday class meetings. The field trips will be on Saturdays, April 12 and 19, 2007. Field trip arrangements will be discussed in class.**

Two Saturday field trips will be to 1. A wetland restoration site and 2. A stream restoration site. All field trips will be in the San Francisco Bay area and last approximately six hours in duration. Transportation will be provided to and from the Berkeley campus. Attendance is mandatory at all three seminar meetings and both field trips for a passing grade in the class. Field trips will be interactive: wear clothing that you don't mind getting wet or dirty. **Enrollment is limited to twenty freshmen interested in environmental issues. This is a Green Theme seminar.**

Dr. John Dracup is a Professor of the Graduate School in the Department of Civil & Environmental Engineering. He has taught and conducted research at UCLA and U.C. Berkeley for forty-two years. His expertise is in water resource engineering and hydrology. His recent awards include 1. Inauguration into the "Order of the Black Blouse" by the Water Rights Court of Valencia, Spain; 2. Designation as a Diplomat of the American Academy of Water Resource Engineers of the American Society of Civil Engineers; and 3. An Honorary Professorship at the Universidad Católica San Antonio De Murcia, Spain. He swims competitively with Pacific Masters Swimming.

**Classics 24, Section I**  
**Adaptation and Modern Performance of Greek Tragedy (1 unit, P/NP)**  
**Professor Donald Mastronarde**  
**Thursday 3:00-4:00, 202 Wheeler Hall, CCN: 14727**

**The class will attend the play together on Friday, March 7, 2008 at 8:00 pm at Zellerbach Playhouse on campus. If you wish to enroll, please ensure that you do not**

**have a conflict with that date.**

The Department of Theater, Dance, and Performance Studies will mount a performance of Euripides' tragedy *Bacchae* (translated and adapted) in Spring 2008. Two distinguished visitors to campus will also make presentations about the adaptation and performance of Greek plays. The students in this seminar will attend a performance of *Bacchae* and prepare for it by reading the play, viewing videos of other modern performances and adaptations of Greek plays, and discussing the problems confronting the performers, directors, and audience in the revival of Greek tragedy.

Professor Mastronarde grew up in Connecticut and was educated at Amherst College, Oxford University, and the University of Toronto. He has taught at UC Berkeley since 1973. He has published extensively on the ancient Athenian tragedian Euripides and various aspects of ancient drama, including interpretation, staging and dramatic technique, textual studies, and commentaries. He is the author of a widely-used textbook for elementary ancient Greek and also works on font development and special keyboards for scholars of ancient Greek. He has taught several different variations of freshman seminars about performances (recorded and live) of Greek plays.

### **Classics 24, Section 2**

#### **Monsters of the Ancient World (1 unit, P/NP)**

**Professor Trevor Murphy**

**Wednesday 2:00-3:00, 204 Wheeler Hall, CCN: 14730**

This seminar will examine monsters in ancient Greek and Roman culture in their roles as guardians of treasure, portents, ancestors, markers of the edges of the world, and messengers from the gods or from one's inner self. Comparative evidence will be read from ancient Near Eastern, early Christian, and medieval Scandinavian texts, as well as anthropological theorists on monsters. There will be approximately twenty pages of primary-source reading per week.

Trevor M. Murphy is a Professor of Classics. His special interests include Roman prose authors and ethnography. For more information regarding Professor Murphy, visit the Classics Department's faculty web page at [http://classics.berkeley.edu/people/faculty/person\\_detail.php?person=32](http://classics.berkeley.edu/people/faculty/person_detail.php?person=32).

### **Classics 24, Section 3**

#### **Indiana Jones and the Elgin Marbles: The Myth and Reality of Archaeology (1 unit, P/NP)**

**Professor Kim Shelton**

**Wednesday 9:00-10:00, 202 Wheeler Hall, CCN: 14733**

**Food for Thought dining arrangements will be discussed in class.**

What does someone need to be an archaeologist? A pith helmet? A leather jacket? A whip? Hollywood would like us to believe that treasure-hunting heroes are searching for treasure and saving the world in one of the most adventurous and romantic careers possible—archaeology. The reality is something quite different but even more interesting. Archaeology is the study of the human past, a window into the cultures and times from which the world of today developed. With insight into the lives of the ancients we learn a tremendous amount about ourselves and our future potential. Today archaeology is about history, art, science, cultural heritage and international law. To be an archaeologist you need to be inquisitive, imaginative and incredibly enthusiastic—especially about holding a simple object that someone dropped hundreds or thousands of years ago and using your mind like a time machine to meet that individual in the context of his life. This seminar will be an opportunity to analyze the romantic legends, figures and stereotypes of archaeology and to discover the exciting real elements and adventures of today's archaeologist. **This seminar is part of the Food for Thought Seminar Series.**

Kim Shelton is a faculty member in the Department of Classics and the Director of the Nemea Center for Classical Archaeology. She has two excavation projects in Greece, including the UC Berkeley Excavations at the Sanctuary of Zeus at Nemea and at the prehistoric Bronze Age site of Mycenae. She began excavating at a very young age and has never looked back. Her experience includes field work in this country as well as twelve years of full-time research in Greece. Other important personal facts include her cats named after famous archaeologists and her favorite Halloween costume - what else? Indiana Jones, whip and all. For more information regarding Professor Shelton, please visit her faculty web page at <http://shelton.berkeley.edu>.

**Comparative Literature 24, Section I**  
**Same-Sex Sexuality: Categories and Concepts (1 unit, P/NP)**  
**Professor Michael Lucey**  
**Monday 4:00-5:00, 279 Dwinelle Hall, CCN: 17272**

One point of departure for this seminar might be the recent "scandal" surrounding Senator Larry Craig. What if we take him at his word that he is "not gay"? What other concepts or categories might help us better grasp what we refer to as his "sexual identity"? How do our categories and concepts affect our perception of sexuality in the world around us? We will read some writings by sociologists and cognitive scientists to help us see how other people have addressed these kinds of questions, but the course will be centered on a close reading of a novel by Jean Genet, *Querelle*, which is a fascinating narrative inquiry into exactly these questions regarding forms of male same-sex sexuality.

Michael Lucey is a Professor in the Department of French and Comparative Literature, and currently Chair of the French Department. He helped found Berkeley's LGBT Studies minor program and the Center for the Study of Sexual Culture. He is the author of three books, including, most recently, *Never Say I: Sexuality and the First Person in Colette, Gide, and Proust*.

**Demography 24, Section I**  
**The United Nations in Today's World (1 unit, P/NP)**  
**Professor John Wilmoth**  
**Monday 4:00-5:00, 81 Evans Hall, CCN: 18203**

The United Nations is an organization of governments that exists for the promotion of peace and security, development, and human rights throughout the world. Formed after World War II, the UN has played a unique role in world history during the past 60 years, yet its role and authority in today's world are often challenged. This seminar will examine both the history of the United Nations and its current activities. Is the UN a feckless organization of incompetents that is doomed to failure? Is it a power-hungry incipient world government that threatens the authority of sovereign states? Or is it a complex system of key international organizations that are playing critical roles in the promotion of widely shared ideals, including peace, prosperity, and personal freedom? Readings and discussions will focus on these and related topics.

John R. Wilmoth is an Associate Professor in the Department of Demography. Most of his research concerns the revolution in human longevity during recent centuries and methods for the statistical monitoring of human population trends. He has taught at UC Berkeley since 1990. However, he recently spent two years on leave from Berkeley while working for the Population Division of the United Nations in New York.

**Earth and Planetary Science 24, Section I**  
**Earthquake Prediction and the Myth of Solid Ground (1 unit, P/NP)**  
**Professor Roland Burgmann**  
**Monday 3:00-4:00, 401 McCone Hall, CCN: 19033**

As a scientist studying earthquake deformation, Professor Burgmann is invariably asked if earthquakes can be predicted. The short answer continues to be "No." In this seminar the (few) successes and (many) challenges to earthquake prediction will be explored. The *Myth of Solid Ground: Earthquakes, Prediction and the Fault Line Between Reason and Faith* by David Ulin will be used as a guide through the scientific and non-scientific aspects of the topic. Some of the topics mentioned in the book will be explored more deeply by reading related research papers and seeking dialogue with some of the scientists featured in the book.

Professor Roland Burgmann did his undergraduate studies in geology in Tuebingen Germany, followed by an M.S. degree from the University of Colorado at Boulder and Ph.D. work at Stanford University. During his studies his interests evolved from a focus on structural geology and tectonics towards active tectonics and geodetic measurements of earthquake deformation. This may well have been prompted by the occurrence of the 1989 Loma Prieta earthquake during his first few weeks at Stanford. Professor Burgmann taught for three years at UC Davis before coming to Berkeley in 1998. His recent research projects focus on the active earthquake cycle and post-earthquake deformation in northwest Turkey, in the Mojave Desert, California, along the Denali fault, Alaska, and in southeast Asia following the great 2004 Sumatra earthquake. He also integrates deformation and seismic data towards an improved understanding of active deformation from major faults in the San Francisco Bay area.

**Earth and Planetary Science 24, Section 2**  
**Water in the Twenty-first Century (1 unit, P/NP)**  
**Professor Chi-Yuen Wang**  
**Monday 2:00-3:00, 401 McCone Hall, CCN: 19036**

The search for fresh water is a problem as old as civilization. Despite the advances in technology, the availability of fresh water remains a critical problem in many parts of the world. Prediction goes that water shortage will be a worse problem than the shortage of energy in the twenty-first century and will shape national economies and geopolitical alliances. In this seminar we will survey the shortage of fresh water as an environmental problem in various parts of the world, we will discuss the current efforts undertaken by communities and nations to combat this problem, and we will discuss possible solutions. This course is also listed as Environmental Sciences (CCN: 30424). **Students who are concerned about the shortage of fresh water as an environmental problem of the planet earth and want to know more about the problem and the current efforts in combating this problem are encouraged to enroll. This is a Green Theme seminar.**

Chi-Yuen Wang is a Professor of the Graduate School in the Department of Earth and Planetary Science. He has researched aspects of hydrogeology for many years and has taught an upper-division course and a graduate-level course on hydrogeology.

**Earth and Planetary Science 24, Section 3**  
**Oceans in the News (1 unit, P/NP)**  
**Professor Jim Bishop**  
**Tuesday 2:00-3:00, 325 McCone Hall, CCN: 19038**

The focus of this seminar will be "Ocean in the News". Not one week goes by without major articles in print/online media such as The San Francisco Chronicle, New York Times, etc. News items: Pollution?, an Ice-Free Arctic Ocean?, Law of the Sea?, Fisheries?, Economics and Commerce?, Sea Level Rise?, An Ocean Fix for the CO<sub>2</sub> Problem?, Ecological Discoveries? and more. We'll delve into the details of several of these focus areas over the course of the term. Students will be graded on active participation and one formal exercise such as a term paper or presentation. **This is a Green Theme seminar.**

Jim Bishop is a Professor in the Department of Earth and Planetary Sciences. His research focuses on understanding how the oceans sequester atmospheric carbon dioxide. He loves to go to sea and has logged about 1.5 years at sea during 32 oceanographic expeditions. For more information regarding

Professor Bishop, visit his faculty webpage at [http://eps.berkeley.edu/development/view\\_person.php?uid=212268](http://eps.berkeley.edu/development/view_person.php?uid=212268).

**Economics 24, Section I**  
**Reading Freakonomics by Dubner and Levitt (1 unit, P/NP)**  
**Professor Paul A. Ruud**  
**Monday 5:00-6:00, 111 Kroeber Hall, CCN: 22443**

**Food for Thought dining arrangements will be discussed in class.**

We will read the best seller *Freakonomics* by Dubner and Levitt. This book contains articles originally written by Chicago economist Steven D. Levitt and rewritten for a general audience with author-journalist Stephen J. Dubner. The articles investigate such atypical economic questions as "Which is more dangerous, a gun or a swimming pool?" or "Why do drug dealers still live with their moms?" We will plan to spend roughly two weeks on each of the six chapters, with additional reading as time, interest, and energy permit. **This seminar is part of the Food for Thought Seminar Series.**

Paul Ruud is a Professor in the Department of Economics. His research focuses on econometrics, the intersection between economics and statistics.

**Education 24, Section I**  
**Civil Rights Law in Higher Education (1 unit, LG)**  
**Ms. Sheila O'Rourke**  
**Tuesday 2:30-4:00, 4529 Tolman Hall, CCN: 23524**

**This seminar will meet the first ten weeks of the semester.**

This seminar will provide an introduction to civil rights issues in higher education such as affirmative action, race discrimination, sexual harassment, sex discrimination, regulation of hate speech, and civil rights protections for lesbian/gay/bisexual students. Reading materials will include actual court cases involving colleges and universities, as well as articles and commentaries. Students will be expected to complete weekly reading assignments and participate in classroom discussions.

Sheila O'Rourke is the Assistant Vice Provost for Equity and Diversity at the University of California Office of the President. She was formerly the Assistant Vice Provost for Academic Compliance at the Berkeley campus. She received her J.D. from Boalt Hall and is a member of the California Bar. She previously served as a civil rights attorney for the U.S. Department of Education, Office for Civil Rights, where she was responsible for the enforcement of federal civil rights laws in education. She has taught constitutional law at the University of San Francisco Law School and legal writing at Stanford Law School.

**Energy and Resources Group 24, Section I**  
**The Science, Technology, Policy, and Politics of California Air Pollution (1 unit, P/NP)**  
**Professor Robert Sawyer**  
**Friday 2:00-4:00, 323 Barrows Hall, CCN: 27403**

**This seminar will meet for two hours on six Fridays plus two field trips on dates to be determined. The first seminar meeting will occur during the first week of instruction on Friday, January 25, 2008. The other Friday seminar meeting dates are February 8, February 29, April 4, April 18 and May 9, 2008. The field trip dates will be announced in class.**

California experiences the nation's worst air quality. Its innovative regulatory program is a model for the nation and the world. This seminar examines current California air pollution issues including health-based air quality standards and their attainment, who did kill the electric car, growth-eroding emissions reduction, motor vehicles that clean the air, and California's role in addressing global warming. The seminar requires a short paper and presentation. **This is a Green Theme seminar.**

After forty years on the Berkeley faculty, Professor Sawyer, the Class of 1935 Professor of Energy Emeritus, accepted the appointment of Governor Schwarzenegger to head California's air quality control agency, the California Air Resources Board, and served in this capacity for eighteen months. While at Berkeley, his teaching and research focused on air pollutant formation and control, motor vehicle emissions, energy and environment, and regulatory policy. This seminar is an unusual opportunity to explore air pollution issues with a professor who also led California's regulatory program.

**Engineering 24, Section I**  
**Time, Money, and Love in the Age of Technology (1 unit, P/NP)**  
**Lecturer Americ Azevedo**  
**Monday 1:00-2:00, 45 Evans Hall, CCN: 2765 I**

Many people in technological societies complain of "time poverty." What are the real relationships between time, money, and love in our lives? Where is love in a world dominated by the technological paradigm? Is there a balance to be found? Does technology make us happy? What is the good life? How can we cultivate peace of mind in a world of rapid change? These and other fundamental questions will be at the heart of a semester-long Socratic dialogue. **This seminar is for engineering, business, and liberal arts students.**

Americ Azevedo has pursued a life-long study of world religions and spirituality, along with a continued commitment to Socratic dialogue. Though his background is in Philosophy, his business and teaching career have brought him extensively into the world of information technology, with an emphasis on collaborative technologies, e-learning, and their cultural implications. He is especially concerned with how we can maintain our humanity in an increasingly technological world. He has been at UC Berkeley since Fall 2000 and teaches courses in the College of Engineering and the Department of Peace and Conflict Studies. For more information regarding Americ Azevedo and his courses, talks, workshops, publications, media coverage, fellowships and awards, visit his website at <http://socrates.berkeley.edu/~americ/>.

**English 24, Section I**  
**Visual Culture and Autobiography (1 unit, P/NP)**  
**Professor Hertha D. Sweet Wong**  
**Wednesday 5:00-8:00, 300 Wheeler Hall, CCN: 28087**

**This seminar will meet the first five weeks of the semester.**

Visual culture is not just about pictures, but the (post) "modern tendency to picture or visualize existence"—what W.J.T. Mitchell calls "the pictorial turn." Not surprisingly, as contemporary writers and artists struggle to find forms that convey postmodern individual identities in multicultural, often urban, social landscapes, they experiment with visual/verbal forms of self-representation and self-narration: story quilts, family photo albums, letters, comic books (co-mix), artists' books, photo-biographies, video and film, performance art, homepages, "zines," and more. Course requirements include attendance, participation, completion of in-class activities, and a short course journal. The required books for this seminar are N. Scott Momaday's *The Way to Rainy Mountain* and Art Spiegelman's *Maus* (2 volumes).

Hertha D. Sweet Wong is an Associate Professor in the English Department and specializes in American literatures, Native American literatures, autobiography and visual culture. Currently, she is working on a book on visual autobiography.

**Environmental Science, Policy, and Management 24, Section 1**  
**Discussions on Evolutionary Biology (1 unit, P/NP)**  
**Professor Philip Spieth**  
**Wednesday 3:00-4:00, 107 Mulford Hall, CCN: 29130**

Discussions on Evolutionary Biology is a seminar for freshmen that explores the intellectual excitement of evolutionary biology and examines its significance for understanding the world we live in. Weekly readings and roundtable discussions introduce basic facts and principles of evolutionary biology, including both historical perspectives and contemporary issues. Attention is given to popular misconceptions of biological evolution.

Philip T. Spieth is an Emeritus Professor in the Department of Environmental Science, Policy, and Management who worked with computer models of evolution and studied genetic variation in natural populations of fungi. He joined the faculty of the former Department of Genetics in 1971 and taught population genetics for thirty years at UC Berkeley in both introductory genetics courses and in courses for advanced undergraduates and graduate students and has been a co-author of a general genetics textbook. He created and has taught Discussions on Evolutionary Biology since the inception of the freshman seminar program in the early 1990's. Currently he works with the National Center for Science Education, a nonprofit organization devoted to the teaching of evolutionary biology in public schools.

**Environmental Science, Policy, and Management 24, Section 2**  
**Issues in Natural Resource Conservation (1 unit, P/NP)**  
**Professor David Wood**  
**Friday 9:00-10:00, 106 Mulford Hall, CCN: 29133**

**There is one optional field trip to a Bay Area location on a Saturday from 8:00 am to 3:00 p.m. to be arranged.**

Some of the issues to be dealt with include management and preservation of timberlands; reducing fire risk through logging; management in wilderness areas; endangered species; importation and exportation of logs; the lives of John Muir and Gifford Pinchot; trees and religion; can rain forests be saved?; killer bees; coral reefs—human threat; jobs versus spotted owls; vegetarianism; Muir Woods, past and present; garbage in the United States; biofuels; solar power; airport expansion in the San Francisco Bay Area; the competition for water; global warming; and many more topics to be selected by the students. **This is a Green Theme seminar.**

Professor Wood's research interests include host-selection behavior of forest insects, chemical ecology, the biology and ecology of bark beetles, forest pest management, the biodeterioration of wood by insects, and insect/pathogen/tree interactions.

**Environmental Sciences 24, Section 1**  
**Water in the 21st Century (1 unit, P/NP)**  
**Professor Chi-Yuen Wang**  
**Monday 2:00-3:00, 401 McCone Hall, CCN: 30424**

The search for fresh water is a problem as old as civilization. Despite the advances in technology, the availability of fresh water remains a critical problem in many parts of the world. Prediction goes that water shortage will be a worse problem than the shortage of energy in the twenty-first century and will shape national economies and geopolitical alliances. In this seminar we will survey the shortage of fresh water as an environmental problem in various parts of the world, we will discuss the current efforts undertaken by communities and nations to combat this problem, and we will discuss possible solutions. This course is also listed as Earth and Planetary Sciences (CCN: 19036). **Students who are concerned about the shortage of fresh water as an environmental problem of the**

**planet earth and want to know more about the problem and the current effort in combating this problem are encouraged to enroll. This is a Green Theme seminar.**

Chi-Yuen Wang is a Professor of the Graduate School in the Department of Earth and Planetary Science. He has researched aspects of hydrogeology for many years and has taught an upper-division course and a graduate-level course on hydrogeology.

#### **French 24, Section I**

**Films of the French New Wave (1 unit, P/NP)**

**Professor Nicholas Paige**

**Monday 5:00-7:00 and Tuesday 3:00-4:00 , two locations - see below, CCN: 32320**

**This seminar will meet on Mondays for mandatory screenings in 155 Kroeber Hall and on Tuesdays for discussion in 279 Dwinelle Hall.**

From Los Angeles to Teheran to Hong Kong, the films of the French New Wave remain a key reference and inspiration for today's cutting edge cinema. This Freshman Seminar will introduce students to a number of representative films of the New Wave, providing along the way a look at the theoretical and cultural factors that help explain this extraordinary flowering of filmmaking talent in the late 1950s and early 1960s. Movies screened include works by Truffaut, Godard, Varda, Demy, Rohmer, Eustache and others; we will also be reading some important short essays from the period that will help bring the films' originality into focus. General points to be explored include France and American popular culture; post-war economic transformations and consumerism; misogyny and feminism; the documentary image; the subversion and pastiche of genre; and the ideology of form. **No previous knowledge is assumed; all films will be subtitled. Enrolling students must be able to attend scheduled weekly screenings.**

Nicholas Paige has been teaching in the Department of French since 1996. His teaching and research centers on seventeenth- and eighteenth-century literature and culture. He has also published on detective fiction and film. A recent essay on the filmmaker Jean-Luc Godard has appeared in the journal *Representations*.

#### **Geography 24, Section I**

**Geographies of the American Home (1 unit, P/NP)**

**Professor Paul Groth**

**Thursday 4:00-5:00, 55A McCone Hall, CCN: 36423**

**A few seminar sessions will be field trips, on foot, that will go past 5:00 p.m. on dates to be determined; we will plan those meetings to avoid, as best as possible, any complications for the people in the class.**

Our homes are bundles of ideas as well as buildings and locations within the American city. Students in this seminar will explore ideas, forms, and debates about American homes since 1900. We will look for interactions between the scales of room, house, yard, street, and district; how interior spaces are diagrams of sociability and privacy; the ways in which homes, yards, and neighborhoods reflect individual and cultural identities, genders, social status, politics, and power relations as well as fantasies, economics, and connections to wilder nature; how high-design homes relate to their ordinary counterparts; how apartments, lofts, and workers' cottages contrast with single-family alternatives. Each week there will be brief readings. **This is a general interest course, conceived for any new Berkeley student who is curious about the American home. The most likely students are those whose majors are geography, American studies, architecture, history, sociology, anthropology, or art history; the readings will draw from most of these disciplines.**

Paul Groth is a Professor in geography, architecture, and American studies. His overarching interests and publications are in cultural landscape studies; that is, the history, form, and meaning of ordinary built environments, particularly in the United States. He is currently at work on a book connecting changes in American work places, public recreation, and homes. More information regarding Professor Groth is available on his faculty web page at [http://geography.berkeley.edu/PeopleHistory/faculty/P\\_Groth.html](http://geography.berkeley.edu/PeopleHistory/faculty/P_Groth.html).

### **German 24, Section I**

#### **Nihilism and Nothingness: The Roots of Existentialism (I unit, P/NP)**

**Professor Karen Feldman**

**Tuesday 2:00-3:00, 283 Dwinelle Hall, CCN: 37469**

In this freshman seminar we will read and discuss short excerpts from existentialist works of philosophy and literature. We will focus on the topics of nothingness, meaninglessness and negativity in texts of Nietzsche, Heidegger, Kafka, Sartre, de Beauvoir and others. The course will also make some reference to such films as "Groundhog Day," "The Truman Show" and David Cronenberg's "eXistenZ".

Karen S. Feldman is Assistant Professor in the Department of German at UC Berkeley. She is author of a book on the rhetoric of conscience in modern thought and co-editor of an anthology of Continental philosophy. She has taught at Berkeley for the past seven years on a variety of topics in philosophy, rhetoric, literary theory and gender studies.

### **History of Art 24, Section I**

#### **Looting: What's Going on in the Art World? (I unit, P/NP)**

**Professor Gregory Levine**

**Thursday 5:00-6:00, 425 Doe Library, CCN: 05462**

Art museums in North America (The Getty, Metropolitan Museum of Art, Museum of Fine Arts, Boston, to name a few) are being forced to return works of ancient art to Italy and other countries. Museum curators, art collectors, and art dealers are under suspicion of trafficking works of art acquired illegally; some are under indictment or in the process of being tried in the courts. Museums, archaeological sites, temples, shrines, and varied cultural sites are being disturbed and looted for the art market. What's going on? This seminar will consider the looting of art and the illicit antiquities trade, drawing on recent incidents reported in the press and explored in a number of books on looting. Our discussion will include the recent scandals at the Getty, the looting of the Kabul museum, the repatriation of the Akshobhya Buddha to China, and so forth. We will discuss the process of looting, its impact on cultural sites and communities, repatriation, and the tension between art/archaeology, aesthetics and cultural heritage.

Greg Levine is Associate Professor in the Department of History of Art, specializing in the art and architectural history of Japan, histories of collecting and the museum, and modern interpretations of the visual past. He is currently working on a book on fragments of Buddhist images ("Buddha heads"), a project that addresses modern looting of Buddhist sites.

### **Integrative Biology 24, Section I**

#### **The Darwinian Revolution (I unit, LG)**

**Professor Brent Mishler**

**Thursday 10:00-11:00, 5053 Valley Life Sciences Building, CCN: 43003**

The Darwinian Revolution was one of the greatest upheavals in human thought, involving the very basis of our self-awareness: Where did we come from? What is or should be the basis for our ethics and social behavior? Where are we going? Topics to be considered include: historical antecedents of Darwin's theories; the scientific evidence for evolution and natural selection; the impact of Darwinism on religion, social theory, and ethics; later scientific developments and recent challenges by latter-day creationists. The goal is to use these interdisciplinary topics as an exemplar of scientific methods and change, and of the

unsteady relationship between science and the public. In addition to attending and participating in each week's lecture/discussion, each student will be required to write a short paper (five pages maximum) due at the end of the semester.

Brent Mishler is Professor in the Department of Integrative Biology and Director of the University and Jepson Herbaria. His research interests are in the systematics and evolution of plants, especially mosses. His lab applies methods ranging from microscopy and computer-assisted morphometrics, through tissue culture and DNA sequencing. He is also interested in the theory of systematic biology, as well as the philosophy and history of science.

**Integrative Biology 24, Section 2**  
**Animal and Human Navigation: Which Way Is Home? (1 unit, LG)**  
**Professor Roy Caldwell**  
**Monday 2:00-3:00, 5192 Valley Life Sciences Building, CCN: 43006**

A homing pigeon can return to its loft after being shipped one thousand km to a place it has never been. A whale spends its summers in the Bering Sea and its winters near Maui. A female sea turtle returns for the first time to a beach where she hatched thirty years earlier to lay her own eggs. A Monarch butterfly flies south two thousand km to spend the winter in a secluded grove in central Mexico. A limpet returns forty cm to a favorite depression in a rock. The abilities of animals to navigate have intrigued biologists for decades. We will read a series of papers describing how animals navigate and how they use such methods as landmarks, celestial cues, and geomagnetic fields to determine where to go and what route to follow. We will also attempt to replicate experiments that suggest that humans are able to navigate using geomagnetic fields. At the end of the semester, each student will be required to write a short review paper discussing navigation and orientation by an animal of his or her choice. **This seminar is designed for students with a general interest in animal biology and more specifically animal behavior. Registration for this seminar is by instructor approval only. Interested students should put their names on the waitlist and then attend the first class meeting.**

Roy Caldwell is a Professor of Integrative Biology with a background in insect migration and marine invertebrate animal behavior.

**Integrative Biology 24, Section 3**  
**How and Why Do Birds Sing? (1 unit, P/NP)**  
**Professor George Bentley**  
**Tuesday 2:00-3:00, 5053 Valley Life Sciences Building, CCN: 43009**

Do you ever wonder why some birds sing and others just call? Would you like to know how songbirds produce such melodious tunes? What about the dawn chorus? Sexual attraction? Aggression? It's just the day-to-day life of songbirds. Come and learn about the anatomy and physiology of birdsong, from the specialized organs to highly evolved brains. Find out how bird song can cause hormones to surge. This seminar will cover the hows and whys of vocal communication in birds with an emphasis on what classic and cutting-edge research has taught us.

George Bentley received his B.Sc. in biology (1993), and his Ph.D. in zoology (1996) at the University of Bristol in the United Kingdom. Following receipt of his doctorate, Dr. Bentley joined the Behavioral Neuroendocrinology Group at Johns Hopkins University, initially as a postdoctoral fellow and later as an associate research scientist. In January 2000, Dr. Bentley moved to Professor John Wingfield's laboratory at the University of Washington as a research associate in the Departments of Psychology and Biology. Dr. Bentley moved to Berkeley in June of 2005, where he is an Assistant Professor in the Department of Integrative Biology and his lab focuses on how the brain detects environmental cues and turns them into hormonal signals. These signals in turn affect the behavior and physiology of the organism itself, or organisms to which the behavior is directed. For example, a male bird's song can cause a female to solicit

copulation and change her hormonal status. Exactly how the brain performs this feat is largely unknown, but birds are an excellent model for this type of research as they have extravagant auditory and visual displays. The research in Dr. Bentley's lab is mostly performed on birds, but is not limited to this vertebrate class. Current projects in the lab involve sheep, horses, rats, mice, hamsters and humans; many of these projects are in collaboration with other labs around the world (Japan, New Zealand, Germany, United Kingdom). Undergraduates are especially encouraged to get involved in active research projects. Currently, there are nine undergraduates working in the Bentley lab on neuroendocrine mechanisms of regulation of reproduction and on the neural basis of song behavior. For more information regarding Dr. Bentley, visit [http://ib.berkeley.edu/research/interests/research\\_profile.php?person=17](http://ib.berkeley.edu/research/interests/research_profile.php?person=17).

#### **Integrative Biology 24, Section 4**

##### **Plants of the UC Berkeley Botanical Garden (1 unit, LG)**

**Professor David Ackerly**

**Wednesday 12:00-2:45, UC Berkeley Botanical Garden, CCN: 43012**

**The class will meet alternate Wednesdays at 12:00 at the Hearst Mining Circle to take the shuttle bus to the Botanical Garden. The actual class time is 12:30-2:45 p.m. Meeting dates: 1/23, 2/6, 2/20, 3/5, 3/19, 4/2, 4/23, 5/7 (note we skip 2 weeks from 4/2 to 4/23).**

The UC Botanical Garden is home to thousands of wild-collected plant species from all over the world. In this seminar, we will spend each class in a different part of the garden, examining plants from California, the New World deserts, temperate forests, the tropics, and more. Based on our observations, we will pose questions about the diversity of plant form and function: why are some leaves small and others big? Why are desert plants often succulent? How did cactus get their thorns? Why do some plants drop their leaves in winter or summer? In the final several classes, students will work in small groups to conduct independent mini-projects, and then share the results with the entire group. Our goal is to learn how scientists turn simple observations into hypotheses and research projects, and at the same time to enjoy the great diversity of the Botanical Garden's plant collection. **This seminar is intended for students who enjoy being outdoors and are curious to learn more about plant ecology and evolution. This is a great introduction for possible Integrative Biology majors who are curious about the department. Enrollment is limited to fifteen freshmen. This is a Green Theme seminar.**

Professor Ackerly joined the faculty at UC Berkeley in 2005. His research focuses on the ecology and evolution of plant diversity, focusing on the form and function of woody plants. He has worked in temperate and tropical forests of New England, Japan, Brazil and Mexico, and currently focuses his research on the flora of California.

#### **Integrative Biology 24, Section 5**

##### **Humans Evolving (1 unit, LG)**

**Professor Leslea Hlusko**

**Wednesday 3:00-4:00, 4110 Valley Life Sciences Building, CCN: 43015**

In this seminar we will read and critically review a recently published non-fiction book written for the general public about human evolution /human biology. Each week we'll read and critically evaluate a chapter. Students will also be asked to do research into sections of the book to further evaluate the author's claims and interpretations. The goals of the course are 1) to develop the critical thinking skills needed to understand biology as it is presented to the general public, and 2) to develop the skills needed to maximize one's undergraduate experience here at UC Berkeley.

Professor Leslea Hlusko is interested in the genetic basis of mammalian skeletal variation and evolution with a focus on primates. Her research includes paleontological field projects in Tanzania and Ethiopia as well as genetics research done in collaboration with the Southwest Foundation for Biomedical Research.

As such, she approaches human biology from the perspectives of paleontology and biomedicine. She received her undergraduate degree from the University of Virginia and a Ph.D. from Penn State University. Professor Hlusko was a Professor at the University of Illinois for four years before moving to Berkeley in 2004. Please feel free to visit her lab web site for more information <http://ib.berkeley.edu/labs/hlusko/>.

**Integrative Biology 24, Section 6  
Islands as Model Systems (1 unit, P/NP)**

**Professor Patrick V. Kirch**

**Thursday 2:00-3:00, 5192 Valley Life Sciences Building, CCN: 43018**

Oceanic islands offer outstanding model systems for investigating and understanding many kinds of ecological processes. In a model system, fundamental variables can be readily identified, and the mechanisms of interaction among them tested. While model systems are by definition simple, they nonetheless contain all of the essential elements found in more complex systems, or in systems that operate on a larger scale, hence their widespread application and utility. Islands offer model systems for ecosystem studies due to the small number of well-defined "state factors" that display especially clear properties, such as biogeochemical gradients, strongly orthogonal variation in climate, and restricted flora and fauna. Islands also offer model systems for investigating and understanding human cultural evolution, including the complex interactions between human populations and the ecosystems they inhabit. This seminar will explore the potential of island model systems to aid in our understanding both of natural evolutionary and ecological processes, and of human-environment interactions. The seminar will draw particularly on recent and on-going research in Hawaii and other Polynesian island groups. **This is a Green Theme seminar.**

Patrick Kirch is the Class of 1954 Professor of Anthropology and Integrative Biology. He has conducted archaeological and paleoecological research throughout the Pacific Islands, and is particularly interested in the long-term interactions between human populations and island ecosystems. His current multi-disciplinary research project involves collaboration with ecologists, paleobiologists, soil scientists, demographers, and archaeologists to model the complex dynamics of the Hawaiian ecosystem from Polynesian settlement to the present.

**Integrative Biology 24, Section 7**

**San Francisco Bay Area Global Change—Past, Present and Future (1 unit, P/NP)**

**Professor Jere Lipps**

**Friday 2:00-4:00, 1101 Valley Life Sciences Building, CCN: 43020**

**The first meeting of this seminar will be on Friday, February 1, 2008 at 2:00 p.m. There will be four additional classroom meetings to be arranged and three field trips including one overnight trip on a weekend also to be arranged with the class as a whole.**

This is a field seminar with five or six lectures/meetings to cover background and field trip arrangements, and four or five field trips to different places in the Bay Area where we can study the history and the present consequences—and anticipate the future—of global climate change on the Bay Area. The class will visit sites that demonstrate the past conditions in San Francisco Bay over the last two million years where we can see past sea levels, fossils and sedimentary rocks; the modern Bay showing flooding by sea level rise over the past 13,000 years and drowned islands and river valleys; and sites where sea level rise, temperature increases, and vegetation and animal changes will take place, as well as the effects of these on human activities around the Bay. Each student will choose a topic from those studied in the field course to be submitted as a Power Point and presented orally to the class. **Students should enjoy field work and have access to a digital camera for taking pictures of landscapes, fossils, and living organisms. This is a Green Theme Seminar.**

Jere Lipps is a geologist, paleobiologist and marine biologist and Professor of Integrative Biology and Curator in the Museum of Paleontology at UC Berkeley. He has worked on the geology, paleontology, and past marine environments in and near the San Francisco Bay for many years. For more information regarding Professor Lipps, visit <http://www.ucmp.berkeley.edu/people/jlipps/jlipps.html>.

**Journalism 24, Section I**  
**Great Non-fiction (1 unit, LG)**  
**Professor Lydia Chavez**  
**Wednesday 11:00-12:00, 104 North Gate Hall, CCN: 48003**

This seminar will take a look at some of the best non-fiction, reading pieces from George Orwell to Joan Didion. **Enrollment is limited to twelve freshmen.**

Lydia Chavez, a former reporter for The New York Times, has written books and articles on affirmative action, Cuba and immigration.

**Landscape Architecture 24, Section I**  
**The City in Film (1 unit, P/NP)**  
**Professor G. Mathias Kondolf**  
**Monday 5:00-8:00, 315C Wurster Hall, CCN: 48502**

**This seminar will meet for seven weeks on the following dates: February 4, February 18, March 3, March 17, April 7, April 21 and May 5, 2008.**

The development of filmmaking in the late 19th and early 20th centuries coincided with a massive shift in population from rural to urban areas in North America and Europe, and the urban experience has been a common theme in films from the beginning of the medium. From the futuristic *Metropolis* (Lang 1927) to *Crash* (Haggis 2004), film has been among the most important media through which society has wrestled with the issues thrust upon it by concentrations of population and the attendant infrastructure. This course involves viewing a selection of classic to recent films, selected readings about the films and/or their subject matter and historical context, and discussion. Students prepare brief assignments about how the city is portrayed in the various films and how these depictions reflect contemporary concerns about industrialization, environmental degradation, race relations, etc. Format: Lecture, film viewing, and seminar discussion.

Dr. G. Mathias (Matt) Kondolf is an Associate Professor of Landscape Architecture & Environmental Planning at UC Berkeley and a fluvial geomorphologist specializing in environmental river management and restoration of rivers and streams, conducting research in California and other Mediterranean-climate regions. He is a principal investigator in the National River Restoration Science Synthesis project, a national-level study of river restoration, a member of the Environmental Advisory Board to the Chief of the US Army Corps of Engineers, and a member of the National Research Council Committee on Hydrology, Ecology, and Fishes of the Klamath River Basin. Dr. Kondolf was an author of the CALFED Ecosystem Restoration Program Strategic Plan. He developed the restoration flow regime adopted in the 2006 settlement to restore salmon in the San Joaquin River below Friant Dam.

**Linguistics 24, Section 2**  
**Language Myths (1 unit, P/NP)**  
**Professor Larry Hyman**  
**Tuesday 10:00-11:00, 123 Dwinelle Hall, CCN: 52284**

Everyone has preconceptions about language in general and languages in particular. But are these accurate? In this course we will discuss and evaluate a number of common language myths such as these:

Are all languages equally complex? Are some more logical? More beautiful? Is there such a thing as a primitive language? Do some people speak more grammatically than others? Is the English language undergoing a process of decay? We will draw on facts from English, other languages that may be familiar to participants, and less known languages which bear on the above and other questions. **No linguistic or other prerequisites are required. All interested students are welcome, especially students who have a fascination with language and/or languages.**

Larry M. Hyman is a Professor of Linguistics at Berkeley where he chaired the Department of Linguistics from 1991 to 2002. He obtained his Ph.D. at UCLA in 1972 and subsequently taught at USC until coming to Berkeley in 1988. His research centers around the study of sound systems (phonology) and grammar, particularly within Bantu and other Niger-Congo languages in Africa. His publications include several books and numerous articles in the major journals in general and African linguistics. One of his long-standing interests is the study of tone languages, as found in Africa, Asia, Meso-America and elsewhere.

### **Linguistics 24, Section 3**

#### **Language and Politics in Southern Africa (1 unit, P/NP)**

**Professor Sam Mchombo**

**Thursday 10:00-11:00, 123 Dwinelle Hall, CCN: 52287**

**Food for Thought dining arrangements will be discussed in class.**

This seminar will focus on political developments in Southern Africa and the use of language in fostering national identity and attaining cultural emancipation. We will look at case studies representative of the dynamics of the region. The topics covered will include a brief history of the peoples of Southern Africa; family structure, kinship systems and traditional political institutions; cultural practices and religious beliefs; the impact of contact with western culture and civilization on language issues and political organization; language and its role in fostering national identity in post-independence Africa; models of national language policy in multi-ethnic societies; language use and democratic practice and human rights; the impact of AIDS on economic development and linguistic ecology; prospects of mother-education, and the use of African languages in science and technology. Since the course is a seminar, students will be expected to participate actively in the class. There will be a course reader. There will be no examinations. Grades will be based on one 500-word paper and class participation. **This seminar is part of the Food for Thought Seminar Series.**

Sam Mchombo is an Associate Professor in the Department of Linguistics, which he joined in 1988. He received his B.A. from the University of Malawi and Ph.D. from the University of London. He pioneered and taught courses in Linguistics and African Language Structure in what is now the Department of African Languages and Linguistics in the University of Malawi. From 1985-1988 he was a member of the Linguistics faculty at San Jose State University, teaching courses on general linguistics, syntax, and semantics. His research focuses on grammatical theory and African linguistic structure. Recently, he has also focused on aspects of African politics, delivering talks at the World Affairs Council on emergent democracies, as well as human rights in Africa. His publications include *Theoretical Aspects of Bantu Grammar* (1993), *The syntax of Chichewa* (Cambridge University Press, 2004), and "Democratization in Malawi: Its Roots and Prospects," published in a volume edited by Jean-Germain Gros called *Democratization in Late Twentieth-Century Africa*. Other works include papers on "National Identity, Democracy and the Politics of Language in Malawi and Tanzania," as well as "The Role of the Media in Fostering Democracy in Southern Africa," both published in *The Journal of African Policy Studies*, "Religion and Politics in Malawi" in *Issues in Political Discourse Analysis* (2005), and "Sports and Development in Malawi" in *Soccer and Society* Vol. 7 No. 2-3, 2006. He has delivered invited lectures and conference presentations in Hong Kong, Europe, Mexico, and in Africa. In Spring 2003, he was appointed Distinguished African Scholar by the Institute for African Development at Cornell University.

### **Materials Science and Engineering 24, Section 2**

#### **Physics and Materials Science of Skateboarding (1 unit, P/NP)**

**Professor Daryl Chrzan**  
**Thursday 10:00-11:00, 39 Evans Hall, CCN: 53402**

The popularity of skateboarding and other extreme sports is increasing at a rapid pace. The sports are termed extreme in part because they place the participants and their equipment under extreme conditions. This seminar will explore the extreme conditions associated with skateboarding, and how materials science has been used to evolve the original sidewalk surfers into the modern-day skateboard. Topics to be discussed include the physics of skateboarding (including an analysis of the inevitable slam) and the implications of this physics for the design of wheels, boards, bearings, trucks and safety equipment. **There are no special prerequisite constraints—just an interest in skateboarding, physics and materials science.**

Professor Daryl C. Chrzan received his Ph. D. in Physics, specializing in condensed matter theory, from UC Berkeley in 1989. From 1990 to 1995, he was a Senior Member of the Technical Staff at Sandia National Laboratories, Livermore. In 1995, Professor Chrzan joined the (now) Department of Materials Science and Engineering at UC Berkeley. His research emphasizes the prediction of the physical properties of metals and semiconductors based on knowledge of the atoms composing the materials. He has published over 70 papers, and presented over 40 invited talks at universities, laboratories, and international meetings. Professor Chrzan spent much of his youth on a skateboard, and can often be found carving the bowls at nearby skateparks.

**Materials Science and Engineering 24, Section 3**  
**Materials and Weapons of War through History (1 unit, P/NP)**  
**Professor J. W. Morris Jr.**  
**Friday 3:00-4:00, 348 Hearst Mining Building, CCN: 53403**

For most of known history, advances in materials technology have appeared primarily in two areas: objects of art and weapons of war. The former build civilization. The latter have often set its course, as critical military engagements from Kadesh to Kosovo have most often been dominated by the forces with the superior technology. In this seminar, we shall use the development of weapons through history as a vehicle to understand the important properties of different types and classes of materials, and trace their technological development and technical significance across the millennia.

Professor Morris has been a member of the Berkeley faculty since 1971, and was Program Leader for the Advanced Metals Program at the Lawrence Berkeley Laboratory for almost twenty years. He has taught the introductory course Material Science and Engineering 45 for most of that period, and is a recipient of the University's Distinguished Teaching Award.

**Mathematics 24, Section I**  
**The Mathematics of Gambling (1 unit, P/NP)**  
**Professor Alberto Grunbaum**  
**Tuesday 11:00-12:30, 939 Evans Hall, CCN: 54397**

**This seminar will meet the first ten weeks of the semester.**

People have gambled using dice or tossing coins for several centuries. In fact, several important areas of mathematics were developed to answer questions posed by gamblers. These pieces of mathematics eventually found unexpected applications in physics, chemistry, and several parts of engineering. We will discuss a number of questions that a gambler may consider of interest. The three guiding principles in the selection of material will be 1) it will be very elementary; 2) it will show that common sense cannot always be trusted; and 3) it will illustrate the interconnection between mathematics and several physical sciences.

Alberto Grunbaum is a Professor in the Mathematics Department at UC Berkeley. His fields of expertise include analysis, probability, integrable systems and medical imaging.

### **Mathematics 24, Section 2**

#### **What is Happening in Math and Science? (1 unit, P/NP)**

**Professor Jenny Harrison**

**Friday 3:00-4:00, 891 Evans Hall, CCN: 54400**

In this seminar, we will discuss the latest developments in science and math. Students will present short oral reports from articles of their choice in the Science Times, Scientific American, Science News, or articles in What is Happening in the Mathematical Sciences. Discussion and debate are encouraged especially when controversial or challenging issues arise, e.g., cloning of organs, string theory, stem cell research, and geopolitics of global warming. Students are encouraged to think of applications and possibilities of new research projects. Brainstorming and creative thinking are encouraged! Students considering a major in math or science have found this seminar a useful resource to help clarify their choice. **Students considering a major in math or science have found this seminar a useful resource to help clarify their choice.**

Jenny Harrison obtained her Ph.D. in mathematics in Warwick, England. She has taught at Oxford, Princeton, and Yale, as well as UC Berkeley. Her research interests include a new quantum calculus that applies equally to charged particles, fractals, smooth surfaces, and soap films. Applications of this theory to sciences may arise during this seminar.

### **Mathematics 24, Section 3**

#### **Knot Theory (1 unit, P/NP)**

**Professor Rob Kirby**

**Tuesday 8:30-10:00, 939 Evans Hall, CCN: 54403**

**This seminar will meet the first week of classes and nine more dates to be arranged.**

Knot theory has been a lively topic in mathematics for over one hundred years. It concerns the different ways that circles can be twisted and embedded into 3-dimensional space. The Borromean rings is an example of a link with three components, which is "different" from three separate rings. We will study polynomials associated with knots (or links) that help distinguish different knots, e.g. the Jones polynomial and Alexander polynomial. Other topics are braids, surfaces that the knot bounds, and surgery to construct interesting 3-dimensional manifolds. The seminar activities will be a mix of reading, discussion, and presentations by students and the instructor. **Calculus is not necessary for this seminar. The math that will be taught in this seminar will be on a level comprehensible to new students and is related to the concepts Math majors encounter when they take Math 142 and 140.**

Rob Kirby is a Professor of Mathematics. His mathematical specialty is geometric topology. He is currently working on the topology and geometry of low dimensional manifolds.

### **Mathematics 24, Section 4**

#### **The Geometry of Relativity (1 unit, P/NP)**

**Professor Alan Weinstein**

**Tuesday 2:00-3:30, 939 Evans Hall, CCN: 54405**

**This seminar will meet the first week of classes and nine more dates to be arranged.**

We will look at some of the mathematical ideas, particularly the geometric ideas, behind Einstein's special and general theories of relativity. Topics will include the linear algebra and geometry of Lorentz

transformations in flat space time (for special relativity) and an introduction to riemannian geometry (for general relativity). The seminar activities will be a mix of reading, discussion, and presentations by students and the instructor. **Students should have had Math IA or the equivalent. Further background in calculus and/or linear algebra is helpful but not essential. The math that will be taught in the seminar will give students a head start (or a review) for more advanced courses.**

Alan Weinstein is Professor and Chair in the Department of Mathematics. His mathematical specialty is differential geometry and its physical applications. One of his current research projects concerns new notions of symmetry in general relativity.

**Mathematics 24, Section 5**  
**Infinity and the Nature of Truth in Mathematics (1 unit, P/NP)**  
**Professor W. Hugh Woodin**  
**Wednesday 1:00-2:00, 939 Evans Hall, CCN: 55660**

The modern study of (mathematical) infinity has raised serious questions about the possible nature of mathematical truth. Problems discussed will include the Continuum Hypothesis and other classical problems concerning sets of real numbers. How does the introduction of higher notions of infinity affect these problems?

Hugh Woodin is a Professor of Mathematics and set theorist at University of California, Berkeley. He was Chair of the Department of Mathematics in 2002-03. For more information regarding Professor Woodin, visit [http://en.wikipedia.org/wiki/Hugh\\_Woodin](http://en.wikipedia.org/wiki/Hugh_Woodin).

**Molecular and Cell Biology 90A, Section I**  
**Evolution—Creatures, Not Creation (1 unit, LG)**  
**Professor Jeremy Thorner**  
**Friday 12:00-1:00, 2304 Tolman Hall, CCN: 57846**

The advent of molecular biology, recombinant DNA methodology, and the capacity to obtain the complete nucleotide sequence of any genome (from a bacterium to a human) has confirmed the close relationships among all organisms at the genetic and biochemical level, and has confirmed the major tenets of the theory of evolution that were based on the fossil record and other more circumstantial and empirical evidence based on field observations of populations. This course will discuss the unique physical and chemical properties of both water and carbon, and other molecules and elements on which the life forms on our planet are based; the principles of the scientific method and its application to our observations of the natural world; how the term "theory" is applied in science; and the forces that influence organismal survival, adaptation and speciation. Readings will range from Charles Darwin to Steven Jay Gould to James D. Watson.

Jeremy Thorner is a Professor in the Division of Biochemistry and Molecular Biology in the Department of Molecular and Cell Biology. He joined the Berkeley faculty on 1 July 1974, and has been here on this campus ever since. His current research addresses the mechanisms by which cells respond to and decode changes in their extracellular environment and induce the appropriate changes in metabolism, growth and proliferation rate, and cell shape, that allow the cell to cope properly with the changed circumstances. For more information regarding Professor Thorner, please visit his faculty web page at <http://mcb.berkeley.edu/faculty/BMB/thornerj.html>.

**Molecular and Cell Biology 90B, Section 2**  
**The New Biology and Biomedical Science of the 21st Century (1 unit, P/NP)**  
**Professor Richard Strohman**

**Tuesday 1:00-2:00, 2070 Valley Life Sciences Building, CCN: 57847**

Our seminar will examine evidence for the asserted fact that the fields of molecular biology and medicine are now undergoing revolutionary changes in theoretical outlook and practice. During the twentieth century these two fields were dominated by genetic determinism: the simplistic idea that all of life, from the cell to the organism of millions of cells, may be understood through genetic analysis alone and that diseases of humankind are similarly approachable. Much evidence has now accumulated making clear that this research plan, or paradigm, is incomplete and is unable to lead us to the next stages of scientific progress. We will ask questions and look for answers addressing the reasons, scientific, ethical, and cultural, for why and how so many scientists and other scholars could have been so wrong for so long, and we will identify the new developing consensus concerning a new paradigm and practice that will be able to lead us to the hills of vision in biology and medicine.

Professor Strohman has been chair of UCB Zoology Department (1973-1976) and director of UC Berkeley's Health and Medical Sciences Program (1976-79). While on leave from UC in 1990, he was Research Director for the Muscular Dystrophy Association's international effort to combat genetic neuromuscular diseases. Retired in 1991, he continues to teach courses and provide critical analysis dealing with the interface between biology and medicine, and the growing crisis in theoretical biology stemming from an over dependence on genetic reductionism.

**Molecular and Cell Biology 90D, Section I  
Infection, Immunity, and Public Health (1 unit, P/NP)  
Professor Mark Schlissel**

**Tuesday 4:00-5:00, 2066 Valley Life Sciences Building, CCN: 57859**

We share the earth with a vast array of microorganisms, many of which have the potential to harm us. Humans have evolved a complex and elegant immune system to prevent microbial infection and disease. This Freshman Seminar course will consist of a series of discussions about various aspects of human immunology including the immune response to diseases such as AIDS, smallpox, and anthrax. We will discuss strategies for developing vaccines and how simple public health interventions can prevent the spread of infectious disease. We will also consider how antimicrobial and antiviral drugs work and how new drugs are developed. **Discussion will be focused at a level that requires only a high school biology background and will also involve consideration of public policy aspects of microbial disease. This seminar is designed for freshmen who have a background in biology (AP biology or its equivalent recommended) and an interest in either public health or medicine as a career.**

Dr. Schlissel received his undergraduate degree from Princeton University and was trained in both clinical medicine and basic biology at Johns Hopkins University School of Medicine (M.D. & Ph.D.). After a residency in Internal Medicine at Hopkins Hospital, he did a post-doctoral fellowship at the Whitehead Institute at MIT in the lab of the Nobelist David Baltimore. Dr. Schlissel was a professor at Hopkins Medical School from 1991-1999 before joining the faculty at Berkeley in 1999 where is is now Professor of Immunology and of Biochemistry & Molecular Biology.

**Molecular and Cell Biology 90E, Section I  
Brain, Mind, Music (1 unit, P/NP)  
Senior Lecturer David E. Presti**

**Wednesday 3:00-4:00, 242 Dwinelle Hall, CCN: 57862**

Music has a deep and mysterious impact on the human psyche and on human behavior. This seminar will explore music, the brain, the human mind, and how they are related. Content will range from the biophysics of sound sensation and the neurophysiology of auditory perception to an exploration of the evolution of music, from its roots to modern genres.

David Presti has taught neuroscience in the Department of Molecular and Cell Biology for sixteen years. He has also taught neuroscience to Tibetan monks in India and is interested in how science can address the connection between what we know as the brain and what we call the mind.

**Molecular and Cell Biology 90E, Section 2**  
**Brain Science in Contemporary Film and Fiction (1 unit, P/NP)**  
**Professor Walter Freeman**  
**Wednesday 12:00-1:00, 2032 Valley Life Sciences Building, CCN: 57865**

This seminar will offer you an opportunity to learn some brain science and its history. You will also read works of modern fiction that involve interpretations of the nature of mind as it relates to brain, and meet to discuss your findings and views. Fiction writers often tell us more about who we are than philosophers and psychiatrists do. Some of the writers are scientists or clinicians who use fiction to by-pass the constraints of scientific journals. Others are people like yourselves, who read what scientists have written and then extrapolate from their own experience. We invite you to envision your own future. Keep a record and you'll be able to compare your thoughts now with your thinking when you graduate.

Walter J Freeman studied physics and mathematics at M.I.T., English and philosophy at the University of Chicago, medicine at Yale University, internal medicine at Johns Hopkins, and neurophysiology at UCLA. He has taught brain science in the University of California at Berkeley since 1959, where he is Professor of the Graduate School.

**Natural Resources 24, Section 1**  
**Dean's Night Out - Discussions with the Dean and Other Members of the CNR Faculty, Staff and Alumni Communities (1 unit, P/NP)**  
**Professor J. Keith Gilles**  
**Thursday 4:30-6:30, 133 Giannini Hall, CCN: 61303**

**This seminar will meet six dates: January 17, January 31, February 14, February 28, March 13 and March 20, 2008.**

The Dean and other presenters will speak informally on current topics in environmental science and policy. Following guest speaker presentations, participants are encouraged to interact with the guests to discuss their work and the career path that led them to it. Dinner is included. **Attendance at all six sessions is mandatory. This is a Green Theme seminar.**

J. Keith Gilles is a Professor in the Department of Environmental Science, Policy & Management and interim Dean of the College of Natural Resources. His research uses economic analysis and operations research modeling techniques to address forest resource management issues such as forest products market forecasting, analysis of resource-dependent local economies, the role of forestry in international development, forest harvest scheduling, protected area management, non-market valuation, the impact of climate change on fire control, structure survival in large urban-wildland fires, and wildland fire protection planning.

**Natural Resources 24, Section 2**  
**Global Environment Theme House Freshman Seminar (1 unit, P/NP)**  
**Professors Peter Berck and James Bartolome**  
**Thursday 5:00-6:00, Classroom A in Foothill I, CCN: 61306**

**After the formal sessions, the professor and students may continue their discussion informally over dinner in the Dining Commons. Food for Thought dining**

**arrangements and field trip arrangements will be discussed in class.**

The goal of this Freshman Seminar is to bring students and faculty together to explore issues such as global environmental change, policy and management of natural resources, sustainable rural and urban environments, and environmental leadership. The seminar will provide students and faculty a forum to exchange ideas, challenge one another's thinking, and share experiences in a small group setting. Students will have the opportunity to do research and teach their peers about regional to global environmental issues in preparation for Theme Program field trips and guest speakers. **Course enrollment is restricted to Global Environmental Theme House participants. Obtain CEC from the instructor. This seminar is part of the Food for Thought Seminar Series and is a Green Theme seminar.**

Peter Berck is a Professor of Agricultural and Resource Economics and Policy. He was an undergraduate at Cal, received a Ph.D. in Economics from MIT in 1976, and has been teaching at Cal ever since. His research has been on the economics of forestry, fisheries and water, on food security in developing nations, and on the costs of environmental regulation.

James Bartolome is a Professor in the Ecosystem Science Division of the Department of Environmental Science, Policy and Management. He received a B.A. in Biology from UC Santa Barbara and a Ph.D. in Wildland Resource Science from UC Berkeley. His research interests are conservation, use and restoration of rangeland ecosystems.

#### **Near Eastern Studies 24, Section 1**

**Ancient Egypt at Berkeley: Egyptian Archaeology in the Hearst Museum (1 unit, LG)  
Professor Carol Redmount**

**Tuesday 1:00-2:00, 252 Barrows Hall (first class meeting) and Exhibit Gallery in Hearst Museum, CCN: 61415**

**The first seminar meeting will be held in 252 Barrows Hall. Future seminar meeting locations will be announced in class.**

The Hearst Museum has one of the most important collections of ancient Egyptian artifacts in the United States and the best west of Chicago. Most of the almost 19,000 ancient Egyptian objects in the museum came from excavations undertaken in the early 1900s by George Reisner, with funding provided by Phoebe Apperson Hearst. Only a very tiny fraction of this collection is ever displayed in the museum, due to space constraints. In this seminar, we will examine the background and history of the collection, its housing and treatment in the museum, and various objects from the collection. Students will learn to use various resources of the museum and have the opportunity to work with ancient objects. **First year students with no background in the field are encourage to enroll.**

Carol Redmount is an Associate Professor in the Near Eastern Studies Department. She specializes in the archaeology of Egypt and the southern Levant, and directs the new UC Berkeley excavations at El-Hibeh, a three-thousand-year-old provincial town and cemetery site in Middle Egypt. She began her archaeological fieldwork the summer of her freshman year in college and hasn't stopped excavating since. She first worked in Egypt in 1978 and lived in Cairo for three years in the mid-1980s. She also has taken part in archaeological research in Cyprus, Israel, Jordan, Tunisia, and the United States.

#### **Near Eastern Studies 24, Section 2**

**Islam and Imaginative Literature: The Making of a Problematic Relation (1 unit, LG)  
Professor Muhammad Siddiq**

**Tuesday 3:30-4:30, 252 Barrows Hall, CCN: 61417**

This course explores the status of imaginative literature in Islamic contexts. Beginning with the attitude of the Qur'an towards poetry and poets (which we will compare to the views of Plato and Aristotle on the subject), the course will examine the perimeters of literary expression and the theological constraints placed on it in various phases of Islamic history up to the present. Students are expected to write several short, informal, but analytical essays. In addition, regular attendance and participation in class discussion will figure in determining the overall grade in the course.

Professor Muhammad Siddiq is trained in Comparative Literature with special expertise in Arabic, Hebrew, and English. He is currently working on a project that examines the poetics of Palestine in the works of the major Palestinian poet Mahmoud Darwish.

**Nuclear Engineering 24, Section I  
Society, Environment, and Nuclear Power (1 unit, LG)  
Professor Joonhong Ahn  
Monday 3:00-4:00, 51 Evans Hall, CCN: 64003**

Lectures and discussions will be made on societal aspects of nuclear power utilization, for such topics as environmental impacts and safety of geologic disposal for radioactive wastes, development of societal agreement, and political, institutional, and historical insights on nuclear power utilization. Keynote lectures by the instructor and invited speakers from outside will be given. Students will select a topic of interest, and contribute to class discussions. **This is a Green Theme seminar.**

Joonhong Ahn is Professor of Nuclear Engineering at UC Berkeley, where he has taught since 1995. He holds a Ph.D. from UC Berkeley and a D.Eng from the University of Tokyo, where he has recently been named Fellow of the School of Engineering. He teaches undergraduate and graduate courses in radioactive waste management, covering broad aspects of radioactive waste management as well as safety assessment aspects of deep geologic repositories.

**Nutritional Sciences and Toxicology 24, Section I  
Papers with the Prof (1 unit, P/NP)  
Professor George Chang  
Tuesday 11:00-12:00, Unit 2 Towle Residence Hall L3 Seminar Room, CCN: 64605**

**Food for Thought dining arrangements will be discussed in class.**

Do you like reading newspapers while eating? Sharing news stories with friends? Figuring out where the reporters didn't get the whole story? In "Papers with the Prof," students will browse through newspapers online or in the Crossroads Dining Commons. They'll choose interesting articles, do research on the story behind the story, and discuss their findings in seminar. After seminar, students will dine with the professor in Crossroads. Occasionally there will be tours of local newspapers and conversations with reporters. **This seminar is part of the Food for Thought Seminar Series.**

Professor Chang received an A.B. in chemistry from Princeton and a Ph.D. in biochemistry from Cal. He has been heavily involved in undergraduate affairs, serving on the Undergraduate Affairs Committee, the Committee on Courses, and the Committee for Undergraduate Scholarships and Honors of the Academic Senate. He has also served on ad hoc committees dealing with disabled students and the need to develop a sense of community on each of the UC campuses. His most exciting assignment in the 20th Century was to serve on The Chancellor's Commission to Study the University's Responses to a Diversified Student Body. In 2005 Professor Chang became the inaugural professor in Cal's new Residential Faculty Program.

**Physics 24, Section 1**  
**Space-Time, Relativity, and the Universe (1 unit, P/NP)**  
**Professor Christopher McKee**  
**Wednesday 10:00-11:00, 395 LeConte Hall, CCN: 69477**

Einstein's special and general theories of relativity revolutionized our concepts of space and time, and these theories underlie modern cosmology. In the seminar, we shall discuss how relativity theory alters some of our intuitive ideas about space and time, and then discuss current ideas on the evolution of the universe. Much of the material in the course will be presented by students, followed by class discussion. **Students are expected to have had high school physics and algebra and to be willing to tackle difficult subjects, but non-science majors are welcome.**

Christopher McKee is a Professor in both Physics and Astronomy. His research focuses on the theory of how stars form, both now and in the distant past. Much of his research involves large-scale supercomputer simulations. For more information regarding Professor McKee, visit his faculty web page at <http://astro.berkeley.edu/~cmckee/>.

**Physics 24, Section 2**  
**From Mythbusters to Science Fiction: How Do We Know Things? (1 unit, P/NP)**  
**Professor Robert Jacobsen**  
**Wednesday 11:00-12:00, 395 LeConte Hall, CCN: 69479**

**Food for Thought dining arrangements will be discussed in class.**

Physics advances when we figure out that something we think we know doesn't work like that, or we finally start to understand something that we didn't yet know. Both parts are important. In this seminar we'll use a number of different examples, ranging from episodes of the MythBusters TV show to famous works of science fiction to explore how that works. Why do we think the things we do as individuals? As a scientific community? Why are we so willing to extrapolate from them, and when does that tend to work (or not)? Some reading is required. **No specific background is needed, just a sense of curiosity and a willingness to question what you think you know. This seminar is part of the Food for Thought Seminar Series.**

Bob Jacobsen is an experimental high-energy physicist and ex-computer engineer. His previous project involved hundreds of physicists and thousands of Linux computers at sites around the world; his next one definitely won't.

**Plant and Microbial Biology 24, Section 1**  
**Extreme Green: How Plants Adapt to Life on the Edge (1 unit, P/NP)**  
**Professor Chelsea Specht**  
**Monday 4:00-5:00, 106 Mulford Hall, CCN: 70412**

This seminar will explore the ability of plants to adapt to a variety of environments and habitats, from desert succulents to tropical epiphytes to nitrogen-deprived carnivores to parasitic saprophytes. We will study the ecological as well as the biochemical and genetic aspects of plant adaptation in an attempt to understand the processes that drive plant diversification. Upon students' interest, the class will also explore plant domestication and the effects of breeding on increasing (or perhaps decreasing) tolerance to extreme environments. A bspace website will be made available for the course. **Students should have an inherent interest in plant diversity, natural history, adaptation and in investigating the evolutionary processes that lead to biological diversification. This is a Green Theme seminar.**

Chelsea Specht received her PhD from New York University as part of a joint program with the New York Botanical Garden and the American Museum of Natural History. The focus of her dissertation research was on tropical ginger (Zingiberales), dynamic plants with amazing floral adaptations that increase their attractiveness to pollinators, especially birds and bees. She then continued her research as a Postdoctoral Fellow at the Smithsonian Institution in Washington DC and as a research associate at the University of Vermont before coming to Berkeley in 2005. Her research focuses on plant evolution, conservation and the causes of plant diversity. For more information, please visit Professor Specht's lab website at <http://pmb.berkeley.edu/~specht>.

**Portuguese 24, Section I**  
**Travel Narratives from the Atlantic (1 unit, P/NP)**  
**Professor Ana Maria Martinho**  
**Tuesday 11:00-12:00, 111 Kroeber Hall, CCN: 86605**

**Food for Thought dining arrangements will be discussed in class.**

This course will present and discuss narratives concerning the history of Atlantic cultures and of mobility within its boundaries. Having fostered all sorts of multicultural experiences between Europe, America and Africa, the Atlantic witnessed the constant dislocation of experiences ranging from different forms of trading to scientific discoveries or political challenges. Sailors, adventurers, writers, scientists, politicians and journalists have crossed it for centuries in search of new experiences and thus contributed to a constant reification of History. Within this context we find all sorts of testimonies that address emerging or fallen empires, as well as today's nations and their peoples. Oral documents, a variety of written texts, videos, music and ethnographic works will be at the center of our discussions during this seminar.

**Readings and discussions will be in English. This seminar is part of the Food for Thought Seminar Series.**

Ana Maria Martinho is an Assistant Professor in the Department of Spanish and Portuguese. Her main interests are Portuguese and Luso-African Cultures and Literatures; Atlantic Cultures; African Diaspora and Emigration. Professor Martinho travels frequently to Africa and has worked with universities across the world.

**Psychology 24, Section I**  
**The Relationship between Body and Behavior (1 unit, P/NP)**  
**Professor Karen K. De Valois**  
**Wednesday 11:00-12:00, 3105 Tolman Hall, CCN: 74075**

**Food for Thought dining arrangements will be discussed in class.**

In this seminar, some of the great themes underlying the study of the relationship between the body and behavior, both now and in the past, will be explored. The specific ideas chosen for study will depend in part upon student interest. Examples of such fundamental ideas include the following: behavioral mechanisms and responses are similar across species; the world we perceive (at even the most elementary levels of seeing and hearing) is not the world as it exists externally; who I am (psychologically) is fundamentally determined by my genes; the state and health of the body can be profoundly affected by "psychological" factors; many of the profound "mental" illnesses are really physiological in origin. These ideas will be examined through both popular and scientific writings. Groups of students will be expected to study and help lead the discussions on each topic. Grades will be based upon class participation and presentations. No examinations will be given. **This seminar is part of the Food for Thought Seminar Series.**

Professor De Valois received her Ph.D. from Indiana University. She has a joint appointment at UC Berkeley in Psychology and Vision Science. Her research has focused on vision, psycho-physics and physiology.

**Psychology 24, Section 2**  
**Human Neuropsychology (1 unit, P/NP)**  
**Professor Robert Knight**  
**Monday 4:00-5:00, 3138 Tolman Hall, CCN: 74077**

This seminar will discuss the major behavioral syndromes observed in neurological patients. Neuropsychological syndromes including deficits in attention, language, memory, executive control, visual perception, and motor control will be reviewed. Neurobiological techniques used to study these disorders will also be considered. Students will be asked to deliver an oral presentation on the topic of their choice. Final grade will be determined by the presentation and a review paper on a topic relevant to human neuropsychology. **Enrollment is limited to twelve students.**

Robert Knight is a Professor in the Department of Psychology. His research focuses on human neuropsychology with a particular emphasis on disorders of the prefrontal cortex. He received his Ph.D. in 1974 and practiced as a neurologist in the UC Davis School of Medicine from 1980-1998. He maintains a research lab applying neurobiological techniques to study cognitive disorders in neurological patients.

**Rhetoric 24, Section 1**  
**Arguing with Judge Judy: Popular "Logic" on TV Judge Shows (1 unit, LG)**  
**Professor Daniel F. Melia**  
**Wednesday 2:00-3:00, 108 Wheeler Hall, CCN: 77860**

TV "Judge" shows have become extremely popular in the last 3-5 years. A fascinating aspect of these shows from a rhetorical point of view is the number of arguments made by the litigants that are utterly illogical, or perversions of standard logic, and yet are used over and over again. For example, when asked "Did you hit the plaintiff?" respondents often say, "If I woulda hit him, he'd be dead!" This reply avoids answering "yes" or "no" by presenting a perverted form of the logical strategy called "a fortiori" argument ["from the stronger"] in Latin. The seminar will be concerned with identifying such apparently popular logical fallacies on "Judge Judy" and "The People's Court" and discussing why such strategies are so widespread. It is NOT a course about law or "legal reasoning." **Students who are interested in logic, argument, TV, and American popular culture will probably be interested in this course. I emphasize that it is NOT about the application of law or the operations of the court system in general.**

Professor Melia belongs to the Rhetoric department and the Program in Celtic Studies. His scholarly interests include Classical rhetorical theory, oral discourse, and medieval Celtic literature and languages. His recent publications concern Aristotle and orality and the forms of early Irish poetry. He is a former Jeopardy! champion.

**Rhetoric 24, Section 2**  
**The Rhetoric of Almost Everything (1 unit, P/NP)**  
**Professor Thomas O. Sloane**  
**Tuesday 9:00-11:00, 7415 Dwinelle Hall, CCN: 77862**

**This seminar will meet the first eight weeks of the semester: January 22, January 29, February 5, February 12, February 19, February 26, March 4 and March 11, 2008.**

This seminar is an introduction to the elements of rhetorical analysis: how to analyze anything from politics to poetry and beyond. Most reading materials will be available online. Credit will depend upon regular class participation, short oral reports, and a final two-paragraph written summary. **This course was designed for students with varied interests—politics, English literature, history, music, architecture, ad inf. (almost).**

Emeritus Professor Thomas O. Sloane has been at Berkeley since 1968. He has published extensively on rhetoric and humanism, and served as the editor-in-chief of the recent *Encyclopedia of Rhetoric* for Oxford University Press.

### **Sociology 24, Section I**

#### **Sociology of Discrimination (I unit, P/NP)**

**Professor Samuel Lucas**

**Wednesday 5:00-6:00, Room L20 in Unit I located at 2650 Durant Avenue, CCN: 81696**

**Food for Thought dining arrangements will be discussed in class.**

This seminar will examine the literature on discrimination. We will interrogate definitions of discrimination, considering a variety of bases of discrimination (e.g., race, ethnicity, sex, age, sexual preference, and more). We will be concerned with whether discrimination exists, any effects of discrimination that may follow from its operation, as well as possible public policy responses that might be considered. Discrimination is a controversial topic. In the wider public people have come to blows when arguing about discrimination. We don't want to do that. However, among scholars, there is also a great deal of debate as to whether discrimination currently occurs and, if it does, whether it really has any effects. The reason for scholars' debate is that it is very difficult to find effects of discrimination once one takes seriously the complexity of the social world. Our task during the seminar will be to listen in on the debate by reading, and take part in that challenging yet rewarding effort in our discussions. **The ideal students for this seminar will be interested in discovering the complexity of this issue and thereby deepening their understanding of the world in which they live and the people with whom they share that world. Participants may enter the seminar either believing, doubting, or unsure about the existence and/or effects of discrimination of various kinds. Either way, however, seminar participants must be willing to try to attend to the evidence in the reading and respectfully engage the literature and the other seminar participants. Discrimination can be difficult to discuss. The seminar is designed to provide a supportive, intellectually exciting environment for the participants to pursue a wide-ranging exploration, together. This seminar is part of the Food for Thought Seminar Series.**

Samuel R. Lucas obtained his bachelor's degree from Haverford College in 1986, was awarded a National Science Foundation Minority Graduate Fellowship in 1988, and completed his doctoral degree in Sociology from the University of Wisconsin-Madison as a Ford Foundation Minority Doctoral Dissertation Fellow in 1994. He has been awarded the Gustavus Myers Center Award for the Study of Human Rights in North America (for the book *Inequality by Design*), the Willard Waller Award for the most outstanding book in the sociology of education for 1997, 1998, and 1999 (for the book *Tracking Inequality*), and he was elected to the Sociological Research Association, an honorary society, in 2002. His research and teaching interests are social stratification, sociology of education, research methods, and research statistics. He is also a runner, and is learning piano.

### **Spanish 24, Section I**

#### **Talking Funny: Language Variation in Spanish and English Literary Texts (I unit, LG)**

**Professor Milton Azevedo**

**Tuesday 11:00-12:00, 233 Dwinelle Hall, CCN: 86178**

This seminar analyzes language through the literary representation of regional and social varieties of Spanish and English (as in Mark Twain's *Adventures of Huckleberry Finn* or Guillermo Cabrera Infante's *Tres Tristes Tigres*) and discusses social and cultural implications of language variation. It is taught in English with readings in both English and Spanish. Grades will be based on required participation in class discussions and a final oral presentation on an individual project. The reader will be available at the Copy

Central on 2560 Bancroft Avenue. **The ability to read and understand spoken Spanish is essential to follow this course successfully. Please note: this is not a conversation course. Students interested in taking a course focusing on conversation or otherwise improving their ability to speak Spanish should see the Undergraduate Assistant in the Department of Spanish and Portuguese.**

Professor Milton Azevedo specializes in Hispanic Linguistics and his research focuses on applications of linguistics to literature. He has taught Freshman Seminars since spring 1999.

### **Spanish 24, Section 2**

**Barcelona: A Cultural History of a City (1 unit, P/NP)**

**Professor Jesús Rodríguez-Velasco**

**Wednesday 12:00-1:00, 180 Barrows Hall, CCN: 86180**

**Food for Thought dining arrangements will be discussed in class.**

This seminar will be a historical, literary, musical, and otherwise artistic stroll throughout the city of Barcelona. Barcelona is, at the same time, the second (or even first) city in Spain, but it is also the capital of Catalonia, an autonomous community with its own language (Catalan) and with a national identity, created throughout history. We will explore the cultural, artistic, and, ultimately, political construction of the city of Barcelona, mostly from the mid-nineteenth century onwards (but paying attention to the early history of the city), and how it has become the central link and symbol of modernity. In order to do that, we will mainly read and comment on two books, Robert Hughes' *Barcelona*, and Eduardo Menzosa's *La ciudad de los prodigios*. **This will be a bilingual English-Spanish class, and the professor will also provide the students with a basic knowledge of Catalan language. Students must have an intermediate-advanced knowledge of Spanish. This seminar is part of the Food for Thought Seminar Series.**

Jesús R. Velasco ([www.jrvelasco.com](http://www.jrvelasco.com)) is Associate Professor at the Department of Spanish & Portuguese, and Chair of the Catalan & Occitan Studies Program (Institute of European Studies). He is the author of more than ten books and a long series of articles, mainly devoted to Medieval History and Culture, but also dealing with other artistic subjects, including photography, music, architecture, and theater.

### **Vision Science 24, Section I**

**The Human Eye (1 unit, P/NP)**

**Professor Richard C. Van Sluyters**

**Friday 2:00-4:00, 394 Minor Hall, CCN: 66403**

**This seminar will meet approximately every other week throughout the semester, beginning the first week of the semester.**

This seminar will include a series of instructor-led discussions on the structure and function of the human eye and its appendages. The use of standard clinical instruments to view the exterior and interior of the eye will be demonstrated. Students will then employ these instruments to observe one another's eyes. Digital images of the iris will be captured and provided to each student. Examples of the topics to be discussed include the following: Why is the cornea so clear and the sclera so white? Why is the iris so beautifully colored? What is the fluid in the eye, where does it come from, and where does it go? How do the skull and bony orbit protect the eye without hindering its performance? How do the appendages of the eye—the eyelids and eyebrows—work, and what are their functions? How does the eye adjust its focus from far to near, and why do we lose this ability with age? How do contact lenses work, and what happens to the cornea when laser refractive surgery is performed? **Enrollment is limited to ten students.**

Professor Richard C. Van Sluyters joined the faculty of the School of Optometry in 1975, and currently serves as the School's Associate Dean for Student Affairs. He received his undergraduate training at Michigan State University, studied optometry at the Illinois College of Optometry and was a graduate student at Indiana University. He holds doctorates in optometry and vision science and was a postdoctoral fellow at Cambridge University in England. He teaches courses on the anatomy and physiology of the eye and visual system.

**Vision Science 24, Section 2**

**Myths, Mysteries and Discoveries in Medicine (1 unit, P/NP)**

**Professor Patsy Harvey**

**Thursday 2:00-3:30, 394 Minor Hall, CCN: 66405**

**This seminar will meet the first ten weeks of the semester.**

Throughout the centuries, people sought to understand the reasons for diseases and death. Intriguing explanations, myths and superstitions were developed in an attempt to describe and prevent their medical maladies. In this course, we will discuss early and current explanations of health problems, with special considerations given to various cultures in the US and around the world. We will also discuss recent changes in health care and imagine future roles and discoveries of medicine. **Students enrolled in this seminar should be curious about people's beliefs and misconceptions about health and diseases, including our own myths about vision.**

Dr. Patsy Harvey received her Doctor of Optometry and Masters in Public Health from UC Berkeley. She currently teaches at the UC Berkeley School of Optometry, including courses on Systemic Diseases, Geriatrics, and the History of Medicine and Optometry. During her international travels and clinical work, she developed a fascination with health beliefs in other countries and times, and enjoys discussing their beliefs and myths with others.

## **SOPHOMORE SEMINARS**

The following courses are limited to 15 students. Each is offered for one or two units of credit. Second-year students will be given priority for enrollment. Courses designated P/NP may be taken pass/no pass only; courses designated LG may be taken for a letter grade or on a pass/no pass basis. If a course is designated as requiring the consent of the instructor, or if you would like additional course information, contact the undergraduate assistant in the department offering the seminar.

**English 84, Section I**  
**High Culture, Low Culture (2 units, P/NP)**  
**Professor Julia Bader**  
**Thursday 2:00-5:00, 300 Wheeler Hall, CCN: 28177**

We will examine the films and writings of Woody Allen in terms of themes, narration, comic and visual inventiveness and ideology. The course will also include a consideration of cultural contexts and events at Cal Performances and the Pacific Film Archive. This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Professor Julia Bader teaches in the English Department and specializes in the modern period, both British and American, with an emphasis on fiction, film, and feminism.

**Environmental Sciences 84, Section I**  
**Discussions and Investigations of Campus Issues in Sustainability (1 unit, LG)**  
**Professor William Berry**  
**Wednesday 4:00-5:00, 14 Haviland Hall, CCN: 30427**

There are a number of on-going campus programs on sustainability that include the climate change initiative, the planning of green buildings, issues in waste disposal, and the green room and suite. We will become familiar with these projects and take part in one or two of them. Students working on local environmental issues and those considering joining a student environmental issue group are encouraged to join the discussion to share their experiences. **Students may be able to earn 2 units. Talk to Professor Berry for details. This is a Green Theme seminar.**

Professor Berry teaches a number of courses in basic environmental science and has both research and teaching programs in impacts of climate change on environmental changes and on biodiversity. He directs an internship program in which students assist Bay Area environmental science teachers.

**Integrative Biology 84, Section I**  
**Discovering Mammal Societies (1 unit, P/NP)**  
**Professor Eileen Lacey**  
**Monday 1:30-3:00, 4110 Valley Life Sciences Building, CCN: 43038**

Most mammalian societies are constructed from the same fundamental building blocks: group living, kinship, and cooperative rearing of young. Within this shared framework, however, considerable variation occurs, resulting in such diverse social structures as those observed in lions, meerkats and humans. Understanding how and why this diversity arises is a fundamental goal of modern behavioral research. Each week, this seminar will explore in detail the social structure of a different mammal species. Working from one or two assigned readings per week, student-led discussions will consider the shared and unique features of the societies examined. By the end of the semester, participants will have acquired (1) a detailed familiarity with the societies of fourteen prominent mammal species and (2) a thorough understanding of the basic principles thought to determine mammalian social structure. The seminar will enable students to critically evaluate social structure in non-mammalian species and will prepare them to enroll in upper-division courses in behavioral biology taught at Berkeley. **Enrollment is limited to**

**fourteen sophomores. Students enrolling in this seminar should be interested in behavior and considering majors in departments with strong programs in behavior (e.g., Integrative Biology, Psychology, ESPM).**

Eileen Lacey is a behavioral ecologist who studies the ecological and evolutionary bases for sociality in vertebrates, with an emphasis on mammals. Currently, Dr. Lacey's work focuses on the reasons for group living and cooperation in several species of South American rodents. Her analyses combine field studies of the behavior and ecology of these animals with molecular genetic analyses of patterns of parentage and kinship within social groups. At Berkeley, Dr. Lacey teaches courses in animal behavior, behavioral ecology, and mammalogy.

**Mass Communications 84, Section I**

**From Real to Reel: The History and Development of Documentary Film (2 units, LG)**

**Mr. Gary Handman**

**Tuesday 10:00-12:00 and Thursday 10:00-11:00 , Group Room B in the Media Resources Center located at 150 Moffitt Library, CCN: 53217**

**This seminar will meet on Tuesdays from 10:00-12:00 to screen films and on Thursdays from 10:00-11:00 for discussion.**

This seminar will investigate the modes, styles, and uses of documentary film that have developed over the past 120 years, from the earliest cinematic efforts to record "actuality" to present day deconstructions, appropriations, and parodies of traditional documentary forms and conventions. The focus of the course will largely be on American and European documentary traditions. Through screenings of representative works, and class discussions and online discussions, we will investigate how and why various historical periods have given rise to particular documentary forms and documentary agendas. We will consider the persistence and/or changing nature of documentary film conventions and strategies. The seminar will consider how the "voice" of the filmmaker is represented in his/her films. We will also explore the various ways in which documentary filmmakers use evidence and argument to tell a story, to persuade or incite audiences, or to put forward a particular view of the world. Throughout the seminar, we will consider a number of significant issues and controversies surrounding the production and consumption of documentary films, including the relationships and differences between fiction and non-fiction film; problems related to claims of representing "truth" and "reality"; the issue of documentary objectivity; the ethics of representing others; and the relationships between filmmaker, film subject, and film audience. **Students willing to view films critically and to actively and creatively engage in discourse about them are encouraged to take this seminar. This seminar does not fulfill the Film Studies documentary requirement.** This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Gary P. Handman received his Master of Library and Information Studies in 1976 from the University of California, Berkeley. Since 1984, he has served as Director of the Media Resources Center, Moffitt Library, University of California, Berkeley, one of the largest curated video collections in a US academic library. He has taught courses in media librarianship and film studies, and is a periodic lecturer in Film Studies and Mass Communications on the Berkeley campus. Mr. Handman has written extensively in the field of video librarianship, including a regular video column in *American Libraries*. He is a member of the board of advisors of the New York Film and Video Festival and of MediaRights.org; he is a founding member of the American Library Association Video Round Table, and was the first elected chair of the group.

**Molecular and Cell Biology 84A, Section I**

**Making a Living with a Degree in Biology (1 unit, P/NP)**

**Professor Caroline Kane**

**Tuesday 10:00-11:00, 201 Giannini Hall, CCN: 57841**

Often students with a biology interest do not know about the range of different, wonderful occupations that are available to them with a degree in a biological science. We will talk about many of these occupations through panels of professionals, meeting with people using their biology degrees in different ways, and by hearing how older Berkeley students are setting themselves up for careers that allow them to use their interest in biology.

Caroline M. Kane is a Professor in Residence in the Department of Molecular and Cell Biology at UC Berkeley, where she earned her Ph.D. in Biochemistry. Born and raised in Ohio, Dr. Kane has combined social activism and biological science all throughout her career. Her graduate students, undergraduate researchers, and postdoctoral fellows study with her to uncover the intricacies of how genes are selected to reveal their information in a regulated way. Proper selection and decoding of genes is essential for normal development and good health. Her work has been funded by the National Institutes of Health, the National Science Foundation, the American Cancer Society, and the University of California Cancer Research Coordinating Committee. In addition, Dr. Kane has a passion for teaching, in and out of the laboratory, and for improving education at the college and pre-college level. She has won numerous awards for her teaching and mentoring including the 2002 College of Letters and Science Award for Distinguished Research Mentoring of Undergraduates, the Faculty Appreciation Award from the undergraduate societies of Molecular and Cell Biology in May 1998 and May 2001, the Phi Beta Kappa Northern California Association Teaching Award in 2003, and the Judith Pool Award from the Northern California Chapter of American Women In Science, and she was elected to the Gahanna Lincoln High School Alumni Hall of Fame in 2003. In spring 2007 she was given the California Alumni Association Excellence in Service Award. Further, she has a strong interest in increasing diversity among professionals in biological sciences-related careers, and for this work she has won the Leon A. Henkin Citation for Distinguished Service from the Academic Senate, and along with her campus colleagues in the Coalition for Excellence and Diversity in Math, Science and Engineering (that she Chairs), and the Presidential Award for Excellence in Science, Math and Engineering Mentoring from the White House. She also works at the local, national and international level to create positive change in education and increase representation in biology careers.

### **Natural Resources 84, Section I**

#### **Global Environment Theme House Sophomore Seminar (1 unit, P/NP)**

**Professors James Bartolome and Peter Berck**

**Thursday 5:00-6:00, Classroom A in Foothill I, CCN: 61309**

**After the formal sessions, the professor and students may continue their discussion informally over dinner in the Dining Commons. Food for Thought dining arrangements and field trip arrangements will be discussed in class.**

The goal of this Sophomore Seminar is to bring students and faculty together to explore issues such as global environmental change, policy and management of natural resources, sustainable rural and urban environments, and environmental leadership. The seminar will provide students and faculty a forum to exchange ideas, challenge one another's thinking, and share experiences in a small group setting. Students will have the opportunity to do research and teach their peers about regional to global environmental issues in preparation for Theme Program field trips and guest speakers. **Course enrollment is restricted to Global Environmental Theme House participants. Obtain CEC from the instructor. This seminar is part of the Food for Thought Seminar Series and is a Green Theme seminar.**

James Bartolome is a Professor in the Ecosystem Science Division of the Department of Environmental Science, Policy and Management. He received a B.A. in Biology from UC Santa Barbara and a Ph.D. in Wildland Resource Science from UC Berkeley. His research interests are conservation, use and restoration of rangeland ecosystems.

Peter Berck is a Professor of Agricultural and Resource Economics and Policy. He was an undergraduate at Cal, received a Ph.D. in Economics from MIT in 1976, and has been teaching at Cal ever since. His

research has been on the economics of forestry, fisheries and water, on food security in developing nations, and on the costs of environmental regulation.

**Optometry 84, Section I**  
**Stewardship of the Earth and its People —The Sixty-Year Prospect (I unit, P/NP)**  
**Professor Stanley Klein**  
**Monday 2:00 - 3:00, 394 Minor Hall, CCN: 65505**

This seminar examines current problems facing our planet and its inhabitants and seeks to learn how society can find solutions. The number sixty in the title of the seminar was chosen because the students taking the course will, on average, live an additional sixty years that could be devoted to stewardship of the Earth.

In the first several weeks seminar members will prioritize ecological and other well-being problems that are likely to face the Earth and its peoples during the next sixty years. The remainder of the seminar will be devoted to examining what resources are available on the Berkeley campus and surrounding region that are relevant to these problems. We will discuss how Berkeley area resources could be brought together for solving some of these important problems. Both practical considerations and utopian long-range visions will be included. There will be readings from Berkeley area authors. The seminar grade will be based on class participation.

Professor Stanley Klein received his Ph.D. and Masters in Physics from Brandeis University. He currently teaches at the UC Berkeley School of Optometry. His fields of expertise includes modeling of spatial vision and its application in image compression, non-linear systems analysis, and corneal topography and contact lens design. For further information, please visit his website at: [cornea.berkeley.edu](http://cornea.berkeley.edu).

**Peace and Conflict Studies 84, Section I**  
**Religion, Peace, and Conflict (2 units, P/NP)**  
**Lecturer Americ Azevedo**  
**Tuesday 4:00-6:00, 234 Dwinelle Hall, CCN: 66703**

Religions, while teaching peace, love, and the "golden rule," are often used to fan the fires of conflict and war. We will explore this great paradox of religion and war, using core doctrines from Christian, Muslim, Jewish, Hindu, Buddhist, and Taoist sources, as well as contemporary essays on religion and conflict. Students will engage in an on-going Socratic dialogue, exploring questions such as "Why can't we be good?", "What are the roots of the golden rule?", "Is a terrible love of war part of human nature?", and "Can church and state be permanently separate?" The course agenda will be modified as the collaborative group process deepens our inquiry. This seminar was formerly titled "Peace on Earth, Golden Rules, and the World's Religions".

Americ Azevedo has pursued a life-long study of world religions and spirituality, along with a continued commitment to Socratic dialogue. Though his background is in Philosophy, his business and teaching career have brought him extensively into the world of information technology, with an emphasis on collaborative technologies, e-learning, and their cultural implications. He is especially concerned with how we can maintain our humanity in an increasingly technological world. He has been at UC Berkeley since Fall 2000 and teaches courses in the College of Engineering and the Department of Peace and Conflict Studies. For more information regarding Americ Azevedo and his courses, talks, workshops, publications, media coverage, fellowships and awards, visit his website at <http://socrates.berkeley.edu/~americ/>.

**Plant and Microbial Biology 84, Section I**  
**Introductory Plant Genetic Engineering (I unit, P/NP)**  
**Professor David Ow**  
**Wednesday 4:00-5:30pm, 224 Wheeler Hall, CCN: 70426**

**The class meets on January 23, 30; February 6, 13, 27; March 5, 12, 19; and April 2 and 9**

This seminar offers undergraduates from any major the opportunity to become familiar with the principles, techniques and applications of plant genetic engineering. Students should have a basic understanding of plant biology and genetics as covered in high-school biology. The class meets ten times, each one-hour lecture followed by a half hour discussion. Reading materials will be provided in the form of pdf files, ~22 single-spaced typed pages (excluding figures and tables) of reading per week.

**This seminar is especially appropriate for students with an interest in a career in biological sciences, biotechnology, environmental sciences, business or law who wish to gain familiarity with the principles, techniques, applications, and controversies of plant genetic engineering.**

Dr. Ow received his A.B. from UC Berkeley, Ph.D. from Harvard, and is a Senior Scientist at the Plant Gene Expression Center at the USDA Albany Center. He is recognized for his research on biosafety aspects of plant genetic modifications and has served on WHO/FAO GMO panels. A photo of the glowing tobacco plant that he and his colleagues engineered two decades ago appears in many textbooks.

**Plant and Microbial Biology 84, Section 2  
Genome Dark Matter (1 unit, P/NP)  
Professor Barbara Baker  
Tuesday 4:00 - 5:00pm, 332 Giannini, CCN: 71174**

Recent whole genome sequencing and analysis (genomics) is allowing scientists to see the complete set of genes in a genome and analyze their evolutionary origins and complex interactions at the systems level. Genomics has also revealed important information between the genes. Genomic dark matter, analogous to dark matter of the universe, has emerged as the major component of genomes. Genes exist as islands in a sea of repetitive, highly compacted non-genic DNA, termed heterochromatin, for which no function could previously be detected. However, analysis of whole-genome transcription has revealed that RNA originates from nearly all parts of the genome including the dark matter. New discoveries are showing that the vast spaces between genes can govern cellular responses to the environment and guide growth and development. **This seminar is ideal for students curious about cutting-edge research in an emerging area of biology that includes research on the roles of small RNA-mediated regulatory mechanisms in genome structure, function and evolution. Students should have an understanding of basic molecular biology concepts.**

Professor Baker received her undergraduate degree in Biology at the University of California, San Diego and her Ph.D. on Endogenous Avian Retroviruses with Drs. Mike Bishop and Harold Varmus in the Department of Microbiology and Immunology at the University of California, San Francisco. She was an EMBO Postdoctoral Fellow at the Max Planck Institute for Plant Research in Cologne, Germany, where she developed novel transposon-based genetic tools for gene identification and isolation under Drs. Jeff Schell and Nina Fedoroff.

Professor Baker is currently an Adjunct Professor at the University of California, Berkeley, Department of Plant and Microbial Biology, and a Senior Scientist at the Plant Gene Expression Center at the USDA ARS in Albany, CA where her research team isolated one of the first plant disease resistance genes, N, specifying virus resistance, using a transposon insertional mutagenesis strategy. Professor Baker's lab's research focuses on molecular mechanisms of host pathogen interactions including identification, isolation, and characterization of regulatory sequences and genes that orchestrate natural plant resistance to common diseases. They use Solanaceae as plant models for their research. Their goal is to understand the molecular-genetic basis of plant defense mechanisms to generate environmentally benign strategies for durable, broad-spectrum disease resistant crops.

**Public Health 84, Section I**

**Disaster of the Week: Environmental Disasters in Fiction (I unit, P/NP)**

**Professor Kirk Smith**

**Thursday 5:00-7:00, 230I Tolman Hall, CCN: 75509**

**This seminar will meet every other week for two hours beginning the first week of the semester.**

Environmental disasters, human-caused and otherwise, have been featured in many novels and other fictional media since the dawn of the industrial era. In this seminar, we will read 5-10 of these books and discuss their scientific validity, relevance to important environmental issues today, and impact on public and policy discourse. Among these books will be *Last Man* (Mary Shelley), *After London* (Richard Jefferies), *Earth Abides* (George Stewart), *Andromeda Strain* (Michael Crichton), *China Syndrome* (film). We will also read *The World Without Us* (2007, Alan Weisman). Each student will be expected to give an oral report on one book. **This is a Green Theme seminar.**

Kirk R. Smith is Professor of Environmental Health Sciences and holds the Maxwell Endowed Chair in Public Health at the University of California, Berkeley. He is also founder and coordinator of the campus-wide Masters Program in Health, Environment, and Development. Previously, he was founder and head of the Energy Program of the East-West Center in Honolulu, where he still holds appointment as Adjunct Senior Fellow in Environment and Health after moving to Berkeley in 1995. He is also a Visiting Senior Scientist at the Woods Hole Research Center. His research work focuses on environmental and health issues in developing countries, particularly those related to health-damaging and climate-changing air pollution, and includes ongoing field projects in India, China, Nepal, Mexico, and Guatemala. He serves on a number of national and international scientific advisory and editorial boards and has published over 200 scientific articles and 7 books. He holds bachelors, masters, and doctoral degrees from UC Berkeley and, in 1997, was elected member of the US National Academy of Sciences, one of the highest honors awarded to US scientists by their peers.

## FRESHMAN AND SOPHOMORE SEMINARS

Most of the following courses are limited to 20-25 students. First- and second-year students are given priority for enrollment. Most of these courses fulfill Letters and Science breadth requirements; consult *A Guide for Students in the College of Letters and Science: Earning Your Degree*. If a course is designated as requiring the consent of the instructor, or if you would like additional information, please contact the undergraduate assistant in the department offering the seminars.

**Astronomy 39, Section I**  
**Life in the Universe? (1.5 units, P/NP)**  
**Professor Marc Davis**  
**Tuesday 2:30-4:00, 544 Campbell Hall, CCN: 07072**

This freshman/sophomore seminar will discuss the question of life in the Universe from the astronomical and physical science perspective. What is it about the Earth that makes life possible? How does the evolutionary history of life parallel the evolution of the Earth itself? How many other planets in our galaxy would have a similar history? Is intelligent life in the Universe common, or do most planets fail to evolve life beyond the level of pond scum? Is intelligent life on Earth a short-term phenomenon, or will we survive into the distant future? Where are the aliens, and why haven't they landed on the White House lawn? We shall meet once a week, and the students will be expected to participate in the discussion. The primary reading for the course will be "Rare Earth" by Peter Ward and Donald Brownlee and "If the Universe is Teeming with life, Where is Everybody? 50 Solutions to Fermi's Paradox and the Problem of Extraterrestrial Life" by Stephen Webb. Grades for the course will be based on classroom participation and on a term paper. Suitable topics for this paper would be a report of material in greater depth than covered in class, or a critical report on some (hardcore) science fiction novel that explores alien life in detail. **The interested student will be an avid reader of science fiction.**

Professor Davis received his B.S. degree from MIT and his Ph.D. from Princeton. He has been a member of the Berkeley Astronomy and Physics faculty for twenty-six years. His primary areas of research are cosmology and large-scale structure in the universe. This work involves large survey projects on telescopes of both small and large aperture, as well as computer simulations with very large supercomputers. Over the next several years his major research activity will be to lead a major new survey on the Keck telescope (the world's largest) that will study the clustering of galaxies in the distant universe. Professor Davis reads science fiction for relaxation and has seen his share of both the good and the bad.

**Comparative Literature 41A, Section I**  
**Forms of the Epic: The Arts of Epic (4 units, LG)**  
**Ms. Stephanie Tramel**  
**Tuesday and Thursday 9:30-11:00, 24 Wheeler Hall, CCN: 17281**

In "The Arts of Epic" we shall study the purposeful crafting and re-crafting of legends and stories into epic and epic's own derivatives and mockeries for the literary founding of cultural narratives, moral and ethical frameworks, and personal, artistic fame. We shall pay particular attention to techniques of allusion, paraphrase, representation, and re-contextualization within literary recollection and invention. Throughout the course we shall study examples of the visual and performing arts inspired by epic to consider the virtues and limitations of non-literary aesthetic forms in conveying epic's weighty themes. Course requirements include daily readings, participation in class discussion, three essays, a midterm, and a final examination. The course will also include a visit to the Bancroft Library to view papyri fragments of The Iliad and early printed versions of Virgil, Dante, and Ariosto. This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Stephanie Tramel is a graduate student instructor in the Department of Comparative Literature at UC Berkeley.

**Comparative Literature 41E, Section I**  
**Forms of the Cinema: Cinematic Cities (4 units, LG)**  
**Mr. Paul Haacke**  
**Tuesday and Thursday 11:00-12:30, 24 Wheeler Hall, CCN: 17287**

**Screenings will be on Tuesday evenings and will generally last about three hours.**  
**The film screening schedule will be available in class.**

What is the relationship between cinematic space and urban space, motion pictures and transportation, mise-en-scène and architecture? How have some of the most pressing problems of twentieth-century urbanization and globalization played out through the history of film production? This course will examine not only how films have represented urban life but also how cities have shaped modes of cinematic representation. We will survey world cinema to some extent but the majority of the films will come from Europe and the United States (early urban actuality films, post-WWI city films, film noir, French Nouvelle Vague, American independent cinema, etc.); that said, we will consider all of them in transnational and worldly terms. Class time will be open to discussion and will likely revolve around questions of space and time, mobility and dislocation, montage and pluralism, vision and power, sexuality and desire, race and immigration, culture and capital, circulation and stratification, development and ruin, violence and terror. Our approach will try to balance the global and local, theoretical and historical, thematic and formal. This will be an intensive course requiring active participation, careful reading of criticism and theory, regular short writing assignments, a midterm paper and one final research paper. This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Paul Haacke is a graduate student instructor in the Department of Comparative Literature at UC Berkeley.

**Comparative Literature 41F, Section I**  
**Forms of Literary Theory: Picture Theory (4 units, LG)**  
**Ms. Polina Dimova**  
**Tuesday and Thursday 12:30-2:00, 24 Wheeler Hall, CCN: 17290**

What is a picture? How do pictures mean in literature? Can a literary piece approximate the condition of visual art? These questions have inspired literary critics and philosophers up to the present day. In this course, we will acquaint ourselves with literary theory through the lens of pictures. While the beginning of the twentieth century saw the linguistic turn in criticism, the beginning of the twenty-first century is largely dominated by the visual, in media, film, and computer interface. Thus, the pictorial turn has brought picture theory to the forefront of critical inquiry. This cutting-edge debate about pictures has generated responses from a range of theorists belonging to the schools of formalism, structuralism, deconstruction, Marxism, psychoanalysis, feminism, postcolonial studies, and media studies. In our readings, we will sample various attempts at recognizing and making sense of the cultural significance of pictures. We will define and examine the concepts of linear perspective, the gaze, photography, the word-image controversy, and ekphrasis, the verbal rendition of a work of visual art. The semester will culminate in a research paper with which students themselves will contribute to the pictorial debate. This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Polina Dimova is a graduate student instructor in the Department of Comparative Literature at UC Berkeley.

**Computer Science 39J, Section I**  
**The Art and Science of Photography: Drawing with Light (2 units, P/NP)**  
**Professor Brian Barsky**  
**Friday 12:00-2:00, 405 Soda Hall, CCN: 26245**

**On the first day of instruction, please meet Professor Barsky at 12:10 in the Oak Room at the Foothill Dining Commons. At 1:10 pm, class will meet in 405 Soda Hall. Additional Food for Thought dining arrangements will be discussed in class.**

This seminar explores the art and science of photography. Photographs are created by the control and manipulation of light. We will discuss quality of light for the rendering of tone, texture, shade, shadow, and reflection. The seminar examines the photographic process from light entering the lens through the creation and manipulation of the final image. Some typical topics are composition and patterns, mathematics of perspective projection, refraction, blur, optics of lenses, exposure control, color science, film structure and response, resolution, digital image processing, the human visual system, spatial and color perception, and chemical versus electronic processing. **The seminar is open to freshmen only. Although this seminar is offered through the Computer Science Division, the focus of this seminar is not computer science. The focus of this seminar is photography, and it is not limited to digital photography but embraces also film photography. Students should have experience using a camera with manual control of exposure and focus and that either has interchangeable lenses of different focal lengths or has a zoom lens. Students must have such a camera to complete the course assignments. Ideally, students should have access to both a film camera and a digital camera. It is helpful, but not essential, for students to have an interest in science (at least chemistry and physics). Class assignments will be based on color slides, prints, and digital images. Although print film assignments are welcome, the darkroom facilities are outside the control of the class. Student work will be critiqued in class. Participation and attendance at all classes and other course-related activities is required to receive a "pass" grade, except for prior arrangement with the instructor or documented emergencies. Committee Education Policy states that faculty may decline to enroll students in a class who cannot be present at all scheduled activities. To read an interesting article about this seminar, please see <http://inst.eecs.berkeley.edu/~cs39j/fa06/engnews/http://inst.EECS.Berkeley.EDU/~cs39j/> This seminar is part of the Food for Thought Seminar Series.**

Brian Barsky received his Ph.D. from the University of Utah in Computer Science and joined the UC Berkeley faculty in 1981. His research interests are CAD/CAM, computer-aided geometric design and modeling, computer graphics, geometric modeling, visualization in scientific computing, and computer-aided cornea modeling and visualization.

**Computer Science 39K, Section I  
Information Technology Goes to War! (2 units, P/NP)  
Professor Randy H. Katz  
Wednesday 4:00-6:00, 310 Soda Hall, CCN: 26247**

Necessity drives invention. In this seminar, we will examine the intertwined historical development of information technology, broadly defined as computing, communications, and signal processing, in the twentieth century within the context of modern warfare and national defense. Topics include cryptography/cryptanalysis and the development of the computer; command and control systems and the development of the Internet; the war of attrition and the development of the mathematics of operations research; military communications and the development of the cellular telephone system; precision munitions and the development of the Global Positioning System. While we will endeavor to explain these developments in technical terms at a tutorial level, our main focus is to engage the students in the historical sweep of technical development and innovation as driven by national needs, and discuss whether this represents a continuing framework for the twenty-first century. **This course requires NO background in information technology or computer science—ANY freshman or sophomore student at Berkeley has the necessary technical background. An interest in military affairs, economics, politics, history, and/or technology is essential. This is not a lecture class—class meetings are organized around live play where students**

**form teams and interact with each other to illustrate the concepts to be discussed. A desire to participate and "play along" is important—no "wall flowers" please!** This seminar may be used to satisfy the Historical Studies requirement in Letters and Science.

Randy Howard Katz received his undergraduate degree from Cornell University, and his M.S. and Ph.D. degrees from the University of California, Berkeley. He joined the Berkeley faculty in 1983, where he is currently the United Microelectronics Corporation Distinguished Professor in Electrical Engineering and Computer Science. He is a Fellow of the ACM and the IEEE, and a member of the National Academy of Engineering and the American Academy of Arts and Sciences. In May 2007, he will receive a Doctor of Philosophy degree (Honoris Causa) from the University of Helsinki. He has published over 250 refereed technical papers, book chapters, and books. His introductory computer engineering textbook, *Contemporary Logic Design*, has been used at over 200 colleges and universities, and is now in a second edition. He has supervised 43 M.S. theses and 34 Ph.D. dissertations (including one ACM Dissertation Award winner and nine women). His recognitions include thirteen best paper awards, three best presentation awards, the Outstanding Alumni Award (Berkeley Computer Science Division), the CRA Outstanding Service Award, the Berkeley Distinguished Teaching Award, the Air Force Exceptional Civilian Service Decoration, the IEEE Reynolds Johnson Information Storage Award, the ASEE Frederic E. Terman Award, and the ACM Karl V. Karlstrom Outstanding Educator Award. In the late 1980s, with colleagues at Berkeley, he developed Redundant Arrays of Inexpensive Disks (RAID), a \$15 billion per year industry sector. While on leave for government service in 1993-1994, he established [whitehouse.gov](http://whitehouse.gov) and connected the White House to the Internet. His current research interests are Reliable, Adaptive Distributed Systems.

**Earth and Planetary Science 39A, Section I  
Geological Influences in California Society Today (2 units, LG)  
Professors Hans-Rudolf Wenk and Mark Richards  
MW 4:00-5:00, 3106 Etcheverry Hall, CCN: 19039**

**Field trip dates TBA. For additional field trip and meeting schedule details and updates, visit the seminar's website at <http://eps.berkeley.edu/courses/eps39/>.**

The theme of this course is the influence of geology in California society. As a freshman seminar, the class involves close personal interaction between students and senior faculty. For the interaction to work, it is essential that all enrolled students be prepared for the learning experience and to become engaged as active participants. Toward this end, the field trips are preceded by two or three one-hour lectures and two or three video presentations. Students are expected to attend one logistical meeting for the section of the field trip they are attending. Each student goes on only one field trip: Group 1 or 2. Each group will take one continuous four-day trip to visit geological and historical localities in various parts of California. Topics emphasized on the trips vary: societal impacts of dams, the Gold Rush, resource conservation, the geology of Yosemite as a national park, water resource issues, volcanic and seismic hazards, and glacial geology. Three nights will be spent camping out. Accordingly, each student will need to bring appropriate gear including a sleeping bag and a tent or make arrangements to share space in a tent. More details on equipment to bring and preparations to make will be supplied at the logistical meetings. **Enrollment is limited to ~60 freshman students. The class will be split into two field-trip groups of a size small enough to ensure an interactive seminar experience. This course is restricted to freshmen only. If you have any questions regarding this seminar, please contact Margie Winn at 642-5574 or [margie@eps.berkeley.edu](mailto:margie@eps.berkeley.edu). This is a Green Theme seminar.**

Hans-Rudolf Wenk is a Professor of Geology. He joined the Department of Earth and Planetary Science in 1967. His research is in crystallography, mineralogy, structural geology and rock deformation. For more information regarding Professor Wenk, please visit his faculty web page at [http://eps.berkeley.edu/people/faculty\\_page.php?name=wenk](http://eps.berkeley.edu/people/faculty_page.php?name=wenk).

Mark Richards is a Professor in the Department of Earth and Planetary Science, and currently Dean of

Physical Sciences. His research is focused on understanding the dynamics of planetary interiors, especially Earth, Venus, Mars, and the Moon. His research group carries out large-scale computational simulations, performs laboratory fluid dynamics experiments, and synthesizes a wide variety of information on interior dynamics, including the gravity field, seismology, geochemistry, planetary imaging, and field investigations. Professor Richards also enjoys exploring Earth's surface by climbing, skiing, and white-water rafting whenever possible. For more information regarding Professor Richards, please visit his faculty web page at [http://eps.berkeley.edu/development/view\\_person.php?uid=7517](http://eps.berkeley.edu/development/view_person.php?uid=7517).

### **Engineering 39B, Section I**

#### **Introduction to Computational Engineering Science (1.5 units, P/NP)**

**Professor John Verboncoeur**

**Tuesday 3:30-5:00, 203 Wheeler Hall, CCN: 27678**

This seminar introduces the program in Computational Engineering Science, a multidisciplinary field linking together elements of biology, chemistry, applied mathematics, physics, and all great areas of engineering. The course includes a series of lectures and guest speakers with topics ranging from multidisciplinary real-world projects to introductions to modeling and simulation. Small projects illustrate the progression from problem definition to modeling to simulation to interpretation and comparison with experiment and observation. There are no prerequisites. **Priority is given to Engineering Science students.**

John Verboncoeur is an Associate Professor-in-Residence in the Department of Nuclear Engineering. His research interest is computational physics.

### **Engineering 39E, Section I**

#### **Engineering and Project-Based Learning (2 units, P/NP)**

**Professor George Johnson and Dr. George Gagnon**

**Thursday 3:30-5:00, 203 Wheeler Hall, CCN: 27680**

**Students will be expected to support math or science teaching in a local K-12 classroom throughout the course of the semester.**

This seminar will explore the development and use of engineering-based projects in K-12 science and math education. Project-based learning is a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks. It is an increasingly popular mode of instruction that takes advantage of students' inherent drive to learn and their capability to do significant work. Students in this seminar will study the basis for this instructional approach, examine the structure of well designed projects, and work in groups to create projects that they will take into local K-12 classrooms. **Students enrolling in this seminar should be interested in pre-college math and science education, and be willing to spend time in local classrooms during the course of the semester. A field placement in a local elementary or middle school will be arranged for each student.**

George Johnson is a Professor in Mechanical Engineering and currently serves as Associate Dean for Special Programs in the College of Engineering. Professor Johnson is Principal Investigator for an NSF GK-12 program that is developing hands-on learning modules in support of middle school education, and is co-PI for the Berkeley component of California Teach, a new program aimed at increasing the number of students who enter the fields of math and science teaching at the pre-college level. His research is in the broad area of solid mechanics, with an emphasis on materials characterization. Much of his work focuses on understanding the macroscopic mechanical behavior of materials in terms of the underlying microstructure (grain size, shape, orientation, defect distribution, etc.).

Dr. George W. Gagnon is Director of Cal Pre-Engineering Partnerships (PEP). He received his B.S. Ed. in Elementary Education with an emphasis in math and science in 1969, his M.A. Ed. in Elementary Education

with an emphasis in reading and writing in 1970, and his Ed.D. in Teacher Education with an emphasis in learning and communications in 1978, from the New School and Center of Teaching and Learning at the University of North Dakota. He has been an elementary and middle school teacher, school principal, teacher educator, and classroom coach for 30 years. His research is on diagnostic assessment, teacher professional development, and constructivist learning.

### **German 39J, Section I**

#### **The Odyssey in Western Culture (3 units, LG)**

**Professor Chenxi Tang**

**Tuesday and Thursday 9:30- 11:00, 282 Dwinelle Hall, CCN: 37480**

Homer's *Odyssey* inaugurated a unique literary theme in Western culture: the narrative of wandering, exploration, and colonization. If Homer and Virgil's heroes still remain within the Mediterranean space, Dante's Ulysses ventures into the unknown, heralding the European exploration of the new world and the subsequent making of modern global society. With the entire earth discovered and colonized, the *Odyssey* of the twentieth century goes on journeys either through man's inner world (such as in James Joyce's *Ulysses*) or through outer space (such as Stanley Kubrick's *A Space Odyssey*). Designed as a great-book course, this seminar will start with a careful reading of Homer and then examine the variations of the *Odyssey* theme from antiquity to the twentieth century. In addition to the above-mentioned authors, we'll also read Camoes, Kafka, and Walcott. **All readings will be in English translation. Knowledge of German is not required.**

Chenxi Tang studied philosophy, comparative literature, and German literature at Peking University, Ludwig-Maximilians-Universität Munich (MA 1993), and Columbia University (PhD 2000). He taught at the University of Chicago before joining the German Department at Berkeley in 2007. His research and teaching interests include German literature from the eighteenth to the early twentieth century, social and political theory, and modern European intellectual history. His book *The Geographic Imagination of Modernity: Geography, Literature, and Philosophy in German Romanticism* traces the emergence of the geographic paradigm in Western thought around 1800. Recently he has been awarded a Humboldt Research Fellowship to work on a book project entitled *Fictions of Humanity: Poetics of World History in European Modernity*. For more information regarding Professor Tang, visit his faculty webpage on the Department of German website at <http://german.berkeley.edu/people/showprofile.php?id=150>.

### **History 39A, Section I**

#### **Sex and the City in Modern Japan (4 units, LG)**

**Professor Irvin Scheiner**

**Wednesday 2:00-4:00, 104 Genetics & Plant Biology Building, CCN: 39276**

Alternate Title: Sex, Gender and Tokyo in Modern Japan: 1868-1980.

Tokyo is a wonderfully abrasive, culturally complex and exciting city. The Tokyo metropolitan population today is over twelve million, about ten percent of Japan's total population. (Eight million people now live within the city's 28 wards.) This year the population of the city increased by over a hundred thousand. In early modern Japan, Tokyo (then called Edo) had a population of one million, making it one of the largest cities in the world. Enough with statistics. Tokyo is the city where there first appeared the "modern girl" and where the image of the Japanese "New Women" was publicized. It was there that thousands of young women rushed to get jobs in the new office buildings and where the café waitress appeared as a social ideal for many of the young. Tokyo also was the city where in the late nineteenth century a new idea of the "household" appeared and an experiment was begun with the creation of a domestic architecture for an emerging middle class. Hence we will spend about five or six weeks reading about the transformation of Tokyo in the nineteenth and twentieth centuries. We will read about its neighborhoods, look at its slums and read a series of short stories about Tokyo. Following the Meiji Restoration of 1868 and the overthrow of the rule of lordly government Japan went through a political and social revolution. Commoners-- peasants, merchants and artisans who had been limited by status rules to subordinate roles

in society in the prior Tokugawa regime--became citizens of a modernizing state and society. Of course, it was a male-centered world; nonetheless, from early in the period, the government and many women themselves began to try to join the revolution socially, if not always politically. Following World War II women were politically emancipated, given the vote for the first time and, allegedly, now became fully enfranchised members of Japanese society. In this course we will look at the changing (and ever unchanging) characterization of women and their role in modern Japan. The Meiji government, for example, idealized women for their own political and social purposes, looking to an idealized past to create the cult of the "Good Wife, Wise Mother." Newly formed women's literary groups offered their own often contrasting ideas about the modern women. We will contrast the "New Woman" of the twenties with yet another conception of the "new women" in post-war Japan. Geisha will not be discussed but we will read about all-women theater and its sexual politics and discuss a book on gender and sexuality that will deal with the erotic and women in popular culture and society. Our readings will be a mix of fiction, history, anthropology and sociology. We will read approximately one book per week. I ask all students to read a textbook on modern Japanese history in preparation for the course. I recommend that you pick up either in the library or in a second-hand book store books by either Peter Duus, Andrew Gordon or Kenneth Pyle. Readings in those books will be the basis of our discussion in the second week of classes. Students who miss that class will be asked to write on one or another of these books. I will ask students to write two short book reviews of five pages and be prepared to offer two oral reports on assigned reading. A final paper of about ten pages will be required. This seminar may be used to satisfy the Historical Studies or Social and Behavioral Sciences requirement in Letters and Science.

Irvin Scheiner is a Professor in the Department of History. His areas of interest include East Asia: Japan, Kinsei & Kindai, intellectual and social. For more information, visit his faculty web page at <http://history.berkeley.edu/faculty/Scheiner/>.

**Industrial Engineering and Operations Research 39B, Section I**  
**Enterprise Engineering (2 units, LG)**  
**Professor Ilan Adler**  
**Tuesday 4:00-6:00, 3102 Etcheverry Hall, CCN: 41003**

Industrial Engineering and Operations Research has grown well beyond its roots in manufacturing and branched into virtually all areas of human enterprise. Strategic breakthroughs have come from applying the risk-analysis and resource-allocation tools of IEOR to modern industries that include sports, finance, energy, service, health care, agriculture, communications, and law enforcement. IEOR operates on the interface between information and decisions and is widely considered to be ideal technical training for engineers who want future careers in designing and managing the complex, information-driven enterprises of the twenty-first century.

This course will introduce basic methods and applications of industrial engineering and operations research (IEOR). We will explore approaches for solving interesting and diverse problems, in areas ranging from business to public policy to sports. Students will form teams and develop strategies for attacking these problems. We will also spend time discussing IEOR approaches to solving these problems systematically. The semester will conclude with a final project that demonstrates some of these IEOR strategies on a practical problem. Students will be given the opportunity to apply some IEOR techniques to decisions that directly affect their future. Students who are not declared IEOR majors but who are considering it as their possible field of expertise are encouraged to take this seminar.

Professor Adler holds a B.A. in Economics and Statistics from the Hebrew University in Israel, M.Sc. in Operations Research from the Technion in Israel and Ph.D. in Operations Research from Stanford. His research interests are in optimization theory, financial engineering and combinatorial probability models. For more information regarding Professor Adler, please visit his faculty web page at <http://www.ieor.berkeley.edu/People/Faculty/adler.htm>.

**Italian Studies 39D, Section I**  
**Shakespeare in Italy (3 units, LG)**  
**Professor Albert Ascoli**  
**Tuesday and Thursday 11:00-12:30, 155 Barrows Hall, CCN: 46975**

Among the many attempts to prove that William Shakespeare was not really William Shakespeare but someone else, there is a little book entitled "Shakespeare fu un italiano": Shakespeare was an Italian. This course will argue no such thing. Rather, we will explore the various ways in which Shakespeare was touched by and touched Italy, a country he only knew through books and second-hand report. We will look at some of the works of Italian literature that he read and rewrote in his plays (works by Boccaccio, Ariosto, Bandello, and others), plays of his that are set in Italy (Romeo and Juliet, Othello, Merchant of Venice), Italian operas, works of literature, and films that re-present or appropriate Shakespeare's oeuvre (Verdi's *Otello*; Pirandello's *Six Characters in Search of an Author*; and so on). In the process we will think about the process by which work circulate between places and over time, and how two very different cultures reciprocally interpret each other and, in so doing, reveal themselves. **This seminar will be taught entirely in English, with all readings in English.** This seminar may be used to satisfy the Arts and Literature requirement in Letters and Science.

Albert R. Ascoli is Terrill Distinguished Professor of Italian Studies Department at UC Berkeley. He received his Ph.D. from Cornell University. His primary research interests are in Italian literature and culture, 1200-1600. He is author of *Ariosto's Bitter Harmony: Crisis and Evasion in the Italian Renaissance* and is editor of *Machiavelli and the Discourse of Literature and Making and Remaking Italy: The Cultivation of National Identity around the Risorgimento*. His new book, *Dante and the Making of a Modern Author*, will appear in Spring 2008.

**Italian Studies 39E, Section I**  
**Dante's "Inferno" from Medieval Manuscript to Silver Screen (1.5 units, P/NP)**  
**Professor Steven Botterill**  
**Tuesday 3:30-5:00, B56 Hildebrand Hall, CCN: 46978**

Dante's "Inferno," a poetic vision of sinful human behavior and its punishment written in the first decade of the fourteenth century, retains its ability to challenge and excite readers and artists seven centuries later. We will spend the semester reading and discussing this provocative text, interspersed with study of some artistic reactions to "Inferno" in a specifically twentieth-century form: cinema. Among the films we will watch and discuss are the first attempt to put "Inferno" on screen ("*L'Inferno di Dante*," directed by Giuseppe de Liguoro, 1911); another classic from the silent era ("*Dante's Inferno*," William Scott, 1925); a "B-picture" from the golden age of Hollywood ("*Dante's Inferno*," directed by Harry Lachman, starring Spencer Tracy, Claire Trevor, and Rita Hayworth, 1935); an attempt to make Dante available to the "video generation" ("*A TV Dante*," directed by Peter Greenaway, 1993); and perhaps one or two more recent efforts. **Dante's Inferno will be read in English translation.**

Professor Botterill was born in England, and holds bachelor's, master's and Ph.D. degrees from the University of Cambridge. He has taught Italian literature and culture at Berkeley since 1986. The author of two books and numerous articles on Dante, as well as several articles on other aspects of medieval Italian literature, he is a two-time elected member of the Council of the Dante Society of America, and is editor of the Society's journal, "Dante Studies." He is currently finishing a book entitled "Dante and the Language of Community" and planning one on Dante's ethics. In addition to his departmental teaching and advising responsibilities in Italian Studies, he is currently Associate Dean of the Undergraduate Division in the College of Letters and Science.

**Journalism 39H, Section I**  
**Satellite Radio: Breaking the Bonds of Earth (1.5 units, P/NP)**  
**Professor William J. Drummond**

**Friday 12:30-2:00, 104 North Gate Hall, CCN: 48006**

Dramatic changes have taken place in the listening habits of consumers. Traditional AM and FM radio face a challenge from programming sources literally not of this earth. Satellite radio entered the scene only about five years ago and has made significant inroads. Two services are available: XM and Sirius. Both services offer a wider selection of music as well as talk and entertainment programming than terrestrial radio. This seminar will listen to and critique satellite radio. Students should be prepared to listen critically and write about their reactions to what they are hearing. The class will also examine other advances in audio technology. The goal is to develop an understanding of market forces in present-day radio programming.

William J. Drummond joined the faculty in 1983 after a career in public radio and newspapers. He continues to produce occasional public radio reports and documentaries. From 1979 to 1983 he worked in Washington for National Public Radio, where he was the first editor of Morning Edition before moving on to become National Security Correspondent. He has produced documentary-length radio programs on a wide range of subjects: Native Americans and welfare reform; jazz diva Betty Carter; Allensworth: the pioneering Negro colony in the California Central Valley; a profile of a psychiatrist whose specialty is interviewing serial killers; the early Jim Crow days in Las Vegas; an examination of why Americans are turned off by the political system; and a look at the tension between Malcolm X and Martin Luther King, as seen through the eyes of youth. His honors include a 1989 citation from the National Association of Black Journalists for "Outstanding Coverage of the Black Condition," the 1991 Jack R. Howard Award for Journalism Excellence, and a 1994 Excellence in Journalism Award from the Society of Professional Journalists' Northern California Chapter for an advanced reporting class experiment in civic journalism. He was a member of the planning committee that created the Public Radio International program The World.

**Mathematics 39A, Section  
Teaching Mathematics in Schools (2 units, LG)  
Mr. Emiliano Gomez  
Monday 4:00-6:00, 35 Evans Hall, CCN: 54426**

We will discuss mathematics topics that are hard for students in K-12, interesting math problems from K-12, and issues pertaining to the practice of teaching mathematics at pre-collegiate levels. **We want students who are truly interested in exploring the possibility of becoming mathematics teachers, as well as in majoring in math or science.**

Emiliano Gomez has a PhD in mathematics from UC Berkeley (2000). For the past six years, he has been involved in the professional development of mathematics teachers, and in the mathematics of K-12 schools. He is also director of the UC/CSU Mathematics Diagnostic Testing Project for the UC Berkeley site.

Jolanta Walukiewicz is a math teacher at El Cerrito High School. For many years she has been active as a leader in professional development of math teachers, participating in and/or leading many courses, conferences, and seminars. She is also a member of the workgroup for the UC/CSU Mathematics Diagnostic Testing Project.

**Physics 39, Section I  
Teaching Science (2 units, P/NP)  
Professor Roger Falcone, Mr. John Erickson and Dr. Gregory Schultz  
Friday 12:00-2:00, 200 LeConte Hall, CCN: 69480**

**Students will be expected to support science teaching in a local K-12 classroom throughout the course of the semester.**

The seminar is for students who are interested in improving their ability to communicate scientific knowledge, and considering a career in teaching science in K-12 schools. It will combine instruction in inquiry-based science teaching methods and learning pedagogy with supervised teaching activities in a local school. Students will practice, with support and mentoring, communicating scientific knowledge through presentations and hands-on activities. The seminar builds on the successful Communicating Science series for upper-division students, which is taught in collaboration with the Lawrence Hall of Science. This seminar is an introduction to a new program for undergraduates called Cal Teach, which is described at <http://calteach.berkeley.edu/>. It is the first in a series of courses that will prepare undergraduate students in the sciences, mathematics, and engineering for careers in teaching at the K-12 level, while supporting their regular programs for the bachelor's degree in these subjects.

Professor Falcone has been teaching at UC Berkeley in the Physics Department since 1983 and served as Department Chair from 1995 to 2000. He is also affiliated with the Energy and Resources Group on campus, Lawrence Berkeley National Laboratory, and the Stanford Linear Accelerator Center. His research group conducts experiments in atomic, molecular, and solid state physics using ultrafast-pulse lasers and x-rays. His other activities include working with Berkeley's Lawrence Hall of Science and other groups on kindergarten-to-twelfth-grade education issues, and occasional studies related to national security.

Mr. John Erickson has been teaching at the Lawrence Hall of Science since 1986. He has taught in all subject areas at LHS, with an emphasis in physical sciences and astronomy, for students at the level of preschool through adult. His work includes curriculum development and teacher training in the content and methods of LHS curriculum materials.

Dr. Greg Schultz received his PhD from the UCLA Astronomy & Astrophysics program in 1999, and since then has been with UC Berkeley's Center for Science Education at the Space Sciences Lab (CSE@SSL; <http://cse.ssl.berkeley.edu/>). He came to Berkeley as a National Science Foundation (NSF) Science Education Postdoctoral Fellow, and is now on staff as an Education/Outreach Scientist and Teacher Educator. His work has been primarily focused on teacher education, teacher professional development, and science curriculum development, in particular within the subjects of astronomy, space science, physics, and earth science. He works closely in these regards with colleagues at the Lawrence Hall of Science.

**Physics 39, Section 2**  
**Elementary Physics of Fluids (1.5 units, LG)**  
**Professor Dmitry Budker**  
**Thursday 4:00-5:30, 395 LeConte Hall, CCN: 69483**

Physics of fluids frequently falls through the cracks in the university curriculum. Yet, it is very interesting, entertaining, and practically useful. In this seminar, we will touch upon things such as waves on the surface of water, why airplanes fly, how blood flows in veins and arteries, how to measure a speed of a boat, how a vacuum pump works, and how the speed of a speedboat scales with engine power, and, hopefully, many others. **Enrollment in this seminar is open to any freshman or sophomore who is interested!**

Dmitry Budker is a Professor of Physics. His research focuses on atomic, molecular and optical physics. He has co-authored a recent book "Atomic Physics: Exploration Through Problems and Solutions" published by Oxford University Press, and is presently working on a new book on interactions of atoms and polarized light. For more information regarding Professor Budker and his work, visit the Budker Group website at <http://socrates.berkeley.edu/~budker/> or his faculty web page on the Department of Physics website at <http://physics.berkeley.edu>.

**Physics 39, Section 3**  
**Particle Accelerators: From Fundamental Research to Applied Science (1.5 units,**

**P/NP)**

**Professor Marco Battaglia**

**Friday 1:30-3:00, 395 LeConte Hall, CCN: 69485**

Particle accelerators were invented in Berkeley for researching fundamental properties of matter. Nowadays, there exist hundreds of accelerators out of which only a handful are devoted to particle physics. Particle accelerators are used for a variety of applications from production of radioactive nuclides, to cancer treatment, to material and bio science, to studies in art and archeology. This course will review principles of the operation of particle accelerators, discuss some of the large accelerators devoted to particle physics and then will offer a sampling of their new applications. A visit to an accelerator complex at LBNL will be part of the course.

Professor Marco Battaglia studied physics in Italy and has worked at the European Organization for Nuclear Research (CERN) in Geneva Switzerland for a decade. There he participated in the physics program at the LEP collider and worked on the next generation of lepton accelerators. At UC Berkeley he devotes a significant fraction of his research activity at the next large scale facility in accelerator particle physics, the International Linear Collider. Over the years he has spent his time studying the application of nuclear and particle physics techniques to non-destructive analysis methods for art and archeology.

**Political Science 39D, Section I**

**American Culture in Global Politics (4 units, LG)**

**Professor Giacomo Chiozza**

**Monday and Wednesday 12:00-2:00, 106 Mulford Hall, CCN: 72224**

This seminar investigates the diffusion of American culture and its influence on international political behavior and ideas. The seminar will analyze how American culture has penetrated international society with positive and negative impact, a phenomenon that is often called "Americanization." In the first part of the seminar, we will review competing theoretical arguments about how norms and ideas spread across cultures. We will focus on several areas, including food, movies, sports, political institutions, and policy practices. In the second part of the seminar, students will conduct a research project under the supervision of the instructor where they will assess the impact of Americanization in different societies. Course requirements include an exam, a final research project, class presentations and a series of short papers. This seminar may be used to satisfy the Social and Behavioral Sciences requirement in Letters and Science.

Giacomo Chiozza is an Assistant Professor of Political Science in the Travers Department of Political Science. He holds a PhD in Political Science from Duke University and an undergraduate degree from the Università degli Studi di Milano. His research focuses on foreign perceptions of the United States and the study of conflict processes.

**Public Health 39E, Section I**

**The Medical Detectives (2 units, P/NP)**

**Professor Arthur Reingold**

**Wednesday 10:00-12:00, 2301 Tolman Hall, CCN: 75503**

Have you read newspaper stories about SARS or the bird flu in Hong Kong or Ebola virus in Africa or the recent E. coli outbreak from bagged spinach? Have you wondered who investigated these public health problems and how they did it? In this course, you will learn who these medical detectives are and the ins and outs of how they solve these real-life mysteries. This seminar may be used to satisfy the Social and Behavioral Sciences requirement in Letters and Science.

Professor Arthur Reingold is a licensed physician who has devoted the past twenty years to studying infectious diseases and how to prevent them. He worked at the Federal Centers for Disease Control and

Prevention in Atlanta for eight years before joining the faculty at UC Berkeley and UCSF in 1987. He has been involved in investigations of Legionnaires' Disease, toxic shock syndrome, epidemic meningitis in Africa and Nepal, and numerous other infectious diseases in the United States and in various countries in Latin America, Africa, and Asia.

**Public Health 39F, Section I**  
**Eating and Health Disorders (2 units, P/NP)**  
**Professor Zak Sabry**  
**Tuesday 2:00-4:00, 256 University Hall, CCN: 75506**

**Food for Thought dinner meeting dates and times will be discussed in class.**

The relationships between eating and health reflect biological, environmental and behavioral issues. This course addresses the many factors associated with eating disorders such as anorexia, bulimia and gluttony, and misguided diet regimen. The focus will sharpen the students' attention to social and biological circumstances that lead to the development of these disorders, and their impact on health. This course is designed to appeal to students with a breadth of interests, and with a strong sense of curiosity across disciplines. **This seminar is part of the Food for Thought Seminar Series.** This seminar may be used to satisfy the Biological Sciences requirement in Letters and Science.

Professor Sabry is concerned with public health issues of food and nutrition. His research has focused on the assessment of nutritional status in populations, and the development of nutrition and health programs, with both national and international perspectives.

**Social Welfare 39B, Section I**  
**Propaganda in the Helping Professions (2 units, P/NP)**  
**Professor Eileen Gambrill**  
**Wednesday 10:00-12:00, 201 Haviland Hall, CCN: 80703**

This seminar is for students who are interested in learning about the varieties and consequences of propaganda in the helping professions. Propaganda is defined à la Ellul (1965) as encouraging beliefs and actions with the least thought possible. Propaganda, and its reflections in fads and pseudo-science in the helping professions such as social work, psychiatry and psychology, has become so pronounced that there are now backlashes against it. For example some medical schools offer courses designed to help students to resist the influence of propaganda pitches by pharmaceutical companies. The course will include a brief historical overview of propaganda. Students will have an opportunity to apply class content regarding propaganda to current controversies in the helping professions. **Enrollment is limited to twenty freshmen only.** This seminar may be used to satisfy the Social and Behavioral Sciences requirement in Letters and Science.

Eileen Gambrill is the Hutto Patterson Professor of Child and Family Studies in the School of Social Welfare. Her areas of interests include professional decision making, professional education, and ethical issues in the helping professions. Recent books include *Critical Thinking in Clinical Practice* (2005) second edition (Wiley), and *Social Work Practice: A Critical Thinker's Guide* (2006) (2nd Ed.) Oxford University Press. She is a licensed psychologist in the state of California.

**South and Southeast Asian Studies 39G, Section I**  
**"Think Gender" in Indian Short Stories (2 units, LG)**  
**Lecturer Kausalya Hart**  
**Friday 8:00-10:00, Classroom A in Unit 3 located at 2400 Durant Avenue, CCN: 83112**

In this seminar, students will read fifteen short stories from various languages of India translated into English. The stories will describe the relationships between men and women and how the society looks at the roles of men and women in Indian culture. The students will be expected to read the stories and to discuss and critique them in class. They will also be expected to write two five-page research papers.

**Enrollment is limited to fifteen students.** This seminar may be used to satisfy the Arts and Literature or Social and Behavioral Sciences requirement in Letters and Science.

Kausalya Hart (M.A., Annamalai University, 1962) is the author of Tamil for Beginners, Tamil Madu, and Tamil Tiraippadam (advanced Tamil textbooks). She has prepared numerous Tamil language teaching aids (including a collection of Tamil movie videos), and a dictionary for modern Tamil. Her current research involves the preparation of a dictionary of Tamil inscriptions. Her interests include Tamil literature, grammar, and inscriptions.

**Undergraduate and Interdisciplinary Studies 39B, Section I  
Archival Research: Working with Primary Sources in the Humanities, Sciences, and Engineering (1.5 units, LG)**

**Professor James Casey, Mr. David Farrell and Mr. Peter Hanff**

**Wednesday 3:00-4:30, 120 Bancroft Library, 2121 Allston Way, in the Bancroft Conference Room (just west of campus), CCN: 89006**

This seminar offers undergraduates from any major the opportunity to perform original research using primary sources from the archives of the Bancroft Library, or from other specialized libraries at the University or in the San Francisco Bay Area. Students will have direct access to the unique collections of original manuscripts, papers, early printed editions, photographs, paintings, and other items in the Berkeley archives. These cover literary, historical, philosophical, social, cultural, scientific, engineering, and artistic areas, spanning many centuries and different cultures. Bancroft has an especially rich collection of primary sources from California during the nineteenth and twentieth centuries (e.g., original documents, drawings, and paintings from the Gold Rush era; reports, engineering drawings, and photographs for the Golden Gate and Bay Bridge projects; an extensive archive on the poetry and fiction of the Beat Generation; and the papers of the Sierra Club and the Free Speech Movement). After some introductory sessions on the use of primary documents and artifacts in research, we will explore the Bancroft archives in areas of interest to the group. By mid-semester, several topics will be identified and participants will subsequently work individually or in pairs to pursue in-depth research on a topic of their own choosing and based on archival materials. Creativity and ingenuity in research are encouraged and everyone is expected to participate vigorously in the discussions. Library specialists will provide technical assistance. A presentation and research report will be due at the end of the semester. **In the past, we have found that the seminar works best when our students come from diverse cultural and academic backgrounds and are eager to engage in academic dialogue. We are particularly interested in attracting students from the sciences and engineering in addition to the humanities and arts, so that problems can be discussed from different angles, and interdisciplinary collaborations can take place. Enrollment is limited to sixteen students and attendance is mandatory.**

James Casey is a Professor in the Mechanical Engineering and Bioengineering Departments. He works on theoretical mechanics, but also has an interest in the history of the mathematical sciences. He is a passionate proponent of discourse that crisscrosses disciplinary boundaries.

David Farrell is both Curator of the History of Science and Technology Program at Bancroft and University Archivist.

Peter Hanff, Deputy Director of the Bancroft Library, has an intimate knowledge of the archives at Bancroft and other Bay Area libraries, and a great commitment to the value of primary sources in undergraduate education.

**Undergraduate Business Administration 39D, Section I**  
**How Christianity became the World's Dominant Religion (2 units, P/NP)**  
**Professor Mark Rubinstein**  
**Thursday 2:00-4:00, C320 Cheit (Haas School), CCN: 0845 I**

Christianity is the world's most successful religion in terms of numbers, claiming today about two billion adherents, about one out of every three people on earth. How did that happen? Was it the result of divine intercession, a chance historical mutation, or the natural outgrowth of historical forces? To answer this question, we will look carefully at the world of "early Christianity," the first four and a half centuries AD, a period during which Christianity grew from nothing to become adopted by about 80% of the population of the Roman Empire, and therefore the dominant religion of the Western world. We will begin by comparing what people knew about the world during the time of Jesus to what we know today. We will look briefly at the demise of the "classical world" (of Greece and Rome) that left an opening for new religions to flourish, and we will look briefly at aspects of the Hebrew Bible, the great gift of the Jews, that Christianity adopted and adapted for themselves. Following this prologue, during most of the course we will review the development of the books of the New Testament, the historical evidence for and against Paul's classic interpretation of the death of Jesus, and the further development of Christian philosophy culminating in the works of Augustine. Students will be asked to read portions of the New Testament, Augustine's Confessions, C.S. Lewis' Mere Christianity, and the instructor's new book, *Christus Invictus: How Christianity Became the World's Dominant Religion*. Students need to be prepared for an uncompromising dissection of the historical circumstances and theology of early Christianity. Discussion of religion can be delicate. Students need to be prepared for a dispassionate, critical and two-sided treatment of Christianity and related religions. We will be evaluating the historical role and the veracity of Christianity, as well as what religion reveals about human psychology and thinking. The course should not be used to proselytize for or against religious beliefs.

Mark Rubinstein is a Professor of Finance in the Haas School of Business. He is best known for his research in asset pricing and derivatives. In 2006 he published his most recent book, "A History of the Theory of Investments" (Wiley). Recently he radically changed the focus of his work to Western intellectual history and is currently working on a series of books in that area. The first that will be completed is *Christus Invictus: How Christianity Became the World's Dominant Religion*.