



FALL 2013

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**Freshman and Sophomore Seminars
University of California, Berkeley
231 Evans 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 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 unforgettable. For details on the Discovery Courses, see <http://lsdiscovery.berkeley.edu>.

This document was last updated on August 14, 2013.

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.

African American Studies 24, Section I
Language and Politics in Southern Africa (1 unit, P/NP)
Professor Sam Mchombo
Wednesday 1:00-2:00, 50 Barrows Hall, CCN: 00563

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 African American Studies and was a member of the Department of Linguistics faculty from 1988 to 2009. 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.

Faculty web site: <http://africam.berkeley.edu/faculty/mchombo.html>

Anthropology 24, Section I
Before the Dawn: Imagining Deeper Roots of the Computer Age (1 unit, P/NP)
Professor Rosemary Joyce
Tuesday 1:00-2:00, 225 I College Avenue, Room 101, CCN: 02488

Turing's Cathedral tells the true story of the post-World War II development of the modern digital computer—the ancestor of every laptop and internet-capable device you might use in your daily life. In this seminar, we go deeper in history, and touch on other remarkable people and events in the invention of computing, through the lens of fiction. We start with the stories of Charles Babbage and Ada Lovelace, who developed the idea of computer programming—before 1850. Our main guide here is the cyberpunk novel, *The Difference Engine*, published in 1990, written by Bruce Sterling and William Gibson—better known as the author whose novels inspired the movie *The Matrix*. Our next historical figure is Alan Turing—whose work for Great Britain during World War II led to breaking German codes. The "Turing Test," named for him, defined how to decide if a machine exhibited artificial intelligence. Turing died in 1952 shortly after being arrested for being homosexual. Here, we will read selections from the cyberpunk classic *Cryptonomicon*, by Neal Stephenson, published in 1999. **This seminar is part of the On the Same Page initiative.**

Rosemary Joyce conducted archaeological field research in northern Honduras for more than thirty years, and is now developing collaborations with colleagues in the Mexican state of Chiapas, near Classic Maya Palenque. The sites she has worked at date from the Early Formative (before 1500 BCE) to the twentieth century. Her publications include many books, the most recent "Ancient Bodies, Ancient Lives" (2008, Thames and Hudson), as well as dozens of journal articles and book chapters on topics including gender, sexuality, pottery, burials, and of course, chocolate.

Faculty web site: <http://berkeley.academia.edu/RosemaryJoyce/About>

Chemical Engineering 24, Section I
The Science and Engineering Behind Food (1 unit, P/NP)
Professor Susan Muller
Tuesday 5:00-6:00, 179 Stanley Hall, CCN: 10302

This seminar will explore the science and engineering concepts behind food and cooking. Topics will include introductions to the molecular structure of the basic components of food, how molecular structure determines phase behavior, the manipulation of food texture and feel (viscosity and elasticity), gelation, fermentation, and methods of heating, cooling, and tempering. Readings will come from popular books on "kitchen science," including "On Food and Cooking: The Science and Lore of the Kitchen" by H. McGee. **Enrollment is limited to fourteen freshmen. Open to all freshman; some knowledge of chemistry (or concurrent enrollment in general chemistry) will be helpful.**

Professor Muller has been on the faculty of Chemical and Biomolecular Engineering at Berkeley since 1991. She holds a BSE from Princeton University and a PhD in chemical engineering from MIT. Her research interests include the processing of synthetic and biological macromolecules, fluid mechanics and transport phenomena, microfluidics, and rheology.

Faculty web site: <http://www.cchem.berkeley.edu/sjmgrp/>

Chemistry 24, Section I
Computation in Chemistry (1 unit, P/NP)
Professor William A. Lester Jr.
Thursday 2:00-3:00, 425 Latimer Hall, CCN: 11533

This seminar will explore the use of computation in extending understanding of chemistry in the various sub-disciplines of the field. It will not pursue the use of computers to facilitate experiments. **A high school chemistry course or equivalent is desirable, but not essential. This seminar is part of the On the Same Page initiative.**

Professor Emeritus W. A. Lester, Jr., is a theoretical/computational chemist. He has held professional positions at the National Bureau of Standards (National Institute of Standards and Technology), the Research Division of the IBM Corporation, and was the Director of the U.S. National Resource for Computation in Chemistry.

Faculty web site: <http://chem.berkeley.edu/faculty/emeriti/lester/index.php>

**Civil and Environmental Engineering 24, Section I
The Design and Construction of Biosand and Membrane Filters for Developing Countries (1 unit, P/NP)**

Professor John Dracup

See days and times below , See locations below, CCN: 14002

The first class meeting will be held on Tuesday, September 24, 2013 from 6:00 - 7:30 p.m. in 212 O'Brien Hall. The second class meeting will be held on Saturday, September 28, 2013 from 9:00 a.m. - 3:00 p.m. in Professor Dracup's lab, 125 O'Brien Hall. The third class meeting will be held on Saturday, October 12, 2013 from 9:00 - 3:00 p.m. in Professor Dracup's lab, 125 O'Brien Hall. The fourth and final class meeting will be held on Wednesday, October 16, 2013 from 6:00 - 7:30 p.m. in 212 O'Brien Hall. Pizza and soft drinks will be served at all four of the class meetings. To obtain a passing grade, attendance at all of the four class meetings is mandatory. There will be no exceptions. Please check your schedule carefully before registering for this class.

UNESCO and WHO report that 4,000 to 6,000 children under the age of five die each day in the developing world from the lack of clean water and sanitation. This is equivalent to twelve 747 jet passenger planes crashing each day of the year. However, there are simple cheap technologies available to mitigate this problem, which is the use of biosand and membrane water filters. Biosand and membrane water filters have recently become widely used in the developing world as a means of purifying drinking water for individual household use. They provide a cheap and effective means of removing turbidity and pathogens, i.e., viruses, bacteria and worms, from polluted water. Biosand filters can be readily made from local sources of sand and gravel. The bio layer, one of the main combatants of pollutants, is located at the top of the sand column, and takes up to a few weeks to grow, feeding off the influent initially poured through the sand and gravel column. The outer container can be made from plastic or concrete, materials that are commonly available in the developing world. The pipes and connections are usually made of one-inch PVC pipes. Membrane water filtration is a method to remove bacteria and other contaminants from water by passing raw water through a micro porous membrane. Most membrane filters for drinking water start with thin semi-permeable materials made from a synthetic polymer manufactured as flat sheet stock or as hollow fibers. Many individual small membranes are then bundled and formed into one of hundreds of different types of membrane modules. The purpose of this seminar will be to build and test three different biosand filter containers and three different membrane filters. The class of eighteen freshmen will be divided into six teams with three students per biosand filter team and three students per membrane team. Each team will test and assess its own unique filter. **Enrollment is limited to eighteen freshmen interested in environmental issues. This is a Creating Change Theme Seminar. This seminar is part of the Connections@Cal initiative.**

Dr. John Dracup is a Professor of the Graduate School in the Department of Civil & Environmental Engineering. His expertise is in water resource engineering and hydrology. His recent awards include: being inaugurated into the "Order of the Black Blouse" by the Water Rights Court of Valencia, Spain; the designation of a Diplomat of the American Academy of Water Resource Engineering of the American Society of Civil Engineers; a Honorary Professorship at the Universidad Catolica St. Antonio of Murcia, Spain; and the "Agua para Todos" award from the Region of Murcia, Spain; he was a Senior Fulbright Scholar to Australia and he is a Fellow of the AGU, ASCE, AAAS and the AWRA. He is active in providing clean water to developing countries as a volunteer for Rotary International.

Faculty web site: <http://www.ce.berkeley.edu/faculty/faculty.php?id=205>

Classics 24, Section I

Homer's Odyssey and the Quest for Home, Fulfillment, Happiness and Meaning (I unit, P/NP)

Professor Anthony Bulloch

Tuesday 2:00-3:00, 123 Dwinelle Hall, CCN: 14733

This seminar is a study of the 'Odyssey' in both the cultural and historical context of ancient Greece, and as a mythic language through which to explore issues of identity, gender, sexuality, community, individuality, responsibility, etc.

Anthony Bulloch is a Professor of Classics and Assistant Dean in the Office of Undergraduate Advising in the College of Letters & Science at UC Berkeley. He was born and brought up in London, England. He studied Classics at the University of Cambridge, England (B.A., M.A., Ph.D.) and was a student also at the British School at Rome and the University of Freiburg im Breisgau, Germany. He taught in the Faculty of Classics, Cambridge, where he was also Fellow and Dean of King's College, before coming to UC Berkeley. Publications include work in the fields of Greek poetry, language, metrics, religion and myth. He is currently writing a new textbook on Greek Mythology, to be published by Thames and Hudson (London), and working on another on ancient Greek Cults and Festivals.

Faculty web site: http://classics.berkeley.edu/people/faculty/person_detail.php?person=17

Comparative Literature 24, Section I

Reading and Reciting Great Poems in English (I unit, P/NP)

Lecturer Stephen Tollefson

Tuesday 4:00-5:00, 107 Mulford Hall, CCN: 17302

People today do not have enough poetry in their heads, and everyone should be able to recite one or two of their favorite poems. In addition to its purely personal benefits, knowing some poetry by heart has practical applications: in a tough job interview, you can impress the prospective boss by reciting just the right line, say, from Dylan Thomas: "do not go gentle into that good night/rage rage against the dying of the light." Or at a party some time, you'll be able to show off with a bit of T.S. Eliot: "in the room the women come and go, talking of Michelangelo." In this seminar, we will read a number of classic poems as well as a number of other (perhaps lesser, but still memorable) poems, and discuss them. The poems cut across centuries and types. Students will be encouraged to find other poems for the group to read. Participants will be required to memorize and recite 50-75 lines of their choice, and to prepare a short annotated anthology of their favorite poems.

Steve Tollefson, a lecturer in the College Writing Programs, is the author of four books on writing and grammar as well as articles on a variety of subjects and several short stories. He is a recipient of the campus Distinguished Teaching Award.

Faculty web site: <http://blogs.berkeley.edu/author/stollefson/>

Comparative Literature 24, Section 2

Bob Dylan and Arthur Rimbaud: Poetry and the Senses (I unit, P/NP)

Professor Timothy Hampton

Friday 11:00-12:00, 202 Wheeler Hall, CCN: 17305

Bob Dylan has named the nineteenth-century French poet Arthur Rimbaud as one of his major sources of inspiration. In this seminar we will explore the connections between these two important writers. First we will read carefully through the poetry and letters of Rimbaud, one of the most original and powerful of

modern poets. We will try to get a sense of what makes Rimbaud's poetry so influential, not only for Dylan, but for a whole host of modern artists (including such figures as Patti Smith and Johnny Depp). Then we will study the intersection between Rimbaud's work and Dylan's. Central to our concerns will be the role of the senses in poetic creation, as well as, of course, the relationship between lyric poetry and song. Students will gain familiarity with the writing of a major modern poet and have the chance to work closely on issues of poetic language and versification. They will be expected to participate actively in the discussion and write a short paper. **The course will be in English. No knowledge of French is required.**

Professor Hampton works on Renaissance and early modern European culture, in both English and the Romance languages. His research and teaching involve the relationship between politics and culture, and focus on such issues as the ideology of literary genre, the literary construction of nationhood, and the rhetoric of historiography. His most recent book is "Fictions of Embassy: Literature and Diplomacy in Early Modern Europe." Professor Hampton received UC Berkeley's Distinguished Teaching Award in 2013 and the Divisional Distinguished Teaching Award for Senate Faculty Members in 2009. Professor Hampton is currently the Chair for the Department of French.

Faculty web site: http://complit.berkeley.edu/?page_id=7585

**Earth and Planetary Sciences 24, Section I
Weather and Climate (1 unit, P/NP)
Professor David Romps
Wednesday 4:00-5:00, 325 McCone Hall, CCN: 19044**

This seminar will give an introduction to Earth's atmosphere, its weather and climate, and the underlying physical processes. Topics will include the basic structure of the atmosphere, the forces that drive the winds, clouds and their role in weather and climate, the formation of rain, weather systems, and climate change. **This overview will be at a fairly non-mathematical level: we will use an occasional equation, but no calculus.**

David Romps is an Assistant Professor in the Department of Earth and Planetary Science and a Faculty Scientist in the Earth Sciences Division at Lawrence Berkeley National Laboratory. David received his B.S. in math and B.S./M.S. in physics from Yale University and received his Ph.D. in physics from Harvard University. Motivated by concerns about climate change, he left the field of string theory to work on climate policy at the Woods Hole Research Center and then atmospheric dynamics at Harvard's Center for the Environment. In 2011, David joined the faculty at UC Berkeley, where his group uses theory, simulation, and observation of clouds and atmospheric dynamics to improve our understanding of Earth's climate.

Faculty web site: <http://romps.berkeley.edu>

**Electrical Engineering 24, Section I
Gadgets Electrical Engineers Make (1 unit, P/NP)
Professor Jeffrey Bokor
Wednesday 10:00-11:00, 125 Cory Hall, CCN: 25066**

This seminar is intended to offer a taste of how the hardware that is powering the information age really works. Electrical engineers must invest considerable effort to learn their science and math fundamentals. Eventually, though, the fun comes in building innovative and practical gadgets. We will side-step the science and math and get right into the hardware. We'll take a look at what's inside some of today's most exciting products and technology as well as look ahead at the future products that are just around the corner. Our focus will be on hardware and we will see how much fun engineers can have using their hands other than by typing on a keyboard. **This seminar is part of the On the Same Page initiative.**

Jeffrey Bokor received the B.S. degree in electrical engineering from the Massachusetts Institute of Technology in 1975, and the M.S. and Ph.D. degrees in electrical engineering from Stanford University in 1976 and 1980, respectively. From 1980 to 1993, he was at AT&T Bell Laboratories where he did research on novel sources of ultraviolet and soft X-ray coherent radiation, advanced lithography, picosecond optoelectronics, semiconductor physics, surface physics, MOS device physics, and integrated circuit process technology. He held management positions as head of the Laser Science Research Department at Bell Labs in Holmdel, NJ, from 1987 to 1990, and head of the ULSI Technology Research Department at Bell Labs in Murray Hill, NJ, from 1990 to 1993. Dr. Bokor was appointed Professor of Electrical Engineering and Computer Sciences at the University of California at Berkeley in 1993, with a joint appointment at the Lawrence Berkeley National Laboratory (LBNL). In 2004, he was appointed as Deputy Director for Science at the Molecular Foundry at LBNL, a major new nanoscale science research center. His current research activities include novel techniques for nanofabrication, new devices for nanoelectronics, quantum information processing, extreme ultraviolet lithography, optical metrology, and Fourier optics. He is a fellow of IEEE, APS, and OSA.

Faculty web site: <http://www.eecs.berkeley.edu/~jbokor/>

English 24, Section 1
Shakespeare Comedy: Twelfth Night (1 unit, P/NP)
Professor Alan Nelson
Wednesday 12:00-1:00, 204 Wheeler Hall, CCN: 27943

Our seminar will concentrate on one of Shakespeare's best and most beloved comedies, Twelfth Night. We will read every word of the play as a group, and do trial readings and enactments of various scenes. Members of the seminar will give at least two oral reports each, covering various aspects of plot, character, action, gender representation (and confusion) and, most particularly, language and poetry.

Alan H. Nelson is Professor Emeritus in the Department of English. His specializations are paleography, bibliography, and the reconstruction of the literary life and times of medieval and Renaissance England from documentary sources.

Faculty web site: <http://english.berkeley.edu/profiles/96>

English 24, Section 2
Shakespeare's Hamlet (1 unit, P/NP)
Professor Morton D. Paley
Tuesday 3:00-5:00, 301 Wheeler Hall, CCN: 27946

This seminar will meet for seven weeks, beginning September 3, 2013 and ending October 15, 2013.

Hamlet is perhaps the greatest, the most challenging, and at times the most frustrating play in the English language. In this course we will concentrate intensively on the text (which will be the only assigned reading). We'll consider questions of interpretation, motivation, staging, and poetics, among others. Some questions we'll address: Does Hamlet think the flesh is "sullied" or "solid"? Did Gertrude know about Claudius' murder of old Hamlet? When Hamlet tells Ophelia "get thee to a nunnery," does he mean a brothel? Is Polonius' advice to Laertes sage or silly? Does Hamlet delay? Does he have an Oedipus complex? How old is he? How do we go about answering questions like these? Each student will make a 15-minute seminar presentation during the course of the term, and will write a short essay (no more than 1500 words) afterwards. The text for the course is Hamlet, ed. G. R. Hibbard. Please bring this edition to every meeting, starting with the first. **The only requisite for enrollment is that you be a freshman. No previous knowledge of Shakespeare is expected.**

Morton D. Paley's special interest is the relationship between British literature and the fine arts in the eighteenth and nineteenth centuries. He has written several books on aspects of this subject. His most recent is Samuel Taylor Coleridge and the Fine Arts, published by Oxford UP in 2008.

Faculty web site: <http://english.berkeley.edu/profiles/98>

English 24, Section 3

Reading Art Spiegelman's Maus (1 unit, P/NP)

Professor Hertha D. Sweet Wong

Tuesday 11:00-1:00, 305 Wheeler Hall, CCN: 27948

This seminar will meet for seven weeks, beginning September 3, 2013 and ending October 15, 2013.

Art Spiegelman has been called “one of our era’s foremost comics artists” and “perhaps the single most important comic creator working within the field.” In this seminar we will devote ourselves to a close reading of his Pulitzer Prize-winning graphic memoir, *Maus*, informed by a small dose of comics criticism. The required texts for this seminar are 1) *Maus*. Volume I: A Survivor’s Tale, My Father Bleeds History; 2) *Maus*. Volume II: A Survivor’s Tale, And Here My Troubles Began; and 3) *Understanding Comics: The Invisible Art*. Students should be prepared for active involvement and at least six pages of informal writing.

Hertha D. Sweet Wong is Associate Professor in the Department of English and Chair of the Department of Art Practice. She is the author of books and essays on Native American literature, autobiography, and visual culture. Currently, she is completing a book tentatively entitled *Visualizing Identity: The Pictorial Turn in Late 20th-Century American Autobiography* that examines late 20th-century American subjectivity as it is represented in visual-verbal forms: story quilts, artists' books, comic books, experimental autobiographies, word paintings, and photo-autobiographies.

Faculty web site: <http://english.berkeley.edu/profiles/75>

Environmental Science, Policy, and Management 24, Section 1

Issues in Natural Resource Conservation (1 unit, P/NP)

Professor David Wood

Friday 9:00-10:00, 214 Haviland Hall, CCN: 28998

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 Creating Change 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.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/david-wood/

Environmental Science, Policy, and Management 24, Section 2

Conservation and Environmental Problem Solving (1 unit, P/NP)

Professor Gordon Frankie

Wednesday 10:00-11:00, 106 Mulford Hall, CCN: 29001

This seminar is an examination of current conservation and environmental problems in California and elsewhere in the world. What are the origins of the problems from socioeconomic, policy, biological, and political viewpoints? What is being done to address the problems and how successful are the efforts? Examples of problems include conservation of natural resources such as water and soil, waste issues, recycling, restoration, environmental education, and food systems. **This is a Creating Change Theme Seminar.**

Dr. Gordon Frankie is a faculty member in the Department of Environmental Science, Policy, and Management (ESPM) and teaches several courses on the environment and especially to students in the Conservation and Resource Studies Major in the Department of ESPM. Some of these courses are taught off campus in workshop or in field courses. Dr. Frankie's research specialties are conservation biology, pollination ecology, native bee ecology, urban ecology, environmental education, and tropical ecology. He does his field work throughout California and in selected regions of Costa Rica.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/gordon-frankie/

Environmental Science, Policy, and Management 24, Section 3
Discussions on Evolutionary Biology (1 unit, P/NP)
Professor Philip Spieth
Wednesday 3:00-4:00, 107 Mulford Hall, CCN: 29004

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. For eleven years he served as director of operations for the National Center for Science Education, a nonprofit organization devoted to the teaching of evolutionary biology in public schools.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/philip-spieth/

Environmental Science, Policy, and Management 24, Section 4
Soil Pollution and Remediation (1 unit, P/NP)
Professor Céline Pallud
Wednesday 12:00-1:00, 106 Mulford Hall, CCN: 29007

This seminar will explore environmental quality from the aspect of soil science. Soil degradation is the decline in soil quality due to agricultural, industrial or urban activities. Soil degradation is a global problem that encompasses physical, chemical and biological deterioration. Soils play crucial roles in the quality of our environment, affecting, for example, food and water quality and quantity, and supporting many living organisms. This seminar will focus on soil pollution, and on remediation, which is the removal of pollutants and contaminants. An understanding of soil properties and processes is essential to understand how pollutants behave in soil, and how to design (bio)remediation strategies. The seminar will introduce students to basic soil properties and will include current topics, relevant problems and discussion of

emerging approaches to soil remediation, with a focus on bioremediation and phytoremediation (using soil microorganisms or plants to clean up soils).

C. Pallud has been teaching soil science and doing research on soil and environmental quality at UC Berkeley for the last five years. Her research and background are strongly multidisciplinary, at the interface between soil physics, soil chemistry and soil microbial ecology. Her research is focused on understanding how those nutrients and contaminants cycle in the environment, with implications for maintenance of water and soil quality, evaluation of pollution risks, and design of (bio)remediation strategies.

Faculty web site: <http://celinepallud.com/>

Environmental Science, Policy, and Management 24, Section 5
Creaturely Lives, Catastrophic Times (1 unit, P/NP)
Professors Anne-Lise Francois and Ignacio Chapela
Thursday 4:00-5:00, 225 Dwinelle Hall, CCN: 29009

Seminar sessions will emphasize site-specific study and include outdoor walks near campus.

Co-taught by a biologist and a literary scholar, this seminar explores the role of the study of literature and ecology in the face of ongoing ecological disasters and narratives of impending planetary doom. How can poetry teach us to perceive change so slow it defies the scale of human perception? What can it teach us about the perspective of other creatures? What roles do desire and pleasure play in the scientific understanding of non-human phenomena, especially as these interact with human societies? Given the popularity of end-of-world doomsday scenarios in contemporary environmentalist discourse, what alternatives exist to these often paralyzing, fear-inducing narratives? How can literary and scientific inquiry together offer more complex responses and resources for living together in times of catastrophe? **We seek students from a range of backgrounds—pre-biology majors and students intending to major in English or Comparative Literature. We want to foster dialogue between those pursuing science degrees and those inclining toward the humanities, and we see the seminar as an opportunity to facilitate this discussion.**

Anne-Lise François works in the modern period, comparative romanticisms; lyric poetry; the psychological novel and novel of manners; gender and critical theory; literature and philosophy; and ecocriticism. Her book—*Open Secrets: The Literature of Uncounted Experience* (Stanford University Press, 2008)—was awarded the 2010 René Wellek Prize by the American Comparative Literature Association. A study of the ethos of affirmative reticence and recessive action found in the fiction of Mme de Lafayette and Jane Austen, and the poetry of William Wordsworth, Emily Dickinson and Thomas Hardy, *Open Secrets* argues that these works offer a critique of Enlightenment models of heroic action, productive activity and energetic accumulation, by declining demands to make time productive and remaining content with non-actualized powers. Questions of how to value unused powers and recognize inconsequential action also inform her essay on Wordsworthian natural piety and genetically engineered foods (*Diacritics*, Summer 2003 [published 2005]), as well as an earlier article on the gentle force of habit in Hume and Wordsworth (*The Yale Journal of Criticism*, April 1994). Her current book project “Provident Improvisers: Parables of Subsistence from Wordsworth to Benjamin” focuses on figures of pastoral worldliness, provisionality, and commonness (with “common” understood in the double sense of the political antithesis to enclosure and of the ordinary, vernacular, or profane).

Faculty web site: http://complit.berkeley.edu/?page_id=157

Ignacio Chapela, Associate Professor of Microbial Ecology at the University of California, Berkeley, is a scientist by conviction and aspiring biologist by craft. Born as first-generation Mexican from the mix, common to that country, of indigenous, indigenized and immigrant stocks. Not a science-fiction buff, Ignacio belongs to the group of practicing scientists who find more wonderment in what exists than in

what someone can write onto a page. This can create some trouble, since it tends to make people like him acutely sensitive to the loss of diverse biologies, ideologies, imaginations. They are also prone to stare at things beyond polite limits, and to have an affinity for complexity and non-linear storylines, the stuff of real ecology.

Faculty web site: <http://www.cnr.berkeley.edu/chapelalab/>

Ethnic Studies 24, Section I

The Obama Administration and the Politics of Immigration Reform (1 unit, LG)

Professor Alex Saragoza

Wednesday 2:00-3:00, 78 Barrows Hall, CCN: 31017

This seminar will examine the recent debate over immigration reform in light of the efforts of the Obama administration to tackle this issue, particularly questions regarding the undocumented immigrant population in the U.S. The course will discuss the political forces and events that have led the Obama administration to push Congress to consider a legislative package on immigration. The course will analyze the different legislative provisions that have been proposed by both parties and their implications for opponents and supporters of immigration reform. **This is a Creating Change Theme Seminar.**

Professor Alex Saragoza regularly teaches the course on Mexican migration for the Department of Comparative Ethnic Studies. He has published and lectured extensively on the topic. An essay that he authored appeared in a recent collection on the subject, entitled "Beyond la Frontera: A History of Mexico-U.S. Migration," published by Oxford University Press (2011).

Faculty web site: <http://ethnicstudies.berkeley.edu/faculty/profile.php?person=15>

Geography 24, Section I

What Does It Mean to be Modern? (1 unit, P/NP)

Professor Michael Watts and Ms. Shaina Potts

Thursday 12:00-1:00, 575 McCone Hall, CCN: 36263

Exhibits and performance dates and arrangements will be discussed in class.

What does it mean to be modern, or live in a modern society? What distinguishes the modern from the non-modern? How might we think about words like modernity, modernization and modernism? To what do they refer and what are their origins? This seminar will explore these questions by reading some key texts by a variety of intellectuals and thinkers who have explored the various and complex meanings of being modern and the fundamental contours of modern life. We shall read works by Karl Marx, Hanna Arendt, Charles Baudelaire, Michel Foucault, Friedrich Nietzsche, Max Weber and others who help us explore what stands at the heart of modernity and being modern. We will also attend exhibits and performances on campus and discuss modernism as it is expressed in the visual and performing arts.

Bright, eclectic and motivated students with any background or interest who have an interest in exploring challenging ideas and in reading a wide variety of materials, often of a philosophical orientation. This is a Creating Change Theme Seminar. This seminar is a Berkeley Arts Seminar. Admission to the on-campus arts events included in this course will be provided at no cost to students.

Michael Watts is Class of '63 Professor of Geography and Development Studies. A Guggenheim Fellow in 2003, he served as the Director of the Institute of International Studies from 1994-2004. His research has addressed a number of development issues, especially food and energy security, rural development, and land reform in Africa, South Asia and Vietnam. Over the last twenty years he has written extensively on the oil industry in West Africa and the Gulf of Guinea. Watts has served as a consultant to the Ford and Rockefeller Foundations and a number of NGOs and foundations. Watts is currently the Chair of the

Board of Trustees of the Social Science Research Council and serves on a number of Boards of non-profit organizations including the Pacific Institute.

Faculty web site: http://geography.berkeley.edu/people/person_detail.php?person=21

Shaina Potts is a doctoral student completing her PHD in Geography. She was trained in History and Philosophy at UC Berkeley as an undergraduate and is currently completing a dissertation on the rise of the dominant role of finance in US capitalism and exploring the dynamics of the global financial crisis in 2008-2009.

Faculty web site: <http://iis.berkeley.edu/content/shaina-potts>

German 24, Section I

Post World War II Reflections on the Holocaust: (Auto)Biographical Perspectives (I unit, P/NP)

Professor Frederic Tubach

Monday 12:00-2:00, 282 Dwinelle Hall, CCN: 37266

This seminar will meet the first seven weeks of the semester. Food for Thought dining arrangements will be discussed in class.

I was a German and grew up in Hitler's Reich. Bernat Rosner was a Hungarian Jew who was deported to Auschwitz. His entire family perished in the Holocaust, my family survived WWII. Together, we wrote a book about our radically different lives: *An Uncommon Friendship: From Opposite Sides of the Holocaust* (University of California Press, 2nd ed., 2010). My subsequent book: *German Voices: Memories of Life During Hitler's Third Reich* (UC Press, 2011) narrates experiences and insights of Germans during the fateful twelve years of Nazism. Both books will be discussed within the context of established Holocaust literature with excerpts from works by Primo Levi, Elie Wiesel and Ruth Klüger. **This seminar is part of the Food for Thought Seminar Series.**

Frederic C. Tubach is a Professor Emeritus of the German Department. His areas of interest and research include contemporary German culture and society, and medieval European literature and folklore. He has written radio plays for German radio and has recently co-authored *An Uncommon Friendship: From Opposite Sides of the Holocaust*.

History 24, Section 2

In Their Own Words: Documentaries on Endangered Children and Youth in Sub-Saharan Africa (I unit, P/NP)

Professor Tabitha Kanogo

Thursday 2:00-4:00, 2303 Dwinelle Hall, CCN: 39207

This seminar will meet two hours each week for the first seven weeks of the semester.

This seminar will review documentaries to explore different categories of child and youth endangerment in contemporary Africa. As well as providing ample data for further interrogation, the documentaries give voice to the children and youth therein. Among the themes to be explored are concerns about child trafficking and enslavement, child brides, child laborers, HIV/AIDS orphans, street children, urban gangs, and youth in situations of political violence. In order to historicize and contextualize the study, we shall, in addition to the documentaries, refer to a limited amount of published sources.

Tabitha Kanogo teaches courses on precolonial, colonial and special topics in African history. She wrote *Squatters and the Roots of Mau Mau, 1905-1963* and *African Womanhood in Colonial Kenya, 1900-1950*. Her current research project is broadly entitled "Endangered Childhood in Kenya: A Historical

Perspective." Her current book project is on "Endangered African Childhood and Youth: Precolonial, Colonial and Post-colonial Perspectives."

Faculty web site: <http://history.berkeley.edu/people/tabitha-kanogo>

**Industrial Engineering and Operations Research 24, Section I
Overview of IEOR (1 unit, P/NP)**

Professor Ken Goldberg

Wednesday 4:00-5:00, 321 Haviland Hall, CCN: 41003

Field trip arrangements will be discussed in class.

Industrial Engineers look at the big picture of what makes societies perform best. We design optimal combinations of people, information, materials, and equipment that produce innovative and efficient organizations. This seminar provides a general introduction to the field and profession. Each week a faculty member or graduate student from the IEOR Department will discuss his or her work in communications, ecommerce, entertainment, finance, food, health, logistics, manufacturing, medicine, pharmaceuticals, semiconductors, sports, travel, or transportation.

Ken Goldberg is Professor of IEOR at UC Berkeley, with appointments in EECS and the School of Information. Goldberg was named IEEE Fellow in 2005 and serves (2006-2009) as Vice-President of Technical Activities for the IEEE Robotics and Automation Society. He is Founding Chair of the IEEE Transactions on Automation Science and Engineering (T-ASE) Advisory Board. For more information regarding Professor Goldberg, visit <http://goldberg.berkeley.edu>.

Faculty web site: <http://goldberg.berkeley.edu/>

Integrative Biology 24, Section I

Biology: The Study of Life (1 unit, P/NP)

Professor Tyrone Hayes

Wednesday 5:00-7:00, 2063 Valley Life Sciences Building, CCN: 42003

This seminar meets the entire semester. Food for Thought dining arrangements will be discussed in class.

Biology: The Study of Life is a course primarily designed for non-science majors. The course will examine scientific issues that we are confronted with in our everyday life: health and nutrition, reproduction, etc. The seminar will focus on current events and political issues that we are confronted with today: what is stem cell research? intelligent design? pesticide reform? bio-fuels? genetically modified organisms? **Non-science majors are encouraged to enroll. This seminar is part of the Food for Thought Seminar Series.**

Tyrone Hayes is a Professor of Integrative Biology. He received his Bachelor's degree from Harvard and his PhD from the Department of Integrative Biology, UC Berkeley. Professor Hayes is a developmental endocrinologist whose research focuses on the role of hormones in development and the impact of pesticides on amphibian development and in human cancer. For more information regarding Professor Hayes, visit atrazinelovers.com.

Faculty web site: <http://atrazinelovers.com>

Integrative Biology 24, Section 2

How and Why Do Birds Sing (1 unit, P/NP)

Professor George Bentley

Tuesday 2:00-3:00, 4110 Valley Life Sciences Building, CCN: 42006

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.

Faculty web site: <http://ib.berkeley.edu/people/faculty/bentleyg>

Integrative Biology 24, Section 3

The Stone Age (1 unit, P/NP)

Professor Tim White

Thursday 3:00-5:00, 1007 Valley Life Sciences Building, CCN: 42009

This seminar will meet the first eight weeks of the semester.

This seminar is an overview of human evolution and prehistoric archaeology. The seminar considers the methods and findings of human evolutionary studies, and introduces laboratory and field investigations into this topic. It will cover the biological and technological evidence of human evolution across the last six million years, and will focus on current debates about human origins. Hands-on experience with fossils and artifacts from around the world will be an integral part of the seminar. Students will be introduced to primary research papers and will be encouraged to critically evaluate published claims about human evolution and related subjects. **Enrollment is limited to first-semester freshmen.**

Professor Tim White has taught at all levels on the Berkeley campus for twenty-eight years, first in the Anthropology Department, and now in Integrative Biology. He conducts fieldwork in Africa and Eurasia and has made many discoveries relating to the topic of the seminar. He co-directs Cal's Human Evolution Research Center and is the Curator of Biological Anthropology in the Hearst Museum of Anthropology.

Faculty web site: <http://ib.berkeley.edu/people/faculty/whitet>

Integrative Biology 24, Section 4

Islands as Model Systems (1 unit, P/NP)

Professor Patrick V. Kirch

Wednesday 9:00- 10:00, 4110 Valley Life Sciences Building, CCN: 42012

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.

Patrick V. Kirch is the Class of 1954 Professor of Anthropology and Integrative Biology. He has carried out archaeological and paleoecological research throughout the islands of the Pacific. His research focuses on the dynamic interactions between humans and the island ecosystems they inhabit.

Faculty web site: <http://arf.berkeley.edu/projects/oal/index.html>

**Integrative Biology 24, Section 5
Ethnobiology, Nutrition, and Global Food Systems (1 unit, P/NP)
Dr. Thomas Carlson
Tuesday 10:00-11:00, 4110 Valley Life Sciences Building, CCN: 42015**

In this seminar we will read Michael Pollan's Omnivore's Dilemma and other select literature on related topics. We will explore the ethnobiological systems around the world that generate thousands of different species of plants and animals eaten by humans. We will examine the historical, cultural, commercial, and biological factors that have resulted in the worldwide consumption of certain plant (e.g., corn) and animal (e.g., cow) species. We will also compare the nutritional qualities, health effects, and carbon footprint of industrial food, organic food, locally grown food, and food that is hunted or gathered. **This is a Creating Change Theme Seminar.**

Dr. Carlson is an ethnobotanist, botanist, and physician who has conducted food and medicinal plant research with numerous different ethnolinguistic groups in Africa, Asia, Oceania, and the Americas. He has published articles in a spectrum of different disciplines including pharmacology, chemistry, experimental biology, nutrition, botany, ethnobotany, and anthropology. Professor Carlson teaches courses in medical ethnobotany, botany, California plant life, evolutionary medicine, and human reproduction.

Faculty web site: <http://ib.berkeley.edu/people/faculty/carlsont>

**Integrative Biology 24, Section 6
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: 42018**

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 as much about the process of science as it is about animal navigation. We will first explore examples of animal navigation and how the underlying mechanisms are being researched. We will then examine experiments that suggest a human navigation ability based on geomagnetic input, and finally we will design an experiment to test if humans have the ability to detect and/or use a geomagnetic sense as do many other animals. **The seminar is designed for students interested in biological research. 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.**

My research interests lie in invertebrate behavior and ecology with much of my work centering on the behavioral ecology of stomatopod crustaceans, a group of tropical marine predators. The initial focus of this research was on how the evolution of potentially lethal weapons influenced stomatopod biology. These studies dealt mainly with communication and the function of aggression. More recent research has expanded to include the evolution of mating systems, interspecific communication, sensory ecology, prey selection, the biomechanics of the strike and larval biology. We are currently initiating studies on the genetic structure of stomatopod populations attempting to deduce the timing and pathways of dispersal. We have also used stomatopod populations as bio-indicators to assess the health of tropical coastal habitats. I have also become interested in the behavior of blue-ringed and other pygmy octopuses. We are currently studying the reproductive and aggressive behavior of several Indo-Pacific species. Much of my research is centered in the tropical Indo-Pacific including programs at Lizard Island, Moorea, and Indonesia.

Faculty web site: <http://ib.berkeley.edu/people/faculty/caldwellr>

Integrative Biology 24, Section 7

The Age of Dinosaurs: What Do We Know? (1 unit, LG)

Professor Kevin Padian

Wednesday 12:00-1:00, 5192 Valley Life Sciences Building, CCN: 42021

Dinosaurs were big funny animals, and "Jurassic Park" was cool. But what's behind all this? In this seminar we use dinosaurs to explore how we know what we know about extinct life, and the methods and approaches that scientists use to study evolution in general. We also explore common myths, such as the idea that dinosaurs were slow and slow-witted, and that an asteroid drove them to extinction. Berkeley's Museum of Paleontology is the largest collection of fossils in any university in the world, and we use it on a weekly basis in this course. A notebook, some writing, and strong initiative in participation are required. **You don't need any preparation for this course except an interest in the subject and the desire to understand how science is constructed. This course is designed to be taken for a letter grade. Students who elect to take this seminar should enroll under the letter grade option.**

Kevin Padian has been teaching at Berkeley for thirty years, mostly courses in evolution, paleontology, and the history of these fields. Research in his lab centers on how large-scale changes get started in evolution, particularly the major new adaptations in vertebrates such as flight, the emergence of dinosaurs, and the evolution of unusual structures and behaviors. He also spends a lot of time on the creation-evolution issue, educating the public about what science is and isn't.

Faculty web site: <http://ib.berkeley.edu/people/directory/detail/5468/>

Integrative Biology 24, Section 8

Randomness and Heritable Memories in Biology (1 unit, LG)

Professor Han Lim

Monday 10:00-11:00, 4110 Valley Life Sciences Building, CCN: 42024

So you think you are the product of your genes and your environment? Well, that's only part of the picture. In this seminar series we will discuss how random biochemical events and the experiences of previous generations can shape an organism's phenotype. Learn why some decisions that determine an organism's fate are left to chance and how this impacts our strategies for preventing and treating bacterial infections. Discover how single cells can inherit memories. Find out how your grandparents' environment may have played a role in shaping your development.

Han Lim is in the Department of Integrative Biology and teaches systems biology to biology and bioengineering majors. Dr Lim trained in medicine and surgery in Australia and has a PhD in pediatrics from the University of Cambridge. His lab studies gene regulation in bacteria using a combination of experiments and mathematical modeling in order to obtain insight into the fundamental processes involved in gene regulation, to better understand infectious disease and to uncover design principles that can be applied to synthetic biology.

Faculty web site: <http://ib.berkeley.edu/people/faculty/limh>

Integrative Biology 24, Section 9

Night (and Day) in the Museum: What Really Goes on in Berkeley's Museum of Vertebrate Zoology? (1 unit, P/NP)

Professor Eileen Lacey

Wednesday 4:00-6:00, 3101 Valley Life Sciences Building, CCN: 42026

This seminar will meet for seven weeks, beginning September 4, 2013 and ending October 16, 2013.

Ever wonder what museum curators really do? Through a combination of tours, hands-on exercises, and student projects, we will explore the diverse activities encompassed by modern natural history museums. This is a rare chance to go behind the scenes at one of the top vertebrate natural history collections in North America . . . and learn how you could become involved in museums-based studies of vertebrate evolution and conservation. Students will blog in this seminar. **We are hoping to recruit freshmen interested in potential long term involvement in the Museum of Vertebrate Zoology community as students, interns, and research assistants. This includes (but is not limited to) students interested in museum science, vertebrate biology, field research, ecology and evolution. This seminar is part of the Connections@Cal initiative.**

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.

Faculty web site: <http://ib.berkeley.edu/labs/lacey/>

Journalism 24, Section 1

Reality TV: From Deadliest Catch to Here Comes Honey Boo Boo (1 unit, LG)

Professor William J. Drummond

Tuesday 1:30-3:00, 104 North Gate Hall, CCN: 48003

This seminar will meet for ten weeks beginning the first week of the semester. Food for Thought dining arrangements will be discussed in class.

In 2008, advertising revenues from cable TV first surpassed revenues from broadcast. The relentless growth of cable TV's audience was fueled largely by the advent of what has come to be called "reality TV," also known as "blue collar TV." Programs examining such hidden corners of Americana as crab fishermen, bush pilots, swamp loggers, wild-pig hunters, gold miners, snake wranglers, repo men, tugboat operators and animal-control officers have changed American viewing habits. Reality shows anointed a brand-new class of American celebrity, from Snooki to Honey Boo Boo, characters who are not just famous but notorious. This Freshman Seminar will examine the history of this media phenomenon. Who is watching it, and why? What are the economics of broadcast v. cable TV? Students will go behind the scenes and examine how producers come up with the ideas, how they weave their own brand of storytelling and how they make money. **This seminar is part of the Connections@Cal initiative. This seminar is part of the Food for Thought Seminar Series.**

William J. Drummond joined the faculty in 1983 after a career in public radio and newspapers. . 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.

Faculty web site: <http://journalism.berkeley.edu/faculty/drummond/>

Linguistics 24, Section I
Language Myths (1 unit, P/NP)
Professor Larry Hyman
Tuesday 10:00-11:00, 233 Dwinelle Hall, CCN: 52239

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 lesser 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.

Faculty web site: http://linguistics.berkeley.edu/people/person_detail.php?person=19

Mathematics 24, Section I
Using Random Walks in the Physical and Social Sciences (1 unit, P/NP)

Professor F. Alberto Grunbaum
Wednesday 10:30-12:00, 939 Evans Hall, CCN: 53802

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

Random walks (whatever they are) have been used as models to understand all sorts of phenomena. More recently this has been enriched with the introduction of so-called "quantum walks." I will explain what this is all about and illustrate some of the surprising results one can explain with these tools by looking at the so called Parrondo's paradox (you may want to Google this one).

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

Faculty web site: <http://math.berkeley.edu/people/faculty/f-alberto-gruenbaum>

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: 53805

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! **This seminar is intended for students who love math and science and want to discuss the latest developments in an atmosphere that fosters creative thought. Students considering a major in math or science have found this seminar a useful resource to help clarify their choice. This is a Creating Change Theme Seminar.**

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.

Faculty web site: <http://math.berkeley.edu/~harrison/Home.html>

Mathematics 24, Section 3
Mathematics in Film and Fiction (1 unit, P/NP)
Professor Olga Holtz
Wednesday 5:00-6:30, 736 Evans Hall, CCN: 53808

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

"Something's going on. It has to do with that number. There's an answer in that number."— Maximilian Cohen, in π (1998).

This course will offer an exploration of mathematics through the lens of a camera, the stage of a theater, and the language of a book. This year we will focus on the interplay between mathematics and computer science, and their representation in media. Can mathematics as a science, the thrill of its pursuit, or the idiosyncrasies of its practitioners be accurately portrayed in these media? Is such an accurate portrayal at all necessary or important? What societal beliefs and misconceptions are reflected in the works of literature and film dealing with mathematics? What is behind the stereotype of a crazy mathematician?

How can one tell a compelling story about math to a non-mathematical audience? We will meet once a week to watch, read, argue about, and (try to) understand the mathematics within the world of literature and film. Besides reading and viewing, the students will be expected to take a very active part in class discussion and to make short presentations, which could include critique of a movie fragment, analysis of a literary text, or even a short mathematical proof. **This class is intended for students with substantial interest in mathematics, film and literature. This seminar is part of the On the Same Page initiative.**

Olga Holtz is a Professor of Mathematics at UC Berkeley. She received her PhD [2000] in Mathematics from the University of Wisconsin, Madison. Since then, she has done research and taught Mathematics and Computer Science in the U.S. and Germany. She is also an independent filmmaker and screenwriter trained at the Berkeley Digital Film Institute [2012-13]. She recently directed her first film.

Faculty web site: <http://www.cs.berkeley.edu/~oholtz/>

Mechanical Engineering 24, Section 1
Art and Science on Wheels (1 unit, P/NP)
Professor Benson Tongue
Wednesday 12:00-1:00, 104 Barrows Hall, CCN: 55302

This seminar will examine two devices near and dear to my heart—the automobile and the bicycle. Both of these have undergone a long history of change and innovation; both inspire passion in their users and both embody technical as well as artistic excellence. Some issues we will look at will be efficiency, alternative power sources, environmental impact, dynamics, aerodynamics and handling. Along the way we'll dispel some myths, and ideally people will leave with a deeper appreciation for what bicycles and cars truly represent. **Enrollment is limited to twelve students.**

Benson likes to profess in the Department of Mechanical Engineering. His interests lie in the fields of vibrations, dynamics and controls, not to mention Scottish dancing, bicycling, fast cars, bird watching, photography and playing around with Photoshop. His books, Principles of Vibrations and Dynamics: Analysis and Design of Systems in Motion, make great bedtime reading.

Faculty web site: <http://www.me.berkeley.edu/faculty/tongue/>

Mechanical Engineering 24, Section 2
Introduction to Graphical Communication in Engineering (1 unit, P/NP)
Professor Dennis Lieu
Monday 5:00-6:00, 2107 Etcheverry Hall, CCN: 56677

This seminar offers an introductory experience with some of the major software used for engineering design. Included will be graphics applications used for 2-dimensional drawing, 3-dimensional modeling, and 3-D animation. **This seminar is part of the On the Same Page initiative.**

Dennis Lieu has been a Professor of Mechanical Engineering at Berkeley since 1988. He received his BS, MS, and D.Eng. degrees from UC Berkeley. He teaches courses in engineering graphics and electromechanical design. His research interests include the design of electric motors and actuators, the study of blunt trauma injury, and design of sports equipment.

Faculty web site: <http://www.me.berkeley.edu/faculty/lieu>

Mechanical Engineering 24, Section 3
Microcontrollers in Mechanical Systems (1 unit, P/NP)
Lecturer George Anwar

Monday 1:00-2:00, 4I Evans Hall, CCN: 56680

This seminar is an introduction to the use of microcontrollers in mechanical systems, specifically in the field of mechatronics and robots. We will examine how to make devices such as the quadrotors possible. **Students with an interest in programming and engineering will benefit most from this seminar. This seminar is part of the On the Same Page initiative.**

George Anwar earned his BS, MS, and PhD from UC Berkeley in Mechanical Engineering. He has consulted in the field of Mechatronics since his graduation and returned to teach as a lecturer seven years ago.

**Molecular and Cell Biology 90A, Section 1
Evolution–Creatures, Not Creation (1 unit, LG)
Professor Jeremy Thorner
Friday 12:00-1:00, 430 Barker Hall, CCN: 57665**

The advent of molecular biology, recombinant DNA methodology, and the capacity to obtain and computationally analyze 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 derived from field observations of existing 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 may range from Charles Darwin to Steven Jay Gould to James D. Watson. **This course is designed to be taken for a letter grade. Students who elect to take this seminar should enroll under the letter grade option. This seminar is part of the On the Same Page initiative.**

Jeremy Thorner is a Professor in the Division of Biochemistry, Biophysics and Structural Biology in the Department of Molecular and Cell Biology. He has been a faculty member at UC Berkeley since July 1974. 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, gene expression, growth, and proliferation rate, and cell shape that allow a cell to cope properly with the changed circumstances.

Faculty web site: http://mcb.berkeley.edu/index.php?option=com_mcbfaculty&name=thornerj

**Molecular and Cell Biology 90A, Section 2
Sampling the Performing Arts at Berkeley (1 unit, P/NP)
Professor Jack Kirsch
Tuesday 5:00-6:00, 62I Stanley Hall, CCN: 57668**

Food for Thought and performance attendance dates and arrangements will be discussed in class.

We will attend about four campus events, which will include at least one play, dance, and film. We will meet the week preceding the event for a discussion of the work, and will follow our attendance with a class discussion the following week. There will be some assigned reading. **I would like a mix of students ranging from those who have had little exposure to the subject matter to some who have often attended plays, dance performances, and who enjoy serious or vintage films. This seminar is a Berkeley Arts Seminar. Admission to the on-campus arts events included in this course will be provided at no cost to students. This seminar is part of the Food for Thought Seminar Series.**

I taught and did research in biochemistry and organic chemistry at Berkeley for many years, but always found some time for serious reading, attendance at concerts and the theater. I formally retired a few years ago, and have now reversed those areas of focus. I have taught freshman seminars devoted completely to the performing arts twice previously, and twice on other subjects.

Faculty web site: <http://chem.berkeley.edu/faculty/kirsch/index.php>

Molecular and Cell Biology 90A, Section 3

Turing's Brave New Digital World: History, Achievements, and Limits of Interfacing the Real World with a Digital One (1 unit, P/NP)

Professor Bryan Krantz

Friday 3:00-4:00, 179 Stanley Hall, CCN: 57670

Using "Turing's Cathedral: The Origins of the Digital Universe" by George Dyson to set the stage, we will discuss the history of digital computing. We will consider the earliest electronic computer systems built in the mid twentieth century and their basic parts and architecture. To understand digital systems and memory storage, we will work in teams to build an 8-bit memory device from scratch, using simple components: transistors, resistors, capacitors, LEDs, a switch, and power supply. We will then consider the historical achievements of these systems. By the end of the semester we will consider how digital systems interface with the real world. To gain some experience in this area we will work in teams to either build and/or work with an analog-to-digital conversion circuit or a digital-to-analog conversion circuit. We will consider the limits of the digital world (if there are any) especially in how it can effectively interface with the real world and its human operators. We should consider the fact that biology chooses to make errors while computer systems work tirelessly to avoid them. We should compare rational and irrational decision making and how computers and humans may differ in their approach to making complex decisions. I hope by the end we will consider whether higher-order brain functions, like creativity, long-term planning, emotion, love, or empathy, may be possible with even the most advanced computer systems. **This seminar is part of the On the Same Page initiative.**

I am an Assistant Professor of Molecular and Cell Biology and Chemistry, currently teaching biochemistry, metabolism and physical biochemistry to undergraduates. I also run a research laboratory that investigates how the bacterial toxin, anthrax toxin, functions in an anthrax infection. In particular, I have been interested in how the cytotoxic machinery of the bacterial toxin is delivered across the membrane bilayer of mammalian host cells. This molecular process, called protein translocation, is not well understood, and the bacterial toxin system has been beneficial in gaining a first-hand look at this exciting process. In terms of this Freshman seminar, I am interested in learning more about the evolution of digital systems and especially how we relate to them, what their limits may be, and what their future may hold.

Molecular and Cell Biology 90B, Section 1

Insulin as a Window on Discovery in Biology (1 unit, P/NP)

Professor Randy W. Schekman

Tuesday 3:00-4:00, 89 Dwinelle Hall, CCN: 57671

Food for Thought dining arrangements will be discussed in class.

The discovery and therapeutic application of insulin was one of the most dramatic developments in twentieth-century biomedical science. We will consider the impact of insulin in protein biochemistry, and molecular and cell biology. We will also explore the role of the individual scientist in the process of discovery and the importance of animal research in biomedical science. The Discovery of Insulin by Michael Bliss will be available in the student bookstore and Invisible Frontiers: The Race to Synthesize a Human Gene by Stephen S. Hall will be provided in class because it is out of print. Glory Enough For All, a Canadian film and dramatic portrayal of the insulin story, will be available for viewing. For additional information about insulin and its status as the first "miracle drug", use the related web site link below this seminar description to access an article that appeared in the New York Times. **Students considering**

a major in Molecular and Cell Biology as well as all other interested students are welcome to enroll. This seminar is open to all students interested in the discovery process in the life sciences. A background in high school biology will be useful; AP biology is particularly appropriate preparation for the material we cover. This seminar is part of the Connections@Cal initiative. This seminar is part of the Food for Thought Seminar Series.

Randy Schekman is a Professor of Cell and Developmental Biology in the Department of Molecular and Cell Biology and an Investigator in the Howard Hughes Medical Institute. Schekman is past Chair of the Department and currently is Chair of the Chancellor's Advisory Committee on Biology, a council that covers the span of life science research conducted on the Berkeley campus. Schekman also directs the campus program in stem cell biology. The research in Schekman's laboratory focuses on the mechanism of transport of membrane proteins within the eukaryotic cell.

Faculty web site: <http://www.hhmi.org/research/investigators/schekman.html>

**Molecular and Cell Biology 90E, Section I
Matter, Mind, Consciousness (1 unit, P/NP)
Senior Lecturer David E. Presti
Wednesday 3:00-4:00, 83 Dwinelle Hall, CCN: 57683**

All we know comes to us via our mental experience: our thoughts, feelings, perceptions, and conscious awareness. However, it is a deep mystery how the physical processes of our brain and body give rise to the subjective experience of consciousness. Some argue that the investigation of this mind-body problem is the most profound question in all of science. **Students interested in all areas of the sciences, arts, and humanities are encouraged to enroll. This seminar is part of the Connections@Cal initiative. This seminar is part of the On the Same Page initiative.**

David Presti has taught neuroscience at UC Berkeley for more than twenty years. For nearly ten years, he has also been teaching neuroscience to Tibetan monastics in India.

Faculty web site: <http://mcb.berkeley.edu/labs2/presti/>

**Natural Resources 24, Section I
Global Environment Theme House Freshman Seminar (1 unit, P/NP)
Professors J. Keith Gillless and Mary Firestone
Thursday 5:00-6:00, 4301 Foothill 4 - Classroom A, CCN: 61353**

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.**

J. Keith Gillless is a professor of forest economics and dean of the College of Natural Resources. His degrees are in forestry and agricultural economics from Michigan State University and the University of Wisconsin. He has been a member of the Berkeley faculty since 1983. His research and teaching interests

include wildland fire protection, environmental economics, international forestry development, biofuels and a lot of other things.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/j-keith-gillless/

Mary K. Firestone is a professor of soil microbial ecology and associate dean of the College of Natural Resources. Her degrees are in microbiology and soil science from Michigan State University. She has been a member of the Berkeley faculty since 1979. Her research addresses the microbial bases of nutrient cycling, terrestrial system response to change, and plant-soil-microbial interactions. She teaches Introductory Environmental Science and Soil Microbial Ecology.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/mary-firestone/

**Near Eastern Studies 24, Section 2
Egyptian Archaeology at Cal (1 unit, LG)
Professor Carol Redmount
Friday 12:00-1:00, 271 Barrows Hall, CCN: 61486**

Cal enjoys important resources for studying the archaeology of ancient Egypt. The P.A. 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 collection come from excavations undertaken in the early 1900s by George Reisner, with funding provided by Phoebe Apperson Hearst. Because the museum is closed for renovations for the next two years, our access to the collection is unfortunately limited. The Museum has, however, making a display cabinet of artifacts available for class, and we will also review the history of the collection. The Bancroft Library on campus owns an important collection of papyri associated with the Hearst Museum collection; we will view some of these papyri at the library. The Bade Museum of the Pacific School of Religion also counts a few Egyptian objects among its collection; we will visit this museum. In addition, I have been directing a UC Berkeley archaeological expedition in Egypt since 2001; we will examine various aspects of this fieldwork, including recent looting of the site, in class.

Carol Redmount is an Associate Professor in the Near Eastern Studies Department. She specializes in the archaeology of ancient Egypt and directs the UC Berkeley excavations at El-Hibeh, a three-thousand-year old provincial town and cemetery site in Middle Egypt. She began her archaeological career the summer of her freshman year in college and hasn't stopped digging since. She has worked in Egypt for over thirty years and lived for extended periods of time in Egypt, Israel and Jordan. Her archaeological experience includes fieldwork in Cyprus, Tunisia, Israel, Jordan and the United States. She is also an animal lover and shares her home with two parrots, a rescue dog and three rescue cats.

Faculty web site: http://nes.berkeley.edu/Web_Redmount/Redmount.html

**Nuclear Engineering 24, Section 1
How It's Made (1 unit, LG)
Professor Peter Hosemann
Monday 3:00-4:00, 203 Wheeler Hall, CCN: 64003**

This class is an introduction to the conventional manufacturing techniques of components used in nuclear and other engineering applications. An introduction to metal fabrication will be given, including, but not limited to, a brief introduction to refining, casting, forming, machining and joining. After an overview of the techniques available to engineers, the students will be expected to perform a literature review and discuss how specifically chosen components can be manufactured. In addition the students will participate in the campus offered machine-shop training where basic skills in machining are taught. **This seminar is part of the Food for Thought Seminar Series.**

Originally from Vienna Austria, Peter Hosemann earned his MS in 2005 and his PhD in 2008 at the Montanuniversitaet Leoben in Austria in Materials Science. Professor Hosemann is interested in experimental materials science for nuclear applications. His main focus is on structural materials used for nuclear components (fission, fusion, spallation, etc.). His research focuses on developing a basic understanding of the materials degradation processes in a nuclear environment and resulting consequences to engineering application.

Nutritional Sciences and Toxicology 24, Section I
Asian Martial Arts Films: The Samurai Movie (I unit, P/NP)
Professor George Chang
Wednesday 11:00-1:00, Unit Two All Purpose Room, CCN: 64596

Food for Thought dining arrangements will be discussed in class.

Six decades ago Americans discovered Asian martial arts films through the Japanese samurai movie. Over the years, these films have shown us many different versions of the sword-toting samurai: the superheroes, the bumblers, the psychopaths, the idiots, and the wannabe samurai. We will screen several samurai movies this semester. Student teams will study many aspects of each film. Some students will focus on the background or production of the film; others may research the film's reception by critics and audiences; still others might review the careers of the filmmakers and actors. After each film screening, we will discuss the students' findings. Classroom discussions will continue over lunch, as we adjourn to the Crossroads Dining Commons for the 'food' portion of our "Food for Thought" seminar. Later each week we will use Facebook to plan future events, share insights, and display links to videos. **This seminar should appeal to open-minded, enthusiastic students with an interest in action movies. Even though our official focus will be martial arts movies, we'll inevitably spend a great deal of time talking about the purposes of a university education and how to survive the process. We will chat about study skills, preparation for examinations, and the untold secrets of mastering the STEM subjects (science, technology, engineering, and mathematics). This seminar is part of the Connections@Cal initiative. This seminar is part of the Food for Thought Seminar Series.**

Professor Emeritus Chang received an AB in chemistry from Princeton and a PhD in biochemistry from Cal. From 1970 to 2007 he taught food microbiology and other food science courses. In 2005 he became the first professor in Cal's Residential Faculty Program. Professor Chang has been a martial arts fan since he saw his first samurai movie in the 1950s. He has practiced American boxing and the major Chinese 'internal' martial arts: Tai Chi, Ba Gua, and Xing Yi Quan.

Philosophy 24, Section I
Computer Simulation in Science and Philosophy (I unit, P/NP)
Professor Sherrilyn Roush
Wednesday 4:00-5:00, 201 Wheeler Hall, CCN: 67168

We ask three questions: How does computer simulation work as a method in science? Does artificial intelligence programming simulate minds or make them? Is the universe a giant computer simulation, and if so how would we know? **This seminar is part of the On the Same Page initiative.**

Sherrilyn Roush is Associate Professor of Philosophy, and Chair of the Group in Logic and the Methodology of Science at UC Berkeley. She is the author of *Tracking Truth: Knowledge, Evidence and Science*, and currently uses simulation in her work on rationality and testimony.

Faculty web site: <http://philosophy.berkeley.edu/roush>

Philosophy 24, Section 2

Reading Dostoyevsky's *The Brothers Karamazov* as an Answer to Our Current Electronic Isolation (1 unit, P/NP)

Professor Hubert L. Dreyfus

Friday 3:00-4:00, 201 Wheeler Hall, CCN: 67712

A decade ago, *Bowling Alone* noted our increasing disconnection from social groups. Recently Sherry Turkle's *Alone Together* argues that, thanks to instant messaging, the web, social media and texting, we are now hyper-connected, and yet we are even more isolated. But neither book shows us what it would be like to be genuinely in touch with one another. Prophetically, *The Brothers Karamazov* offers an account of the origin and spread of a kind of total caring that draws human beings joyfully together. **This seminar is part of the On the Same Page initiative.**

Professor Hubert Dreyfus' research and teaching interests bridge the analytic and Continental traditions in twentieth-century philosophy, focusing on Heidegger and Merleau-Ponty as possible responses to the nihilism of the present age. His teaching has included an interdisciplinary Discovery Course on the understanding of being manifest in various kinds of technology. Professor Dreyfus' courses are available as podcasts.

Faculty web site: <http://socrates.berkeley.edu/~hdreyfus/>

Physics 24, Section 1

The Physics-Computing Partnership (1 unit, P/NP)

Professor Bob Jacobsen

Thursday 2:00-3:00, 325 LeConte Hall, CCN: 69376

Food for Thought dining arrangements will be discussed in class.

Physics and computing have been closely related in many ways since the very dawn of "computing" as a discipline: The first digital computers were built by teams of engineers, physicists and mathematicians. Physics and other scientific uses of computers have repeatedly pushed the computing field forward. For example, the World Wide Web was invented by physicists who didn't have enough room in their office for paper manuals. More recently, supercomputers have been developed for fundamental research in fluid dynamics and climate, and Pandora Radio was created by a physicist. Through various readings and lots of discussion, we'll study the history of this connection, learn how it's affected both fields, and consider what it means for what's going to happen next. The last half of the semester will be organized around questions like these: How is the ability to do massive simulations affecting how we do science? What scientific projects might roll things out into the everyday world? What will computers look like in ten years? **No extensive knowledge of specific physics or computing is needed. The seminar will cover aspects of both topics, so it's important that students have some interest in both physics and computing, and how they've evolved together. Typical homework assignments are an hour of reading and/or web browsing per week. This is a Creating Change Theme Seminar. This seminar is part of the Connections@Cal initiative. This seminar is part of the On the Same Page initiative. 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.

Faculty web site:

http://physics.berkeley.edu/index.php?option=com_dept_management&act=people&Itemid=299&task=view&id=363

Physics 24, Section 2
The Big Bang (1 unit, P/NP)
Professor Bernard Sadoulet
Wednesday 2:00-3:00, 325 LeConte Hall, CCN: 70223

Food for Thought dining arrangements will be discussed in class.

The following topics will be covered in this seminar: the Big Bang, the synthesis of the elements, the cosmic microwave background radiation, the matter-antimatter asymmetry in the universe, the dark matter puzzle, gravitational collapse and the formation of large-scale structure, the birth and death of stars, planetary systems, the emergence of life, and searching for extraterrestrial intelligence. We will use as our text Stephen Hawking and Leonard Mlodinow's "A Briefer History of Time" (Random House 2005). **Prerequisite: first, a curious mind! In addition, an advanced placement course in physics in high school, or an introductory physics course (7A or 8A, which can be taken concurrently with this course). This seminar is part of the Food for Thought Seminar Series.**

Bernard Sadoulet is a Professor of Physics and was appointed in the Physics Department at Berkeley in 1985. He was a particle physicist at LBNL and at CERN who had the chance of being involved in the discovery of the J/Psi and the W and Z vector bosons (which led to two Nobel Prizes). Professor Sadoulet was the Director of the Center for Particle Astrophysics from 1989 to 2001 and is now Director of the UC Institute of Particle Physics and Cosmology. He is a member of the UC Berkeley Divisional Council of the Academic Senate. His research speciality is Experimental Particle Cosmology, in particular the problem of Dark Matter. His interests include science policy, education, and university involvement at the service of the community.

Faculty web site: <http://physics.berkeley.edu/research/faculty/Sadoulet.html>

Physics 24, Section 3
Physical Biology of Single Molecules and Cells (1 unit, P/NP)
Professor Ahmet Yildiz
Monday 4:00-5:00, 482 Stanley Hall, CCN: 70226

The seminar will map the complex landscape of cell and molecular biology from the perspective of physical principles. We will demonstrate that appropriate application of fundamental physical principles can serve as the foundation of how cells make decisions, how organisms move in a unidirectional manner and how cells achieve law and order in intracellular traffic.

Ahmet Yildiz received a BS in Physics from Bogazici University, Istanbul (1996-01) and a PhD in Biophysics from University of Illinois Urbana Champaign (01-04). Ahmet performed his postdoctoral research at the laboratory of Ronald Vale at UCSF (05-08) as a Jane Coffin Childs Fellow. He joined the UC Berkeley Physics faculty in 2008. He is presently an Assistant Professor of Physics at UC Berkeley. Ahmet is a Ellison Medical Foundation Scholar, a Sloan Research Fellow, Burroughs Wellcome CASI Fellow, and the recipient of the 2006 Science Magazine Young Scientist Award and 2005 Gregory Weber Prize.

Faculty web site: <http://physics.berkeley.edu/research/yildiz/>

Physics 24, Section 4
Energy (1 unit, P/NP)
Professor Holger Mueller
Wednesday 12:00-1:00, 397 LeConte Hall, CCN: 70241

We'll explore the physics of energy—what it is, how it is harnessed and used by humans, and the implications this has for the future of the economy and the world. We'll explore energy from, for

example, coal, oil, and nuclear reactions, as well as renewable sources like wind and solar power. We'll explore how energy is distributed and used, and how we may use it in smarter ways. **Students should be enthusiastic about a quantitative and broad understanding of the world. They should be prepared by a freshman physics course such as Physics 7 or H7 that can be taken concurrently. This seminar is part of the Food for Thought Seminar Series.**

Holger Müller applied for his first patent when he was 14. He graduated from Humboldt-University, Berlin and joined the group of later Secretary of Energy Steven Chu at Stanford as a postdoc. In July 2008, he joined the physics faculty at U.C. Berkeley. His research is focused on understanding the matter waves of quantum mechanics and using them for precision experiments exploring the fundamental laws of physics.

Faculty web site: <http://matterwave.physics.berkeley.edu/>

Political Economy 24, Section 1
Political Economy in Contemporary Perspective (1 unit, P/NP)
Senior Lecturer Alan Karras
Tuesday 4:00-5:00, 140 Barrows Hall, CCN: 71203

This seminar will require students to engage with current events, international and domestic, through the lens of political economy. Those who are enrolled will be required to read The New York Times and/or the Economist each week, identify issues of political economy that are being discussed, and present them to their peers for discussion. Differing perspectives on the news, as well as the different ways in which political economy theorists would interact with the events, will be discussed. Students in this seminar will spend a week or two working on the ways in which the political economy interacted with the Ansel Adams photographs, and how we can use these photographs to raise new questions about the political economy of California and higher education. Students should expect vigorous engagement and critical thinking. **This is a Creating Change Theme Seminar.**

Alan Karras is Associate Director of and Senior Lecturer in the International and Area Studies Academic Program. He is the author of *Smuggling: Contraband and Corruption in World History*, as well as several other books and articles on similar subjects. He currently serves as a member of the Executive Council for the World History Association and he has previously served as the Chair of the AP World History Development Committee for the College Board (as well as several other committees). He is also a member of the Boards of Editors for Cambridge University Press's forthcoming *Dictionary of World History* and the nine-volume *Cambridge World History*. In addition to smuggling and corruption, his research interests are in eighteenth-century Caribbean history, especially as it relates to more recent political economy.

Faculty web site: <http://iastp.berkeley.edu/People-Detail/Alan%20Karras>

Political Economy 24, Section 2
What is Political Economy? Theories from Ancient to Modern Times (1 unit, P/NP)
Dr. Beverly Crawford
Tuesday 5:00-6:00, 189 Dwinelle Hall, CCN: 71206

This seminar introduces the political economy major and is intended to help us understand why we think the way we do about real-life questions of political economy: questions of justice and injustice, equality and inequality, individual rights and the common good. It deals with problems in the inequality of wealth, immigration, affirmative action, and the morality of torture. In each case we ask what is the right thing to do and how should we treat each other? This course invites you to subject your own views about the relationship between power and wealth to critical examination. **This is a Creating Change Theme Seminar.**

Beverly Crawford teaches Political Economy at UC Berkeley and is Co-Director of Berkeley's European Union Center of Excellence.

Faculty web site: <http://bev.berkeley.edu/>

Portuguese 24, Section I
Hello Brazil: Literature, Arts, Society (Special Emphasis This Semester on the Amazon) (1 unit, P/NP)
Professor Candace Slater
Tuesday 2:00-3:00, 204 Wheeler Hall, CCN: 86605

This seminar offers a description of Brazil—a vast and varied country—through some of its major literary and artistic expressions. It provides a sense of roots for some of the challenges that Brazil is currently facing as well as a notion of its shifting identities. The title "Hello Brazil" comes from a celebrated film about cultural and economic change. **Some knowledge of Spanish (which has various similarities to Portuguese) and of Latin America is welcome but not required. This seminar is a Berkeley Arts Seminar. Admission to the on-campus arts events included in this course will be provided at no cost to students.**

Candace Slater teaches courses in Brazilian Literature and Culture and the Amazon. She is interested in contemporary Brazilian writers, folk and popular traditions, and environmental problems as well as in how all three of these areas come together. She is the author of eight books and numerous articles.

Faculty web site: <http://spanish-portuguese.berkeley.edu/our-faculty/>

Psychology 24, Section I
The Shattered Mind (1 unit, P/NP)
Professor Mark D'Esposito
Monday 12:00-1:00, Henry H. Wheeler Jr. Brain Imaging Center Conference Room in the Li Ka Shing Center, CCN: 73977

On the first day of class, meet Professor Mark D'Esposito in the lobby of Li Ka Shing Center. Card key access is necessary to enter the Center. The entrance to the Brain Imaging Center is at the southwest corner of Li Ka Shing Center, adjacent to the corner of Oxford Street and The Crescent on the UC campus. Look for the silver letters "Henry H. Wheeler, Jr. Brain Imaging Center" behind the tall windows at that corner of the building.

In this seminar, we will read and discuss chapters from a book entitled "The Shattered Mind" by Dr. Howard Gardner. As Dr. Gardner states, "It is my purpose in this book to demonstrate that a host of critical issues in psychology can be illuminated by a thoughtful study of the behavior and testimony of brain damaged individuals." Such topics will include aphasia, amnesia and the frontal lobe syndrome. The case studies that are presented in the book will be supplemented by patients seen and cared for by Dr. D'Esposito, who is a practicing neurologist.

I am a Professor of Neuroscience and Psychology, Director of the UC Berkeley Brain Imaging Center as well as a practicing neurologist.

Faculty web site: <http://despolab.berkeley.edu>

Psychology 24, Section 2
How Can We Use Computer Technology to Improve Mental Health? (1 unit, P/NP)
Professor Ann Kring

Wednesday 9:00- 10:00, 2129 Tolman Hall, CCN: 73979

In this seminar, we will consider the ways in which technology, particularly computer and smart phone technology can be harnessed to help improve the lives of people with mental illness. To do so, we will take a look at readings in mental health and technology. In addition, we will review many currently available apps that are designed to boost mental health, identify gaps that can be filled, and explore the limits to using technology in this domain. **This is a Creating Change Theme Seminar. This seminar is part of the On the Same Page initiative.**

Professor Kring received a B.S. in psychology from Ball State University (with a minor in computer science) and her M.A. and Ph.D. in clinical psychology from the State University of New York at Stony Brook. Her current research focus is on emotion and psychopathology, with a specific interest in the emotional features of schizophrenia and the linkage between cognition and emotion in schizophrenia. In addition, she studies emotion in healthy individuals, with a focus on individual differences in expressive behavior, gender differences in emotion, and the linkages between cognition, personality, social context, and emotion. She does computer programming for some of her research, and is an avid tech enthusiast who hopes to harness technology in useful ways to promote mental health.

Faculty web site: <http://socrates.berkeley.edu/~akring>

Rhetoric 24, Section 1

Decoding the Mysteries of Literature: an Introduction to Close Reading (1 unit, LG)

Professor Daniel F. Melia

Tuesday 11:00-12:00, 7415 Dwinelle Hall, CCN: 77856

Food for Thought dining arrangements will be discussed in class.

Why does "Moby Dick" begin with "Call me Ishmael"? Is this guy's name Ishmael? If it isn't, why does he want to be called that? Find out why it is that "It is a truth universally acknowledged that a single man in possession of a good fortune must be in want of a wife," as Jane Austen tells us. The seminar will concentrate on a single text that is mysterious in more ways than one, Henry James's ghost story?/murder mystery? "The Turn of the Screw." The techniques of close reading and rhetorical analysis will help us at least to argue rationally about what is going on in this short novel and will give students tools that will stand them in good stead in every course they take. **I am looking for students who are curious about the mechanics of written communication and verbal art. What makes a "great book" great? How do we know if an author or character is "just kidding"? This seminar is part of the Connections@Cal initiative. This seminar is part of the Food for Thought Seminar Series.**

Professor Melia has taught in the Rhetoric Department since the 1970s and has offered a variety of Freshman Seminars. One of his favorite courses over the years has been one on "disorienting books and films" in which classes have examined examples in which authors seem to be going to some lengths to confuse their readers. He has published on figures as disparate as Aristotle and George Lucas. He is a former Jeopardy! champion.

Faculty web site: http://rhetoric.berkeley.edu/people.php?page_id=1056&p=62

Rhetoric 24, Section 2

Scandals in America (1 unit, P/NP)

Professor Michael Wintroub

Tuesday 10:00-11:00, 7415 Dwinelle Hall, CCN: 78241

Scandals aren't simply acts of wrongdoing or incompetence, they are metaphors; as such, they play a central role in modern American political culture. In this seminar we will explore the machinery of scandals, examining their variegated history in show business, sports, science and politics.

Michael Wintroub is an Associate Professor in the Department of Rhetoric. His research focuses on Late Medieval, Early Modern and Modern European social and cultural history. Themes of interest include civic humanism, ritual and pageantry, religion, popular and court culture, kingship, travel writing, cross cultural contact, identity formation, vernacular consciousness, material & visual culture, gender history, the history of science, intellectual history and the history of anthropology.

Faculty web site: http://rhetoric.berkeley.edu/people.php?page_id=1056&p=66

Slavic Languages and Literatures 24, Section 1
The Brothers Karamazov: Let's Read It Together (1 unit, P/NP)
Professor Hugh McLean
Friday 9:00-11:00, 6115 Dwinelle Hall, CCN: 79745

This seminar is a collective exploration of this great novel, seen both as a work of literary art and as a response to philosophical issues of its time. **Enrollment is limited to twelve students. No knowledge of Russian is required, nor are there any special qualifications. No term paper. Grade will be based on class attendance and participation.**

Hugh McLean is a Professor Emeritus of Slavic Languages and Literatures at UC Berkeley. He has taught a wide range of courses on Russian literature and was an active member of the faculty from 1967 to 1994. Since then he has been recalled to teach regular courses and more recently has taught Freshman-Sophomore and Freshman seminars. Professor McLean is the author of *In Quest of Tolstoy* (Boston, 2008).

Slavic Languages and Literatures 24, Section 2
The Mystery and Fascination of the Balkans (1 unit, P/NP)
Professor Ronelle Alexander
Friday 12:00-1:00, 6115 Dwinelle Hall, CCN: 79747

The Balkans as a region have always fascinated Westerners, ranging from intrepid eighteenth- and nineteenth-century travelers seeking the exotica of "Turkey in Europe" to their modern cohorts who become enamored of Balkan culture, and especially its music—a fascination so great that a group of middle-aged and elderly Bulgarian women who were known at home as The Bulgarian State Television Female Vocal Choir could be marketed in the West as "Le mystère des voix bulgares" (The Mystery of Bulgarian Voices), win a Grammy, and have their songs used on the soundtrack of *Xena: Warrior Princess*. But the Balkan region is fascinating in a negative sense as well, that sense which has given our language the verb "to balkanize", defined by Merriam-Webster as "to break up (as a region or group) into smaller and often hostile units". In this class we will explore two basic questions about the Balkans: What is it that makes the region such a land of contradictions and fascination? And why—especially after the intense media attention to the violent breakup of Yugoslavia—does it remain so little understood? **No prerequisites. All interested students are welcome, both those with a Balkan background and those who know nothing about the area.**

Ronelle Alexander, Professor of Slavic Languages and Literatures (Ph.D., Harvard University) has been involved with the Balkans since she was an undergraduate. She has visited all regions of Bulgaria and former Yugoslavia, and has done extensive field work in villages throughout the southern and southeastern Balkans. Her research interests include dialectology (the relations between different geographical varieties of speech), folklore (especially the language of oral epic), and sociolinguistics (especially the relation between language and identity as connected with the breakup of Yugoslavia).

Faculty web site: <http://slavic.berkeley.edu/faculty.html>

Theater, Dance, and Performance Studies 24, Section I
Documentary Playmaking: School Integration, Little Rock, 1957-58 (1 unit, P/NP)
Professor Dunbar Ogden
Monday 2:00-4:00, 8 Zellerbach Hall, CCN: 88048

This seminar will meet for eight weeks, beginning September 9, 2013 and ending October 28, 2013.

On the fateful morning of September 4, 1957, a small group of African-American students walked up to the doors of Central High, Little Rock, to enroll in school—and were turned away by the armed National Guard. Arkansas State Governor Faubus had called out the Guard to surround the building. "Blood will run in the streets," said Faubus, "if Negro pupils should attempt to enter Central High School." A racist mob seethed out front. Eventually the courageous group of children did enter. The first of them graduated in the spring of 1958. They came to be known as the Little Rock Nine; Central High as the first major integrated public high school in the South. Nowadays many people regard their mentor, Daisy Bates, on a level with Martin Luther King, Jr. Each student in our Freshman Seminar will select a person who participated in the integration of Central High, study historical documents linked with that individual, and develop an original monologue in the role of the person, perhaps as one of the Little Rock Nine or as the Governor or as the principal of Central High. We will encourage each student to experiment with a role different from his or her own gender and cultural background. Daisy Bates' *THE LONG SHADOW OF LITTLE ROCK* and Melba Pattillo Beals' *WARRIORS DON'T CRY* will be the required books. **This is a Creating Change Theme Seminar.**

Professor Dunbar H. Ogden has just published a book entitled *MY FATHER SAID YES*, about the integration crisis at Central High School, Little Rock. He has developed this civil rights book in conjunction with students in his Freshman Seminars since 2000. Professor Ogden is also the author of books on actors, set design, and theatrical space.

Faculty web site: <http://tdps.berkeley.edu/people/emeritus-faculty/>

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?

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.

Faculty web site: <http://vision.berkeley.edu/VSP/content/faculty/facprofiles/vansluyters.html>

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.

Chicano Studies 39A, Section I
Chicano Civil Rights Movement (1.5 units, P/NP)
Professor Carlos Muñoz Jr.
Thursday 9:30-11:00, 204 Dwinelle Hall, CCN: 13321

The seminar will consist of examining the multifaceted dimensions of the 1960s Chicano Civil Rights Movement via documentary films. **Students who took Chicano Studies 24: Chicano Civil Rights Movement may not take this freshman and sophomore seminar. This is a Creating Change Theme Seminar.**

Dr. 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*.

Faculty web site: <http://ethnicstudies.berkeley.edu/faculty/profile.php?person=21>

Computer Science 39P, Section I
Photographing History in the Making (2 units, P/NP)
Professor Brian Barsky
Tuesday 12:00-2:00, 405 Soda Hall, CCN: 26177

On the first day of instruction, please meet Professor Barsky at 12:10 p.m. next to the "Suggestions" board inside the Foothill Dining Commons. At 1:10 p.m., the class will meet in 405 Soda Hall. Additional Food for Thought dining arrangements and field trip dates and arrangements will be discussed in class.

Responding to this transformational period in the history of the university, this experimental seminar will explore photographic technique and be conducted in the context of the current climate of change and conflict sweeping the university. Political discussion will be an integral part of the seminar. Class participation is essential. Students should be interested in learning about changes that are occurring at the university and in discussing these topics (for example, fiscal issues, priorities, privatization, students' rights), as well about how documentary photographs convey and affect political change. The seminar emphasizes civic engagement and is not intended to be primarily a photography course. Students should have a background in photography. The seminar will explore the roles of documentary photography, photojournalism, and activist photography as both documenters of and vehicles for change. To hone photographic skills for both film and digital photography, aesthetic, semantic, and technical aspects of photography will be discussed. As time permits, possible photography topics may include quality of light, exposure control, depth of field, composition and patterns, perspective, color science, the human visual system, spatial and color perception, or digital versus chemical processing. Print film assignments are not required but are encouraged; however, darkroom facilities are outside the control of the class. Students are required to take photographs and submit a written paragraph on a weekly basis, and these photographs will be critiqued in class as time permits. To complete the course assignments, students must have a camera that enables manual setting of shutter speed, aperture, and ISO as well for focus and that has either interchangeable lenses of different focal lengths or a zoom lens. Although access to both a film camera and a digital camera is preferred, this is by no means necessary. The class includes visits to campus museums, galleries, and archives. In addition to the requirement of completing weekly photographic and

written assignments, 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. "Guidelines Concerning Scheduling Conflicts with Academic Requirements" by the Committee on Educational Policy state "If unforeseen conflicts arise during the course of the semester students must promptly notify the instructor and arrange to discuss the situation as soon as these conflicts (or the possibility of these conflicts) are known" and "faculty may decline to enroll students in a class who cannot be present at all scheduled activities." **Enrollment in this seminar is limited to freshmen only. This seminar is not about the subject of computer science even though it is offered through the Computer Science Division. Students from all academic disciplines are welcome. This is a Creating Change Theme Seminar. This seminar is part of the Connections@Cal initiative. This seminar is a Berkeley Arts Seminar. Admission to the on-campus arts events included in this course will be provided at no cost to students. This seminar is part of the Food for Thought Seminar Series.**

Brian A. Barsky received his Ph.D. from the University of Utah in Computer Science and joined the UC Berkeley faculty in 1981 where he is Professor of Computer Science and Vision Science, and Affiliate Professor of Optometry at the University of California, Berkeley. He is a member of the Joint Graduate Group in Bioengineering, an interdisciplinary and inter-campus program, between UC Berkeley and UC San Francisco. His research interests include computational photography, contact lens design, computer methods for optometry and ophthalmology, image synthesis, computer aided geometric design and modeling, CAD/CAM/CIM, interactive and realistic three-dimensional computer graphics, computer aided cornea modeling and visualization, and medical imaging.

To view Professor Barsky's photographs of the Occupy Cal / Day of Action at Sproul Hall at UC Berkeley on November 9, 2011, visit <http://www.cs.berkeley.edu/~barsky/occupy.Cal.html>.

Faculty web site: <http://www.cs.berkeley.edu/~barsky>

German 39H, Section I
The World of Yesterday: Vienna 1900 (3 units, LG)
Professor Elaine C. Tennant
TuTh 2:00-3:30, 282 Dwinelle Hall, CCN: 37268

For a few decades at the end of the nineteenth century, Vienna witnessed an extraordinary and unprecedented flowering of the arts, politics, philosophy, and industry. This cultural surge made Vienna the "city of dreams" and not a few nightmares. The capital of Austria-Hungary, Vienna had doubled in population since 1840; and while the mostly failed Revolution of 1848 had not succeeded in toppling the Habsburg monarchy, it had given the empire a constitution. Along the newly constructed Ringstrasse, a parade of monumental public buildings and grand residences separated the old central city from the suburbs that were mushrooming beyond it. Vienna in this period was a city of great variety, contrasts, and contradictions—ethnic, social, political, and economic. It was at once splendid and squalid, progressive and decadent. Fin-de-siècle Viennese society looked backward and forward at the same time. From the Hofburg and the Schönbrunn palace at the edge of town, Emperor Franz Josef maintained the aristocratic, Catholic tradition of the monarchy through social policies that were alternately enlightened and repressive. Downtown, artists, intellectuals, musicians, and businessmen from around the city and across the empire formed the coffeehouse set whose ideas shaped the Viennese Art Nouveau, the Zionist movement, the theory of psychoanalysis, and the Russian Revolution. This was the Vienna of Freud and Herzl, Hofmannsthal and Schnitzler, Bruckner and Mahler, Kokoschka and Schiele, Otto Wagner and Adolf Loos, as well as conservative Mayor Karl Lueger. Vienna in these years was preoccupied with beauty, feeling, and style, but also with class, racial, and ethnic prejudice. This brilliant chapter of the city's history, which saw the rise of the Secession, Young Vienna, and the Wiener Werkstätte, ended with the Great War. This seminar is about the remarkable aesthetic production that burgeoned in the conflicted social and intellectual climate of Vienna around 1900. We will concentrate primarily on literary and journalistic writers of the period, but will also sample the work of some of the great painters, decorative artists, and musicians who contributed to the unique atmosphere of Vienna in the prewar period. The

syllabus is likely to include texts by Sigmund Freud, Arthur Schnitzler, Hugo von Hofmannsthal, Theodor Herzl, Robert Musil, and Franz Kafka; paintings and decorative art objects by Joseph Hofmann and Gustav Klimt; and a film by Max Ophüls. **Previous knowledge of German is not required. Students with a background in German, however, are welcome (indeed encouraged) to do some of the assigned readings in the original language.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Elaine Tennant took her Ph.D. in Germanic Languages and Literatures at Harvard. Her main areas of research are the Habsburg court society in the 15th and 16th centuries, information management in the first century of printing, the development of the German language at the end of the Middle Ages, and the Middle High German narrative tradition. She conducts most of her primary research in Austria. Her publications include a monograph on the emergence of the German common language, a study of vocalism in sixteenth-century German primers, and essays on such topics as Gottfried's Tristan, word and image in early modern Germany, gender dynamics in the Nibelungenlied, New Historicism, intellectual property, and European responses to the discovery of the Americas.

Faculty web site: <http://german.berkeley.edu/people/professors/elaine-tennant/>

German 39M, Section I

Modes of Reading: Joseph, Job and Moses in Literary Criticism (3 units, LG)

Professor Karen Feldman

MWF 10:00-11:00, 282 Dwinelle Hall, CCN: 37452

In this 3-unit freshman and sophomore seminar we will read sections of the Hebrew Scripture closely and examine various literary-critical approaches to this seminal and inexhaustible text. These stories can be read in terms of psychological drama, political allegory, ethical treatise, poetic construction, anthropological study, existential parable, and in other fashions that we will examine. Commentaries may include excerpts by Sigmund Freud, Carl Jung, Rene Girard, Erich Auerbach, Robert Alter, Hannah Arendt, Mieke Bal, Leo Strauss, Gabriel Josipovici, Soren Kierkegaard, Martin Luther, Elie Wiesel and others. **No German or Hebrew required.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Karen Feldman is Associate Professor of German. She works on aesthetics, critical theory and literary theory.

Faculty web site: <http://german.berkeley.edu/people/professors/karen-feldman/>

History 39N, Section I

The Chinese Detective (4 units, LG)

Professor Alexander Cook

TuTh 12:00-2:00, 3205 Dwinelle Hall, CCN: 39212

An inquiry into traditional Chinese conceptions of law and justice through the eyes of the official detective: the district magistrate. Primary source readings include Chinese detective fiction, moral treatises, legal codes, forensic manuals, and criminal casebooks. **All readings are in English translation. There are no prerequisites. This interactive seminar is for freshman and sophomores only.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Alexander C. Cook has taught modern Chinese history at UC Berkeley since 2009.

Faculty web site: <http://history.berkeley.edu/people/alexander-c-cook>

History 390, Section I
The Great War: Crucible of the Twentieth Century (4 units, LG)
Lecturer Mark Sawchuk
MW 2:00-4:00, 3205 Dwinelle Hall, CCN: 40038

This course will introduce students to a number of ways of thinking about the war that George F. Kennan described as the "seminal evil of the twentieth century": the Great War of 1914 to 1918. We will be examining some key works of political, social and cultural history, including first-person accounts and literary sources, in an attempt to identify and explore some of the ways in which this war permanently altered the history of Europe. This seminar may be used to satisfy the Historical Studies breadth requirement in Letters and Science.

Mark Sawchuk is a Visiting Lecturer in the Department of History at UC Berkeley. He received his Ph.D. from UC Berkeley in 2011, with a focus on modern France.

Faculty web site: <http://history.berkeley.edu/people/mark-sawchuk>

History 84, Section I
American High: Years of Confidence and Anxiety, 1950-1964 (2 units, P/NP)
Professor Samuel Haber
Wednesday 2:00-5:00, 214 Haviland Hall, CCN: 39213

This seminar will meet the entire semester.

What is somewhat unusual about this seminar is that we will view and discuss movies made during these years in order help us understand the era. In addition, we will make use of a reader of more conventional documents. This might help us address the question, "What are the advantages and shortcomings of using movies for an understanding of the era in which they were made? Can movies give us a sense of what it was like to be alive in such times?" The importance of front page events such as the Cold War and the Civil Rights movement were immediately apparent at the time. However, in this seminar, we shall also give attention to some less remarked upon developments—such as the use of computers by government and industry, as well as the discovery and wide use of the contraceptive pill—in order to estimate their importance. Students will be asked to write a one paragraph response to each of the movies, and they will also be called upon to write a 10 page interpretive essay at the end of the course. **Enrollment is limited to freshmen and sophomores. This seminar is part of the On the Same Page initiative.**

Samuel Haber is an Emeritus Professor of History at UC Berkeley and is writing a book on American Intellectual and Cultural History.

Faculty web site: <http://history.berkeley.edu/faculty/Haber/>

Jewish Studies 39H, Section I
The Paradox of Survival: An Introduction to Modern Jewish Thought (2 units, LG)
Mr. Eli Rosenblatt
Wednesday 3:00-5:00, 252 Barrows Hall, CCN: 47802

Jewish thought since the eighteenth century is characterized by a commanding paradox. Whereas the Jews' entry into the modern world has witnessed their increasing secularization, Jews have, at the same time, been preoccupied with the relevance and significance of their ancient tradition. This introductory course will examine how a variety of modern Jewish thinkers have constructed and radically re-evaluated Jewishness in the light of modern experience. We will consider significant philosophers, novelists and poets and their understandings of concepts of the self, nation, history, and knowledge in relationship to their reconstruction of Jewish concepts such as justice, redemption, the stranger, holiness, exile and the

land of Israel. Readings include Spinoza, Mendelssohn, Herzl, Achad Ha'am, Elmaleh, Azhari-Moyal, Buber, Rosenzweig, Benjamin, Scholem, Arendt, and Levinas. **This course will be of interest to any student interested in Jewish Studies, Cultural Studies, Literature or Religious Studies. I would like to attract students interested in close reading, literature and language as well as cultural or intellectual history. This is a Creating Change Theme Seminar.** This seminar may be used to satisfy the Philosophy and Values breadth requirement in Letters and Science.

Eli Rosenblatt is a PhD Candidate in Jewish Studies at UC Berkeley.

Legal Studies 39D, Section I
Current Political and Moral Conflicts and the U.S. Constitution (2 units, LG)
Mr. Alan Pomerantz
Monday 10:00-12:00, 47 Evans Hall, CCN: 51506

The debate about morals has moved steadily into the realm of the Supreme Court, but people differ on what exactly the role of the Court should be. Some have strongly argued that the Court's interpretation and application of the Constitution have adversely affected our fundamental rights and usurped powers from other branches of government. This position claims the Court has created an "Imperial Judiciary." Others argue as strongly that the Court has acted properly to protect fundamental freedoms and individual rights in the face of unprecedented political and governmental efforts to limit them. This position claims the Court has, in fact, fulfilled the role envisioned for the Court by the Constitution. This seminar will follow the Socratic method in examining moral and political issues that have a constitutional basis and the Court's participation in the debate on topics such as gay rights (including gay marriage), gun control, abortion, privacy, symbolic speech, college speech codes, "hate" speech, euthanasia and racial profiling. We will read Supreme Court cases, as well as political and legal commentary from across the political spectrum, and consider not only the opinions of the Justices, but also why they hold those opinions. Students will be asked to develop and apply critical thinking skills and are expected to develop and support their own views and opinions regarding the relevant topics. This seminar may be used to satisfy the Philosophy and Values or Social and Behavioral Sciences breadth requirement in Letters and Science.

Alan J. Pomerantz, Esq., is a practicing lawyer and Senior Counsel at Pillsbury Winthrop Shaw Pittman, a major international law firm. A graduate of the NYU School of Law, he also studied in Chile and received an advanced legal degree from the University of Amsterdam (Netherlands). He has lectured and taught widely, including at the NYU School of Law, NYU College of Arts and Science, the University of Amsterdam, Columbia Graduate School, and the University of Concepcion (Chile). He has published numerous articles and contributed to several treatises on legal topics. Mr. Pomerantz is recognized by several peer publications as one of the world's leading lawyers. Mr. Pomerantz has participated in important and controversial matters affecting individual rights, including death penalty appeals, right of public artistic expression, right of privacy for acts of consenting adults, and numerous free speech cases.

Materials Science and Engineering 39A, Section I
The Berkeley Experience (1.5 units, P/NP)
Professor Kal Sastry
Thursday 3:30-5:00, 237 Cory Hall, CCN: 53103

Please note that the class is regularly scheduled for one and one half hours each week; however, it may be extended two hours on two or three field trip days. Accordingly, we may reduce the number of weekly meetings to adjust the total seminar hours to 21 in the semester. The first seminar meeting will be on August 29, 2013.

The University of California at Berkeley is a treasure house of resources: top quality students, staff and professors; remarkable lecture, lab and seminar classes and facilities; exciting athletic, student and political activities; and so on. The city of Berkeley and the San Francisco Bay Area themselves are unique and resource rich. At times, Berkeley may feel impersonal, even alienating for new freshman as well as for returning sophomore students, but increased awareness and prior planning will result in the greatest Berkeley experience. The Berkeley Experience seminar is intended not only for freshman but also for sophomores so they can share their first-year experiences with freshmen and work together. This is found to provide a mutually enriching experience of getting the best and most out of Berkeley and the Bay Area. To this end, the seminar activities will be highly action oriented and carried out at the individual, small group or class level and consist of 1) Workshop-style classroom sessions sharing mutual thoughts, priorities, and experiences; 2) Field trips to professors' offices, campus events, laboratories, libraries, local restaurants, and local area sites; and 3) Development of a personal plan for a unique Berkeley experience and beyond. This seminar is offered for P/NP and the grade will be assigned based on active and full participation in all the classroom sessions and field trips. **This seminar is part of the Connections@Cal initiative.**

Kal Sastry is a Professor Emeritus in the Department of Materials Science and Engineering. His teaching and research interests are in the broad field of minerals processing. He always enjoys working with freshmen and sophomores and loves to teach lower-division undergraduate classes including freshman seminars on "The Story of Gold" and "The Berkeley Experience." During the past several years, Professor Sastry has been extremely active with offering customized training programs to the minerals industry. This year, he looks forward to repeating the highly successful and exciting seminar on "The Berkeley Experience."

Music 39M, Section I
Classical Vocal Works of African-American Composers (3 units, LG)
Lecturer Candace Johnson
Tuesday and Thursday 11:00-12:30, 124 Morrison Hall, CCN: 60422

This seminar offers a general survey of instrumental and vocal literature written by Black composers of classical music from the late nineteenth century to the present. Primary emphasis is on the concert (art) song tradition. Students will gain an understanding of the unique musical, sociological, and literary contexts that led to the development of this hybrid body of music. Works will be considered within the broader scope of American classical literature. Class lectures will be supplemented with recordings, demonstrations, and discussion. Reading and listening assignments will be given regularly, with short papers and class presentations assigned periodically. **There are no prerequisites. No prior music experience is required. Enrollment is limited to twenty-two students.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Soprano Candace Johnson earned her doctorate in voice performance from the University of Michigan and teaches courses in voice and musicology at the University of California, Berkeley. She performs opera, recital and concert works, and specializes in the research and performance of classical works by African-American composers. She is a soloist on the CD recording *The New Anthology of African-American Art Songs*. Johnson has sung the lead roles in operas by Mozart, Menotti, and Puccini. Recent performances include guest appearances at Carnegie Hall and The Manhattan Center. In November 2012, she will premiere her own one-woman show, *Birthing A Voice*, at St. Peter's Church in New York City. The show is a memoir of her personal journey as a singer and commemorates her times studying with the late, renowned Shirley Verrett.

Faculty web site: <http://www.cjsings.com>

Native American Studies 39A, Section I
Native Americans and the American Novel (2 units, LG)
Lecturer Enrique Lima

Monday and Wednesday 10:00-11:00, 186 Barrows Hall, CCN: 61177

The history and cultures of Native Americans continue to fascinate many people. But how does the way we imagine them relate to the challenges confronting Native American communities? In this seminar we will examine how Native Americans have been portrayed in three major American novels: *Death Comes for the Archbishop* by Willa Cather, *The Surrounded* by D'Arcy McNickle, and *Love Medicine* by Louise Erdrich. Along with learning how to read literature closely, we will also investigate the problems facing Native Americans and discuss the possible solutions posed by these novels.

Enrique Lima has taught at the University of Oregon and has been teaching at University of California, Berkeley for the last two years. His primary research is in the novelistic representation of Native peoples throughout the Americas. There is little that he enjoys more than teaching novels.

Native American Studies 90, Section I

Myth, Memory, and History: Understanding Native America (4 units, LG)

Visiting Lecturer Diane Pearson

MWF 11:00-12:00, 104 Barrows Hall, CCN: 61183

This course provides an overview of the history of the indigenous peoples of the Western Hemisphere, and proceeds from the premise that knowledge of Native America is essential to the study of the Western Hemisphere. It will survey a number of societies, cultures, lifestyles, and contemporary and historical issues. This seminar may be used to satisfy the Social and Behavioral Sciences or Historical Studies breadth requirement in Letters and Science.

Dr. Pearson holds a Ph.D. in American Indian Studies and specializes in American Indian law and policy, societies and culture, and education.

Faculty web site: <http://ethnicstudies.berkeley.edu/faculty/profile.php?person=70>

Psychology 39M, Section I

The Psychology of Movies: Seeing, Knowing, and Feeling (From the Minds of the Coen Brothers) (2 units, P/NP)

Professor Art Shimamura

Thursday 2:00-4:00, 3105 Tolman Hall, CCN: 73980

Movies offer a unique yet accessible way to understand human psychology. We often envelope ourselves within a movie, generating the same sensations, thoughts, and feelings as characters in a movie. Filmmakers have developed techniques that play on our perceptions, imagination, and emotions, and this course will discuss ways in which psychological science can help us understand how these techniques work. In particular, we will consider editing styles, storytelling, cross-cultural factors, suspense, and empathy with respect to how the mind (and brain) interprets these influences. We will also consider how movie genres, such as road movies, melodramas, Westerns, and horror movies, focus on certain aspects of human psychology. Of course, we will also watch movies and clips as discussion points and as a way to exemplify principles concerning the psychology of movies. This seminar may be used to satisfy the Social and Behavioral Sciences breadth requirement in Letters and Science.

Arthur P. Shimamura is Professor of Psychology and faculty member of the Helen Wills Neuroscience Institute. He uses brain imaging techniques and analyses of brain-injured patients to explore the biological underpinnings of human memory and cognition. He is also interested in explorations of how we experience art. He is recipient of the Distinguished Teaching Award from the UC Berkeley Division of Social Sciences, has been Scientific Advisor for the San Francisco Exploratorium Science Museum, and was awarded a Guggenheim fellowship to examine art, mind, and brain.

Faculty web site: <http://psychology.berkeley.edu/faculty/profiles/ashimamura.html>

Slavic Languages and Literatures 39N, Section I
Travellers: Fictions, Travelogue, Memoir (3 units, LG)
Professor David Frick
TuTh 2:00-3:30, 179 Dwinelle Hall, CCN: 79757

We will focus on three writers, two Poles, and one who expended some effort not to be influenced by the first of the Poles, all white men who ventured into foreign worlds in the twentieth century, attempting to write their experiences into the narrative of the quite different imperial worlds they tentatively occupied. Joseph Conrad (Josef Teodor Konrad Nałęcz Korzeniowski, 1857–1924) was a son of the no longer existent Polish-Lithuanian Commonwealth, a scion of Polish up-risers and patriots of the nineteenth century, who took to the sea and brought his vision from the provinces, in English, to the center of British Imperial attention, becoming a citizen of the British Empire. We will read some of the classics: *The Secret Sharer*, *Heart of Darkness*, *The Nigger of the Narcissus*, and *The Secret Agent*. We will then turn to a novel—*The Heart of the Matter*—by a British classic of the twentieth century, Graham Greene (1904–1991), who spent much of his life in emulation of Conrad, while also trying to avoid his influence, also a man of empire who attempted to put himself on the outside. We will end with the Pole, Richard Kapuściński (1932–2007), much of whose adult life was spent as a journalist working for the press agency of the Communist Polish People’s Republic, one of the “junior” agencies of the Soviet Empire. He managed to see the world and smuggle back messages to his homeland in Polish-language “reportage” that was not always only about the world abroad—Poles read it as allegories of the power struggles they lived through at home. We will read one of his reports from Revolutionary Iran (Shah of Shahs) submitted during the Communist regime, a post-Communist assessment of the “Empire” (i.e., the Soviet one—Imperium), and a late memoir of his life in foreign journalism (*Travels with Herodotus*). He, too, like Conrad and Greene, became a bit of a “secret agent.” These were inveterate travellers, men of empires (although quite different empires and from quite different standpoints), who, in different ways, attempted to write the rest of the world into the consciousness of the “Centers” to which they owed allegiance. **There are no prerequisites.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Professor Frick has spent many months since 1980 conducting research in Poland, Lithuania, Russia, and Germany. His main area of interest is in the cultural history of early modern Poland, Lithuania, Belarus, and Ukraine, and he has devoted special attention to conflicts between social authorities and personal identities.

Faculty web site: <http://slavic.berkeley.edu/faculty.html#frick>

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: 80702

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. This seminar may be used to satisfy the Social and Behavioral Sciences breadth 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: Improving the Quality of Judgments and Decisions* (2012), third edition, Wiley; *Social Work Practice: A Critical Thinker's Guide* (2013), third edition, Oxford University Press; and *Propaganda in the Helping Professions* (2012) Oxford University Press. She is a licensed psychologist in the state of California

Faculty web site: <http://gambrill@berkeley.edu>

Theater, Dance, and Performance Studies 39D, Section I
Representations of the Holocaust in Contemporary Theatre (2 units, LG)
Professor Sharon Aronson-Lehavi
Tuesday 5:00-7:00, 246 Dwinelle Hall, CCN: 88074

The theatre is a space for memory, commemoration, creation of images, and deliberation of constitutive human experiences. This course deals with the challenge of representing and performing Holocaust-related materials in contemporary theatre and with the ways in which such materials have been used to explore complex questions of the past and the present. We will study plays and theatre performances that employ experimental and thought-provoking modes of representation in order to create powerful theatrical experiences, and analyze the aesthetic, social, and ethical issues that such performances evoke. The course will also engage with theories of documentary theatre, total theatre, cultural memory as performance, trauma and performance, and relations between the arts and the Holocaust more generally. Classes will be accompanied by DVD recordings of performances discussed. **Translations of non-English texts will be provided. This is a Creating Change Theme Seminar.** This seminar may be used to satisfy the Arts and Literature breadth requirement in Letters and Science.

Dr. Sharon Aronson-Lehavi is the Schusterman Visiting Israeli Professor in Israel Studies for 2013-2014 and a Senior Lecturer of Theatre and Performance Studies at the Department of Comparative Literature, Bar Ilan University in Israel. She is a member of the Israel Young Academy, established by the Israel Academy of Sciences and Humanities. She is the author of *Gender and Feminism in Modern Theatre* (Open UP 2013, Hebrew); *Street Scenes: Late Medieval Acting and Performance* (Palgrave Macmillan 2011); and editor of *Wanderers and Other Israeli Plays* (Seagull Books 2009).

Faculty web site: <http://comlit.biu.ac.il/en/faculty/217>

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.

**Electrical Engineering and Computer Science 84, Section I
Hands-on Optics (1 unit, P/NP)
Professor Laura Waller
Monday 5:00-7:00, 299 Cory Hall, CCN: 25155**

This seminar will meet the first seven weeks of the semester.

This class will be a fun exploration of optics and signal processing—an optics hacker lab. We will make computer generated holograms, take apart a projector and build other optics toys and gadgets. Most importantly, we will learn how all these things work by playing with them and trying out new things. Mostly, we will spend time building things, with time to explore and change the schedule to follow student interests. Check out some possible activities by visiting the related web site below this description.

Engineering and other students who like building things are encouraged to enroll. There will be a little bit of math—the sort that you might see in Electrical Engineering 20: Structure and Interpretation of Systems and Signals, and a little bit of physics (basic Electromagnetics)—but there are no prerequisites, other than the ability to operate a manual screwdriver. This seminar is part of the On the Same Page initiative.

Laura Waller is a faculty member in the department of Electrical Engineering and Computer Sciences (EECS) at UC Berkeley, leading a lab in computational optical imaging. She was a Postdoctoral Research Associate in Electrical Engineering and Lecturer of Physics at Princeton University from 2010-2012 and received B.S., M.Eng., and Ph.D. degrees in EECS from the Massachusetts Institute of Technology (MIT) in 2004, 2005, and 2010, respectively, where she was a SMART student (Singapore-MIT Alliance for Research and Technology).

Faculty web site: <http://www.laurawaller.com/>

**English 84, Section I
High Culture, Low Culture: Postmodernism and the Films of the Coen Brothers (2 units, P/NP)
Professor Julia Bader
Wednesday 2:00-5:00, 300 Wheeler Hall, CCN: 28042**

We will concentrate on the high and low cultural elements in the noir comedies of the Coen brothers, discussing their use of Hollywood genres, parodies of classic conventions, and representation of arbitrariness. We will also read some fiction and attend events at the Pacific Film Archive and Cal Performances. **This seminar is part of the Connections@Cal initiative. This seminar is a Berkeley Arts Seminar. Admission to the on-campus arts events included in this course will be provided at no cost to students.**

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

Faculty web site: <http://english.berkeley.edu/profiles/11>

Molecular and Cell Biology 84B, Section I
The Role of History in Biology (I unit, P/NP)
Professor David Weisblat
Wednesday 3:00-4:00, 106 Dwinelle Hall, CCN: 57662

Developmental biology is the study of how species progress through their life cycle. Developmental biology is also a highly derivative field, meaning it uses information and techniques from many other disciplines such as genetics, biochemistry, molecular and cell biology, physiology and biomechanics. Dramatic advances in understanding the molecular mechanisms of animal development have been made using "model" organisms such as the fruitfly *Drosophila melanogaster*. But even a perfect understanding of *Drosophila* development would not constitute a complete solution to the "problem" of development, because it could not explain the dramatic differences between *Drosophila* and other animals. For this, we must appreciate that developmental processes themselves evolve. In this seminar, we will flesh out these ideas and consider examples of how "nothing makes sense except in the context of evolution."

I am a Professor in the MCB Department. Growing up in the Michigan countryside, I was fascinated by natural history. During undergraduate and graduate school, I studied biochemistry and neurophysiology and came to Berkeley as a postdoc, planning to study the neurobiology of the leech. Here at Berkeley, however, my interests were redirected to developmental biology (still focusing on leech), and gradually to the question of how changes in developmental mechanisms have given rise to the remarkable diversity of present day animals.

Faculty web site: http://mcb.berkeley.edu/index.php?option=com_mcbfaculty&name=weisblatd

Natural Resources 84, Section I
Global Environment Theme House Sophomore Seminar (I unit, P/NP)
Professors J. Keith Gillless and Mary Firestone
Thursday 5:00-6:00, 4301 Foothill 4 - Classroom A, CCN: 61356

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.**

J. Keith Gillless is a professor of forest economics and dean of the College of Natural Resources. His degrees are in forestry and agricultural economics from Michigan State University and the University of Wisconsin. He has been a member of the Berkeley faculty since 1983. His research and teaching interests include wildland fire protection, environmental economics, international forestry development, biofuels and a lot of other things.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/j-keith-gillless/

Mary K. Firestone is a professor of soil microbial ecology and associate dean of the College of Natural Resources. Her degrees are in microbiology and soil science from Michigan State University. She has been a member of the Berkeley faculty since 1979. Her research addresses the microbial bases of

nutrient cycling, terrestrial system response to change, and plant-soil-microbial interactions. She teaches Introductory Environmental Science and Soil Microbial Ecology.

Faculty web site: http://ourenvironment.berkeley.edu/people_profiles/mary-firestone/

South and Southeast Asian Studies 84, Section I
Contemporary Southeast Asian Society and Culture through Film (2 units, LG)
Dr. Maria Josephine Barrios-Leblanc, Mr. Frank Smith and Mr. Bac Tran
Friday 4:00-6:00, 104 Dwinelle Hall, CCN: 83236

In this seminar we will examine contemporary Southeast Asian society and culture through the lens of contemporary Southeast Asian films, three each from Thailand, Vietnam and the Philippines. In discussions about the films in class we will seek to understand how these films mirror modern and traditional aspects of the societies in which they were produced. We will also consider the films as examples of current world cinema and vehicles of storytelling. In their four-page papers for each section of the course, students will address the above broad issues (referencing class discussions when appropriate) in relation to their own experiences and opinions, focusing either on one film or comparing two or three from the same country. **Students should plan to participate actively and consistently in class discussions, remembering that class participation makes up 25% of the grade in the course. Previous knowledge of or personal experience with Southeast Asian societies and cultures, and if possible Southeast Asian film, is desired but not required. Students with no previous knowledge of Southeast Asia who have experience watching and discussing a wide range of films from other countries with a critical eye are also welcome. This seminar is part of the Connections@Cal initiative.**

Joi Barrios has a Ph.D. in Filipino and Philippine Literature. She is the author of five books, among them the poetry collection *To Be a Woman is to Live at a Time of War* and her research, *From the Theater Wings: Grounding and Flight of Filipino Women Playwrights*.

Faculty web site: <http://sseas.berkeley.edu/people/faculty/joi-barrios-leblanc>

Frank Smith has taught Khmer language since 1990 (since 2008 at UCB). He has done anthropological research on Khmer and Thai culture, taught a workshop on subtitling Southeast Asian film, taught classes on the Ramayana in Southeast Asian adaptation, and previously lived in Thailand for six years.

Faculty web site: <http://sseas.berkeley.edu/people/faculty/frank-smith>

Bac Hoai Tran has a Master's degree in English with a concentration in Linguistics from San Francisco State University. He is the author of the textbook *Conversational Vietnamese* (2008), and is a coauthor of the *Vietnamese Practical Dictionary* (2010) and *Living with English* (2001). He is a co-translator of the collection of short stories titled *The Stars, The Earth, The River* (1997), as well as several other short stories in the anthologies *The Other Side of Heaven* (1995), *Vietnam: A Traveler's Literary Companion* (1996), *Night, Again* (1996), *Virtual Lotus: Modern Fiction of Southeast Asia* (2002), and *Crossing the River* (2003).

Faculty web site: <http://sseas.berkeley.edu/people/faculty/bac-hoai-tran>

Theater, Dance, and Performance Studies 84, Section I
Engagement with Indigenous Peoples Day Celebration (1 unit, P/NP)
Professors Lisa Wymore and Beth Piatote
Thursday 3:30-5:30, 2401 Bancroft Way, Dance Studio, CCN: 88080

This seminar will meet for eight weeks and will surround, support, and create the Indigenous Peoples Day Celebration on Monday, October 14, 2013. Five Thursday

meeting dates will occur before the celebration; these dates are September 12, September 19, September 26, October 3 and October 10, 2013. Three Thursday meeting dates will occur after the celebration so that students can reflect on and deepen their experiences with this important event; these dates are October 17, October 24 and October 31, 2013. All students are expected to attend the Indigenous Peoples Day Celebration on Monday, October 14, 2013 for at least three hours to pass the course. The celebration attendance time is flexible around the student's other courses. The celebration will be from 10:00 a.m. to 3:00 p.m. (clean up and set up will extend hours) in 240I Bancroft Dance Studio.

Manifesting Indigenous Peoples Day Celebration is a unique course idea. The course proposes that creating a public event around an Indigenous Peoples Day celebration must involve careful preparation, consideration, and reflection—that art making and curating is a civic engagement. At the heart of this course is the notion that place matters, that communities engaging with this project are essential to its success, and that students learn through hands-on experience. The American Indian Graduate Student Association (AIGSA) in conjunction with the Department of Theater, Dance, and Performance Studies (TDPS), along with this course being co-taught by Professors Beth Piatote and Lisa Wymore, are dedicated to making Indigenous Peoples Day Celebration a fruitful experience for our students, the public, and the artists/scholars involved in the activities being presented. **Enrollment is limited to twenty sophomores. Non-sophomores will be able to petition into the seminar if space is available.**

Professor Lisa Wymore graduated with an M.F.A. in Dance from the University of Illinois, Urbana-Champaign and began her career as a dancer, choreographer, and teacher in Chicago. She was a faculty member within the Northwestern University Dance Program before joining the Theater, Dance and Performance Studies faculty at UC Berkeley in 2004. Professor Wymore is the Co-Artistic Director of Smith/Wymore Disappearing Acts; a dance-theater-performance group which brings together conceptually informed narratives with experimental technology. Her most current project involves the development of the Z-Lab UC Berkeley, which is a site for interactive real time collaboration. Visit zlabucb.blogspot.com. Recent projects include a performance at the Berkeley Art Museum on December 2, 2011 entitled "otherworld (machine)," which brought together multiple sites of production and multiplicities of bodies to create layered image collages. Ms. Wymore also directs a monthly improvisation practice for UC Berkeley students and the public to engage with the practice.

Faculty web site: <http://www.smithwymore.org/>

Beth H. Piatote is an Assistant Professor in Native American Studies in the Ethnic Studies Department at UC Berkeley.

Faculty web site: <http://ethnicstudies.berkeley.edu/faculty/profile.php?person=13>

**Vision Science 84, Section I
Comparative Eye Design: Are All Eyes Designed the Same and if Not, Why Not? (1 unit, P/NP)
Professor Christine Wildsoet
Thursday 4:00-6:00, 394 Minor Hall, CCN: 66409**

This seminar will meet approximately every other week and will begin the first week of the semester.

The eyes have it in terms of diversity of design. There are lessons to be learned from comparing eye designs across the animal kingdom. This seminar will review and compare the structure of various components of the eye and its motor and neural accessories, by way of understanding the diversity of eye designs, as well as their strengths and limitations from a functional perspective. Examples where such analyses have spawned new bioengineering lines of research will be given. The course includes hands-on

activities and an excursion. **This seminar is designed for students interested in eyes and/or vision and curious about biological design and evolution, with possible career goals of vision research or eye-related health professions.**

Professor Wildsoet is on the faculty of the School of Optometry, where she is involved in both clinical and pharmacology teaching. She is also a member of the Vision Science group. Her research is multidisciplinary as is her research group, which includes basic scientists, clinicians and bioengineers. The focus of research in the her lab is myopia (nearsightedness), specifically the mechanisms underlying the development of myopia and its clinical management. The overriding goal of this research is the development of treatments for myopia. Under optimal conditions, young eyes adjust their eye growth to correct neonatal focusing errors. Understanding how this growth regulatory process is derailed in myopia can provide the keys to new treatments. Over the course of her research career, Professor Wildsoet has had the opportunity to work with a range of animals and birds to address other questions related to eye design.

Faculty web site: http://wildsoetlab.berkeley.edu/index.php?title=Wildsoet_Lab

Vision Science 84, Section 2
Current Topics in US Healthcare (1 unit, P/NP)
Professor Kenneth Polse
Thursday 11:00-1:00, 491 Minor Hall, CCN: 66412

This seminar will meet seven weeks on the following dates: August 22, August 29, September 5, September 26, October 3, October 10 and October 17, 2013.

Problems associated with affordability and accessibility of health care in the US began to escalate in the late 1980s. Over the past twenty-five years both Republican and Democratic administrations have attempted to address these problems, but without success. In 2008, President Obama was elected on a mandate to change the health care system in a way that would provide affordable and accessible care to all Americans. After debate, controversy and compromise, on March 23, 2010, President Obama signed the Patient Protection and Affordable Health Care Act of 2010 (ACA). This was the most significant health care legislation passed since the Medicare Act of 1964. Even though ACA is law and its constitutionality has been upheld by the US Supreme Court, the path to accessible, affordable, and high quality health care has a long way to go. This seminar examines some of the major hurdles/controversies in US healthcare delivery. We will explore health care in other developed countries as well as the US in order to understand both what is wrong with our current system and possible solutions. Typically, the class will review a news story, media presentation, or editorial that will serve as the beginning for class discussion/debate. Some of the topics will include single payer vs. third-party medical coverage; factors driving the cost of medical care, strategies to control medical costs; the role of insurance companies, pharmacological and device manufacturers, health care delivery in other developed countries, and other topics related to health care delivery. **Students interested in healthcare should find this seminar interesting and timely. Enrollment is limited to ten sophomores.**

From 1972-2003 Professor Polse served as faculty member, Clinic Director, and Associate Dean in the School of Optometry, University of California, Berkeley (UCB). Recently retired, Dr. Polse is currently Professor of Graduate Studies at UCB. His research developed from years of clinical experience, convincing him that it is the clinician's astute observations that often drive the research agenda. He also believes that discovery and clinical implementation require close collaborative efforts between basic and clinical scientists, a principle that has guided his research career. Some of Professor Polse's professional services and honors include President, International Society for Contact Lens Research; memberships on the AOA Council on Research and the National Advisory Eye Council (NIH); a Senior Fulbright Fellowship; AAO Garland Clay Award; AAO Max Shapero Lecture; BCLA Principal Keynote Speaker; UCB Sarver Endowed Chair; and Montague Ruben Medal. Since 1974, Professor Polse has had many students, residents, and post-doctoral fellows participate in his laboratory. He has received continuous

research support from NIH and Industry for thirty years, resulting in many successful studies (including two NIH-sponsored randomized clinical trials) and over 140 papers published in peer-reviewed journals.

Faculty web site: <http://optometry.berkeley.edu/research/overview-bcsdp>

Vision Science 84, Section 3
Visual Perception (1 unit, P/NP)
Professor Susana Chung
Tuesday 4:00-6:00, 394 Minor Hall, CCN: 66415

This seminar will meet the first seven weeks of the semester.

This course will cover some basic visual perception phenomena, such as color perception, aftereffects, and how our eye movements influence what we see. Demos will be used extensively in most of the classes to help students experience the perception, and explanations will be offered to discuss the various perceptual phenomena.

Dr. Susana Chung is a Professor of Optometry and Vision Science. She teaches courses on visual perception to graduate students in the Optometry Program and the Vision Science Graduate Program.

Faculty web site: <http://optometry.berkeley.edu/faculty/susana-chung-od-phd-faa0>