



SPRING 2019

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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

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 October 12, 2018.

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
Researching “Mixed-Race” History and Images in the United States (1 unit, P/NP)
Professor Stephen Small
Wednesday 2:00-4:00, 190 Barrows Hall, Class number: 21316

Class will meet the first 8 weeks at 2 hours per week.

People of mixed racial origins are one of the fastest growing populations in California and across the United States. This course provides an overview of their contemporary circumstances and describes some sources and methods available for studying these populations (including those of mixed Asian, Black, Chicano, Native American or white ancestry). We will review some of the main themes in writings about people of mixed racial origins, and we will examine various sources for identifying mixed race populations, including census, biographies, literature and films. This course will equip students with basic research skills that can be utilized for other projects in African American Studies, Ethnic Studies, History, Sociology, Anthropology and Cultural Studies.

Any and all freshman students welcome.

Prof. Stephen Small, PhD. has taught in the Department of African American Studies since 1994. He teaches courses on public history and collective memory, the African diaspora in Europe and people of mixed racial origins. He wrote his Ph.D. dissertation on people of mixed origins in the Caribbean during slavery; he taught a course in the Department of Ethnic Studies on people of mixed origins; and he has taught this course for the last fifteen years. He is the co-editor of the book *Global Mixed Race*. His father is black and mother white. He was born and raised in Liverpool, England, the city with the longest-standing population of people of mixed race.

Faculty web site: <https://africam.berkeley.edu/people/stephen-a-small/>

Anthropology 24, Section I
Current Issues and Challenges in Japanese Archaeology (1 unit, P/NP)
Professor Junko Habu
Monday 10:00-11:00, 180 Barrows Hall, Class number: 26534

The goal of this seminar is to review new findings and current theoretical and methodological issues in Japanese archaeology, with a focus on prehistoric and early historic periods. It will cover subsistence, settlement and society of prehistoric and historic residents of the Japanese archipelago, as well as biological and cultural diversity among these people. The course also aims to discuss the implications of these archaeological studies on our understanding of Japanese identities. Emphasis will be on the study of food diversity and systems' resilience, networks, social processes, and mechanisms of long-term change. **Those who are interested in archaeological anthropology, Japanese studies and long-term changes in human-environmental interaction are all encouraged to sign up for this course.**

Growing up in Yokoyama City, Japan, I received my BA (1982) and MA (1984) from the Department of Archaeology and Ethnology at Keio University, Tokyo. After working as a full-time Research Associate at the Faculty of Science of the University of Tokyo (1984-1988), I went to Montreal and received my Ph.D.

in Anthropology from McGill University in 1996. In the same year, I joined the Department of Anthropology of the University of California, Berkeley. From Summer 2014 to Summer 2016, I took a research leave from UC Berkeley and led an international transdisciplinary project at the Research Institute for Humanity and Nature titled "Long-term Sustainability through Place-Based, Small-scale Economies: Approaches from Historical Ecology" (<http://www.chikyu.ac.jp/fooddiversity/en/index.html>). As Professor of Anthropology, I regularly teach courses on Environmental Archaeology and Anthropology as well as on East Asian archaeology.

Faculty web site: <https://junkohabu.com/>

Architecture 24, Section I
Design Thinking and Innovation (I unit, P/NP)
Professor W. Mike Martin
Tuesday 1:00-3:00, 370 Wurster Hall, Class number: 20957

Class will be held two hours per week from January 22 through February 19, 2019.

Design thinking and innovation are key drivers of success for many of today's leading industries, companies, and institutions. At the center of these activities are processes of knowledge application and skill referred to as design thinking. This type of thinking is nested in a rich history of forms of inquiry as research paradigms. This course will explore the relationship of design thinking to other forms of thinking strategies, as well as connect thinking to the actions of innovation. Much of our future progress, both today and in the years to come, will result from a culture of creative innovation. An important element of a creative culture is the use of design thinking, specifically, but all forms of inquiry, as a means to unlock the challenges and potential of our actions. Designing represents a powerful set of methods to engage everyday challenges in almost any discipline or profession. The course will focus on ways of thinking as they relate to changing our environment, our organizations, our discipline, etc. In addition, the course will illustrate some of the characteristics of career paths that are at the center of design thinking and innovation.

Professor W. Mike Martin has been at UCB for the past 25 years in the Architecture Department of the College of Environmental Design. He served as the Undergraduate Dean of CED for eleven years and completed a three-year term as Chair of the Architecture Department. Just before retiring, he served as the University of California Systems Education Abroad Director for Scandinavia from 2006-2008 in Copenhagen, Denmark. His teaching and research have focused on the study of the practice of design thinking, collaborative design, work-studies of practice, and storytelling/narrative as a means of knowledge transfer in practice and the academic community.

Faculty web site: <http://ced.berkeley.edu/ced/faculty-staff/mike-martin>

Civil and Environmental Engineering 24, Section I
Waves: Ideal, Real, and In-Between (I unit, P/NP)
Professor Evan Variano
Wednesday 12:00- 1:00, 212 O'Brien Hall, Class number: 27739

Predicting sinusoidal wave motion has been one of the great successes of calculus and is a centerpiece of basic physics. However, many of the wave types observed in nature do not fit into this rather narrow mathematical description. This course will take a broad view of waves, exploring a wide variety of different wave types. Examples will be drawn from fields including biology, ecology, and physics, with a particular emphasis on the water waves encountered in environmental engineering. For each wave type we explore, we will consider the simplified mathematical models that try to capture the essence of the wave. We will explore the limits of these models and discuss the practical implications of making engineering decisions based on idealized models. The class will follow Gavin Pretor-Pinney's armchair science book, "The Wave Watcher's Companion," with supplementary material presented in class to

motivate and support group discussions. **This seminar is part of the Food for Thought Seminar Series.**

Dr. Variano studies fluid motion in the environment, with a special focus on the air-water interface. As an innovator of laboratory techniques, he has found ways to directly observe fluid behavior in new and revealing ways. He uses his measurements to describe the underlying physical processes that control the motion of pollutants, nutrients, and plankton in the world's oceans. The constant tension between observing the world in all its complexity and simplifying it for engineering purposes is what drives his research program; this tension is a central theme that we discuss in the seminar. Undergraduates contribute in significant ways to his research efforts, with several students joining the lab each year. He has also published a paper on best practices for integrating research experiences and classroom learning.

Classics 24, Section I

The *Iliad* of Homer (1 unit, P/NP)

Professor Dylan Sailor

Wednesday 1:00-2:00, 180 Barrows Hall, Class number: 31918

In this seminar, we will read and discuss a landmark of world literature, the epic poem from ancient Greece called the "Iliad." Its events take place over only a few weeks in the tenth year of the legendary Trojan War, and the story turns on the anger of the Greek warrior Achilles and its consequences. In our reading, we will have the opportunity both to learn about the world depicted within the poem, so different from our own, and to see how the poem grapples with problems of enduring relevance, including violence, justice, mortality, human attachment, and the purpose of life. There will be no written assignments in this course; the only requirements are that you 1). complete the weekly readings, 2). think about them, and 3). on the basis of your reading and thinking, contribute actively and constructively to our in-class discussions. **The weekly reading assignments will be quite modest in length, but for our meetings to work it will be important that we have read and thought about the assigned reading; for this reason, it would not be a good idea to take part in this seminar if you are looking for a seminar that does not involve any reading.**

Professor Sailor grew up in western Washington state but has lived in California for many years. He studied Classics and History at the University of Washington and received a PhD in Classics from Berkeley. After finishing his PhD, he taught at UC San Diego in the Literature Department, before coming back to teach in the Classics Department at Berkeley. His research mostly concerns the literature and culture of ancient Rome, and has focused on how the Romans wrote about their own history.

Faculty web site: <http://www.classics.berkeley.edu/people/dylan-sailor>

Comparative Literature 24, Section 2

Literature, Film, and Cultural Disaster (1 unit, P/NP)

Professor Miryam Sas

Wednesday 1:00-2:00, , Class number: 32549

4104 Dwinelle Hall

What happens when catastrophic or traumatic or painful events—war, or exile, or forcefully moving from one country to another—happened to your parents or grandparents, and not to you, but you hear about them over the dinner table, or at odd moments, or sometimes in the silences between their words? Did those events, even if you didn't experience them yourself, have an impact on your mind and heart? Whether it's called "haunting," or whether it shapes your political commitments, or affects you through some secret process of which you are barely aware, this course departs from the assumption that what happened to the generations before you makes a big difference in your life, but that it's hard to know exactly how that difference works. Sometimes, though, that impact can be an impetus for great creativity. We'll read works of fiction, memoir, and view films where the next generation speaks out—and we'll

create some new works of our own. **Creative, smart, excited Berkeley first year students of all backgrounds! This seminar is part of the Food for Thought Seminar Series.**

Miryam Sas is professor of Comparative Literature and Film & Media. The fields of memory studies and post-Holocaust representation have long been among her comparative interests. Her book *Fault Lines: Cultural Memory and Japanese Surrealism* brought models of memory and trauma to intervene in the debates about cross-cultural relations. Her second book, *Experimental Arts in Postwar Japan*, contained a chapter on theatrical representations of Hiroshima and Nagasaki, and her next book project, *Feeling Media*, explores intermedia art and cultural theory, and has a section on contemporary art in the wake of Japan's 3-11 disasters. When she took her qualifying exams in literature, her Professor Edward Kamens commented that he had never met someone less interested in "facts" than she was. In her old(er) age, she has come to find a passion for the historical archive, which means she has at last found a passion for "facts" as well as stories.

Faculty web site: miryamsas.com

Computer Science 24, Section 2
Is the Mind Still a Mystery? (1 unit, P/NP)
Professor Jerome Feldman
Monday 2:00-3:00, 237 Cory Hall, Class number: 28898

The relation between subjective experience (the mind) and the body/brain has been a mystery from ancient times. Recent progress in machine learning (the new AI) has many applications, but has also led to speculation that machines will soon be smarter than people and also have the equivalent of human minds. At the same time, major advances in the behavioral and brain sciences have greatly advanced our understanding of the body/brain and its relation to the physical and social world. The seminar will reexamine the ancient mystery. **Students with both a technical and philosophical interest in the mind/body/world problem. Instructor approval is not requested.**

Over a span of five decades, Jerome Feldman has made significant contributions to many areas of computer and cognitive science and built important systems in cutting edge areas. At Stanford, he was Associate Director of the AI lab and led the vision and robotics effort, which has had a profound impact on all aspects of automation. Upon coming to UC Berkeley as founding Director of ICSI, he established connectionist (neural) computation as a cornerstone of ICSI and this remains central. He was also one of the initiators of the connectionist approach to AI and Cognitive Science. His recent focus is on computational approaches to the famous mind/body problem.

Computer Science 24, Section 3
Rule-Based and Generative Art (1 unit, P/NP)
Professor Josh Hug
Monday 11:00-12:00, 606 Soda Hall, Class number: 32448

Philip Galanter describes Generative Art as "any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art." In this seminar, we'll explore the history and broad landscape of rule-based and generative art, from Brian Eno's deck-of-card-based "Oblique Strategies" to cutting edge uses of AI technology for creating raw audio and video. We will also discuss philosophical notions of complexity, including Kolmogorov complexity and effective complexity. Most importantly, we will create some generative art of our own, mostly in the form of computer programs. No background in programming is required, but it might be nice to have. **I'm hoping for a broad selection of students, not just computer science students. I'm especially hoping to get really artistically minded and aesthetics driven students.**

I'm a little worried that since I'm fairly well known by computer science students that I'll get a class entirely full of CS students. Among freshman, at least, I should be relatively less known, so we're probably fine.

Josh Hug grew up in Texas. It was hot, flat, and there were many terrible insects. In 2004, he came to Berkeley as a PhD student to reverse engineer systems used by bacteria for signal processing and decision making. After graduating in 2011, he moved to New York City to teach at Princeton, and came back to Berkeley in 2014. Prior to his time in Texas he was a dispersion of random molecules, unassembled into any greater being.

Faculty web site: <http://joshh.ug/>

**Earth and Planetary Science 24, Section I
Oceans in the Media (1 unit, P/NP)
Professor Jim Bishop
Thursday 2:00-3:30, 401 McCone Hall, Class number: 22232**

Not one week goes by without major articles about oceans in print/online media such as The San Francisco Chronicle, New York Times, and LA Times. Oceans are a frequent topic of documentary videos. Coverage spans the gamut from the March 2011 earthquake near Japan, resulting in tsunami damage to a nuclear reactor, and subsequent radionuclide releases to the ocean which are still being tracked years later... to James Cameron diving to the deepest Ocean Trench in a novel submarine ... to the latest news on changing climate and Arctic sea ice melting / Antarctic ice shelf breakup... and the 2017 alphabet of hurricanes of destruction. Seminar participants will choose topic areas to be covered, find their own articles, and lead discussion. The aim is to identify and drill down to the sources of the material--in other words, to learn about effective communication and the validation of communication. Students will be graded on active participation and presentations. **The seminar is aimed at freshmen. We need the 1.5 block to enable short field trips and view documentary videos.**

Students will not be able to add this course after the first two weeks of the semester.

Jim Bishop is a Professor of marine biogeochemistry in the Department of Earth and Planetary Science. His research focus is on understanding the role of ocean biology in the control of atmospheric carbon dioxide. He loves going to sea and has logged almost two years at sea during 46 oceanographic expeditions. He and his group design, build, and deploy autonomous ocean profiling robots which have already racked up eight years of continuous observations. For more information regarding Professor Bishop, visit his faculty web page. His August 2016 ocean expedition is covered at <http://oceanbots.lbl.gov>.

Faculty web site: <http://eps.berkeley.edu/people/jim-bishop>

**English 24, Section I
Emily Dickinson (1 unit, P/NP)
Professor Bryan Wagner
Monday 1:00-2:00, 180 Barrows Hall, Class number: 31827**

We will be reading and discussing extraordinary poems by Emily Dickinson.

Bryan Wagner is Associate Professor in the English Department at the University of California, Berkeley. He received a PhD in English from the University of Virginia before coming to Berkeley in 2002. His research focuses on African American expression in the context of slavery and its aftermath, and he has secondary interests in legal history and urban studies. He has published *Disturbing the Peace: Black Culture and the Police Power after Slavery* (Harvard University Press, 2009) and *The Tar Baby: A Global*

History (Princeton University Press, 2017). A book on The Wild Tchoupitoulas—a landmark album of processional call-and-response music arranged as electric funk—is forthcoming in the 33 1/3 Series from Bloomsbury. A critical edition, *The Life and Legend of Bras-Coupé: The Fugitive Slave Who Fought the Law, Ruled the Swamp, Danced at Congo Square, Invented Jazz, and Died for Love*, is forthcoming from LSU Press. Current research includes a collaborative cartographic digital archive, Louisiana Slave Conspiracies, and a multimedia project on the political culture of Reconstruction.

Faculty web site: <https://english.berkeley.edu/profiles/74>

**Environmental Science, Policy, and Management 24, Section I
Issues in Natural Resource Conservation (1 unit, P/NP)**

Professor David Wood

Friday 10:00-11:00, Genetics & Plant Bio 104, Class number: 27158

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; fracking; global warming and geoengineering; and many more topics to be selected by the students.

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. In 1995 he was awarded the Berkeley Citation for distinguished service to the University.

Among his numerous publications, he recently co-authored three research papers, one that is published in *Forest Ecology and Management*, one in *Forest Science* and one in *Environmental Entomology*.

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

Global Studies 24, Section I

Diversity, Identity, and Social Justice: America in Global Perspective (1 unit, P/NP)

Lecturer Darren Zook

Tuesday 2:00-3:00, 210 Dwinelle Hall, Class number: 25519

Diversity is perhaps the most important social issue in America. As a concept, diversity includes and relates to a number of other issues, such as racism, discrimination, social justice, immigration, marginality, integration, and so forth. Many a program has been put in place to address these issues, in the hope that, over time, America would come together and make all of its differences work collectively as one harmonious and integrated society. For some people, this is already happening. For others, America seems more divided now than ever, and diversity has failed to deliver on its promise.

This seminar will delve into the complexities of this thing we call diversity, to explore the rhetoric and the reality of diversity as it currently exists in America. We will do this by reading accounts of diversity as it happens—not just in the news but also in a variety of different media—and then learning how to discuss critically the central issues of diversity. The goal is not just to talk about diversity, but also to learn how to talk about diversity in ways that are both critical and constructive. Diversity is an extraordinarily sensitive issue, and too many people simply avoid the conversation to avoid the discomfort that might ensue.

Darren Zook has been a member of the faculty at the University of California, Berkeley, since 2000. He teaches in International and Area Studies and in Political Science. He has taught previously at the University of California, Davis, and at the Claremont Colleges in southern California. In 2012, he was a

Fulbright Research Scholar in Singapore working on a project that focused on cybersecurity in the Asia-Pacific region.

During his time at the University of California, Berkeley, Darren Zook has taught and published on a wide variety of topics, including the politics of the Asia-Pacific region, human rights and international law, terrorism and security studies, multiculturalism and diversity, and economic policy with a focus on anti-corruption programs. His research interests have continuously grown into an unusually broad portfolio of international and comparative projects, and his work has taken him to various parts of Asia, the Pacific Islands, and northern Europe.

Zook has recently published a four-book series, entitled *Ourselves Among Others: The Extravagant Failure of Diversity in America* and *An Epic Plan to Make It Work*, which is an engaged critique of current diversity policy and practice in the United States and elsewhere in the world.

Global Studies 24, Section 2

Global South Capitalism in the NY Times: Reading like an Anthropologist (1 unit, P/NP)

Lecturer Clare Talwalker

Wednesday 2:00-3:00, 180 Barrows Hall, Class number: 26644

This Global Studies Freshman Seminar will examine the media itself as a powerful shaping influence on our view of the world and the global market. It will also introduce students to the scholarly discussion of capitalist transformation. Open only to freshmen, this seminar will consider how the media covers the economies of the Global South through daily reading of the New York Times. Where news coverage favors an economistic approach (focusing on such things as markets, international trade, labor conditions, consumers), we will learn about different terms for these same topics offered up by a social and cultural lens.

Clare Talwalker is a continuing lecturer in International and Area Studies and core faculty of the Global Poverty and Practice Minor. She is also co-editor of a UC Press book series *Poverty, Interrupted*. Trained in cultural anthropology, she focuses her research on India, social inequalities and postcoloniality. She has recently written about student engagement in aid work and poverty alleviation. She offers classes on ethnographic methods, global poverty and practice, political economy, and the anthropology of India. Talwalker grew up in Mumbai, India. She earned her B.A. at Dartmouth College and her Ph.D. at Duke University.

Global Studies 24, Section 3

The Great Global Energy Transformation: Oil, Natural Gas, Nuclear and Renewables. Is Energy Driving Politics or Is Politics Driving Energy? (1 unit, P/NP)

Lecturer Peter Bartu

Thursday 5:00-6:00, 104 GPB, Class number: 32278

This seminar explores the current global energy transformation and the roles and responses to it by China, Russia, the United States, Saudi Arabia, Iran and others. Students will be introduced to how the energy sector is also transforming everyday politics and changing the 'rules of the game' in the Middle East and other fields such as sanctions, cryptocurrencies and bitcoin. Course materials will feature short readings, podcasts and video interviews with energy industry leaders and analysts.

Dr. Peter Bartu teaches courses at the University of California, Berkeley on Political Transitions in the Middle East, the Gulf States, and International Organizations & Global Governance. He has worked with the United Nations in a variety of roles throughout the Middle East including as a member of the UN's stand-by mediation team in Benghazi and Tripoli during the Libyan revolution. In 2008-2009 he led a United Nations team that produced a seminal report on the disputed internal boundaries between the Arabs and the Kurds in Iraq including Kirkuk. He has worked as a foreign policy advisor in the Australian

Prime Minister's Department and the Sydney Organizing Committee of the Olympic Games and in his spare time enjoys open water swimming at the Dolphin Club in San Francisco.

Integrative Biology 24, Section 1

Ethnobiology, Nutrition, and Global Food Systems (1 unit, P/NP)

Professor Thomas Carlson

Wednesday 10:00-11:00, 4110 Valley Life Sciences Building, Class number: 22625

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 and animal species. We will also compare the nutritional qualities, health effects, and carbon footprint of conventional industrial food, organic food, locally grown food, and food that is hunted or gathered. In this seminar we will read Michael Pollan's *Omnivore's Dilemma* and view the documentary film *Food Inc.* **Any interested Freshmen are welcome.**

Thomas Carlson is a physician and ethnobotanist who is on the faculty of the Department of Integrative Biology and is Curator of Ethnobotany in the University and Jepson Herbarium at the University of California, Berkeley. He has conducted food plant and medicinal plant research with, and provided medical care for, over forty different ethno-linguistic groups in fifteen different countries in South America, Central America, North America, Africa, Asia, and Pacific Islands. Tom's multidisciplinary work with diverse institutions, biocultural environments, and communities has helped illuminate how local indigenous ethnobotanical systems contribute to human health and ecosystem health.

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

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, Class number: 22626

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 Associate 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

Animal Navigation: Which Way is Home? (1 unit, LG)

Professor Roy Caldwell

Monday 2:00-3:00, 5192 VLSB, Class number: 22627

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. 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. At the end of the semester each student will write a short scientific paper presenting the results of the class experiment. The seminar is designed for students interested in biological research. Registration for this seminar is limited to 15 students.

The seminar is designed for students interested in biological research.

My research interests lie in invertebrate behavior and ecology with much of my work centered 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 functions of aggression. More recent research expanded to include the evolution of mating systems, interspecific communication, sensory ecology, prey selection and the biomechanics of the strike. 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 behavior of several species. Much of my research has centered in the tropics including programs at Lizard Island, Moorea, Panama and Indonesia.

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

Integrative Biology 24, Section 4

Marine Ecosystems in Peril (1 unit, P/NP)

Professor Wayne Sousa

Monday 3:00-4:00, 5192 VLSB, Class number: 22628

Marine ecosystems are experiencing severe stress and disturbance from a variety of human activities, including climate change (warming temperatures, acidification, intensification of storms, and sea-level rise), coastal development (including mariculture), pollution, over-exploitation of resources, and introductions of non-native species. This seminar will examine case studies of these phenomena and others, and explore ways of reducing their impacts or restoring already damaged habitats. We will draw our information primarily from peer-reviewed scientific literature. A weekend field trip to a marine habitat will illustrate some of the harmful local impacts of human activities. **I'm looking for students with an interest in ecology and environmental science. Prior knowledge of marine habitats and organisms is not a requirement.**

I have been a faculty member at Berkeley since 1977, first as a member of the Zoology Department, and now Integrative Biology. My early research was on the response of seashore communities to natural disturbances. I then studied salt marsh host-parasite interactions, focusing on the host snail, *Cerithidea californica* and its larval trematode parasites. I am now investigating the biological and physical factors that structure tropical mangrove forests on the Caribbean coast of Panama.

Faculty web site: <https://sousalab.squarespace.com/>

Integrative Biology 24, Section 5
The Emergence of Infectious Disease (1 unit, P/NP)
Professor Michael Boots
Wednesday 4:00-5:00, 5192 VLSB, Class number: 32219

The emergence of new and the re-emergence of known infectious diseases continues to cause devastating epidemics, not only in human populations, but also in agriculture and wildlife. Where do they come from? Why do they emerge? Can we predict the next one? How virulent are they likely to be? This seminar will discuss these questions in the context of evolution and ecology.

My research focuses on the ecology/epidemiology and evolution of infectious disease. Parasites and pathogens continue to cause a major burden to human health, cause significant damage in agriculture, and are ubiquitous in nature. The overall aim is to understand the evolution of parasites, of host defense and how infectious organisms spread, persist and affect their host populations. We use a combination of evolutionary theory, experimental host-parasite systems, epidemiological models of wildlife and human tropical disease, and field entomology.

Integrative Biology 24, Section 6
The Darwinian Revolution (1 unit, LG)
Professor Brent Mishler
Thursday 10:00-11:00, 4110 Valley Life Sciences Building, Class number: 32284

The Darwinian Revolution was one of the greatest upheavals in human thought, involving the very basis of our self-awareness: Where did we come from? What is or should be the basis for our ethics and social behavior? Where are we going? Topics to be considered include the historical antecedents of Darwin's theories; the scientific evidence for evolution and natural selection; the impact of Darwinism on religion, social theory, and ethics; later scientific developments and recent challenges by latter-day creationists. The goal is to use these interdisciplinary topics as an exemplar of scientific methods and change, and of the unsteady relationship between science and the public. In addition to attending and participating in each week's lecture/discussion, each student will be required to write a short paper (five pages maximum) due at the end of the semester.

Brent Mishler is Director of the University and Jepson Herbaria at the University of California, Berkeley, as well as a professor in the Department of Integrative Biology, where he teaches phylogenetic systematics and plant diversity. He received his Ph.D. from Harvard University in 1984, and was on the faculty at Duke University in Durham, NC for nine years before moving to UC Berkeley in 1993.

Faculty web site: <http://ucjeps.berkeley.edu/people/mishler.html>

Integrative Biology 24, Section 7
Bay Area Natural History by Walks, Bicycle, and Public Transit (1 unit, P/NP)
Professor Ellen Simms
Wednesday 2:00-3:00, 5192 VLSB, Class number: 32436

For this seminar on natural history of the San Francisco Bay area, we will read about and discuss and write about several topics, including organisms found in the Bay Area, how the Bay was almost filled in, the conservation efforts that saved it, and recent efforts to re-expand the Bay and restore wetlands. We will also cover impending threats to the Bay, such as oil spills, climate change and sea level rise. Weekly meetings will include walks around campus and classroom discussions and will be supplemented with two day-long local field trips by bicycle and/or public transit. Students must know how to ride a multi-gear bicycle and be willing to wear a bicycle helmet. It might be possible to rent an appropriate bicycle.

Students who wish to rent a bicycle should contact the instructor before registering for the seminar so that we can explore that option.

Ellen Simms is an evolutionary ecologist who studies the evolution of biotic interactions. She is a faculty member in Integrative Biology and her current research focuses on plants, cooperative microbes, and enemies of those microbes. Her lab studies how soil microbial communities affect the success of invading plant species and how plant-microbe interactions influence ecosystem function. When she is not working, she bicycles and kayaks throughout the Bay Area and beyond.

Faculty web site: www.simmslab.org

**Linguistics 24, Section I
Language Myths (I unit, P/NP)
Professor Larry Hyman
Monday 9:00- 10:00, 263 Dwinelle Hall, Class number: 22872**

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 that 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, and has recently served as President of the Linguistic Society of America. 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

**Materials Science and Engineering 24, Section I
Materials and Weapons of War through History (I unit, P/NP)
Professor J. W. Morris Jr.
Friday 10:00- 11:00, TBA, Class number: 28305**

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

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

Faculty web site: <http://www2.mse.berkeley.edu/ourfaculty/morrisj>

Materials Science and Engineering 24, Section 2
Physics and Materials Science of Skateboarding (1 unit, P/NP)
Professor Daryl Chrzan
Thursday 10:00-11:00, 350 Hearst Mining Building, Class number: 28306

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

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

Faculty web site: <http://www2.mse.berkeley.edu/ourfaculty/chrzand>

Mathematics 24, Section 1
Using Random Walks in the Physical and Social Sciences (1 unit, P/NP)
Professor F. Alberto Grunbaum
Thursday 10:00-12:00, 939 Evans Hall, Class number: 23023

Class will meet for 2 hours on Thursdays for the first seven 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>

Media Studies 24, Section 1
Watts to Wakanda: "Blaxploitation" Cinema 1971-1989: the forerunner of "Black Panther" (1 unit, P/NP)

Professor William J. Drummond
Monday 1:00-2:00, 106 Mulford Hall, Class number: 23472

The 1970s ushered in the “blaxploitation” movie genre. These motion pictures were memorable because of the funk and soul sound tracks, and they gave employment to talented black actors. But their content was often violent and upsetting. Variety credits Sweetsweetback’s Badasssss Song and Shaft, both released in 1971, as the pioneers in this brand of cinema, which was pitched primarily to African American audiences. The movies were popular in black communities, but were criticized as playing up racial stereotypes and lending credence to a theme of black pathology. The class will explore the genre in viewings, readings, discussions and critiques. **Students interested in African American history as well as cinema. 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. He has worked as an adviser to the San Quentin News since 2011. In 2014 San Quentin News was awarded the James Madison Freedom of Information Award from the Society for Professional Journalists for its work in raising the public’s awareness about mass incarceration. From 1979 to 1983 Prof. Drummond 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/>

Molecular and Cell Biology 90E, Section I
Matter, Mind, Consciousness (1 unit, P/NP)
Professor David E. Presti
Thursday 2:00-3:00, 107 Mulford Hall, Class number: 19745

All we know comes to us via our mental experience: our thoughts, feelings, perceptions, and conscious awareness. However, it is a deep mystery as to how the physical processes of our brain and body are related to the subjective experience of consciousness. Investigation of this mind-body connection is among the most profound challenges in all of science, impacting everything about who we believe we are and how we relate to the rest of what we call reality. While biophysical science has made great progress in understanding the structure and function of brains and bodies, the nature of consciousness remains in many ways as deeply mysterious today as it was centuries ago. I argue that revolutionary ideas will be required in order to take a science of consciousness to a place of deeper insight. We will address this question from the perspectives of biology, philosophy, physics, psychology, and sociology—cognitive science, broadly defined. **Students interested in all areas of the arts, humanities, and sciences are encouraged to enroll.**

David Presti has taught neuroscience at UC Berkeley for twenty-eight years. For the past fifteen years, he has also been teaching neuroscience to Tibetan monks and nuns in India, Bhutan, and Nepal. He is author of Foundational Concepts in Neuroscience: A Brain-Mind Odyssey (2016) and of Mind Beyond Brain (2018).

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

Natural Resources 24, Section I**Global Environment Theme House Freshman Seminar (1 unit, P/NP)****Professor Kate O'Neill****Monday 5:30-6:30, Clark Kerr Campus, Building I, Class number: 27345**

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.**

Kate O'Neill joined the Department of Environmental Science, Policy and Management at UC Berkeley in 1999, specializing in the field of global environmental politics and governance. She writes on the ever-changing nature of global environmental challenges and our responses to them, on environmental activism and social movements, and on the global political economy of wastes. She teaches upper division and graduate courses in International Environmental Politics, and is a leading faculty advisor in the Conservation and Resource Studies Major in the College of Natural Resources. She holds a Ph.D. in Political Science from Columbia University, and is a co-editor of the journal *Global Environmental Politics*. She is currently the Resident Faculty member in Unit 2.

Nuclear Engineering 24, Section I**How It's Made (1 unit, P/NP)****Professor Peter Hosemann****Friday 10:00-11:00, 31 Evans Hall, Class number: 28400**

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 be encouraged to participate in the campus-offered machine-shop training where basic skills in machining are taught after a short introduction by the professor to the shop tools.

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.

Nuclear Engineering 24, Section 2**Radioactivity and Society: The Good, the Bad and the Ugly (1 unit, P/NP)****Professor Eric Norman****Thursday 9:00-10:00, 31 Evans Hall, Class number: 28401**

Ever since its discovery over a hundred years ago, the phenomenon of radioactivity has had profound effects on our society. From Madam Curie to Homer Simpson, radioactivity has been the subject of much fact and fiction. In this seminar, we will examine the history of radioactivity, its uses in medicine, industry, and space exploration, as well as the ways in which society has viewed this often misunderstood physical phenomenon. **This course is designed for any student interested in becoming better informed about both the positive and negative aspects of radioactivity and its influences on society.**

Eric Norman is an Emeritus Professor of Nuclear Engineering. Professor Norman taught both undergraduate and graduate level courses in nuclear physics in the Nuclear Engineering Dept. from 2006 to 2014. Previously he worked as an experimental nuclear scientist at Lawrence Livermore and Lawrence Berkeley National Laboratories. His research interests include neutrino physics, nuclear astrophysics, and nuclear forensics for non-proliferation and national security. He is a fellow of the American Association for the Advancement of Science and the American Physical Society.

Faculty web site: www.nuc.berkeley.edu/people/eric_norman

Nutritional Sciences 24, Section I
Martial Arts Movies and Survival at Cal (1 unit, P/NP)
Professor George Chang
Wednesday 10:00- 12:00, Media Resources Center, Moffitt Library, Class number: 27382

This seminar is for students who love watching martial arts movies and using the martial arts spirit for surviving and thriving in a competitive university like Cal. Over the semester we will watch films ranging from "Seven Samurai" to "Kung Fu Panda." From "Shaolin Temple" to "Police Story." From "Fists of Fury" to "Kill Bill." While our focus will be on martial arts films, our discussions will inevitably include mentorship, study skills, and the secrets of mastering the STEM disciplines. After each viewing, a team of students will research the film, present their findings in class, and then lead a discussion. Later we can continue our discussions over lunch in the Unit Three Dining Commons. I will provide meal passes for students who do not have meal plans. Between class meetings we will use Facebook for sharing thoughts, ideas, and video links. Judging from past experience, our Facebook connections will continue for years as students share the ups and downs of college and life after graduation. **This seminar is part of the Food for Thought Seminar Series.**

Professor Chang received an AB degree in chemistry from Princeton and a PhD in biochemistry from UC Berkeley. He has been teaching at Cal since 1970. In 2005, he moved into a residence hall and became the first professor in the UC Berkeley Faculty in Residence Program. He has had several great mentors, and he has worked to mentor Cal students, both in person and in the Social Media. His Facebook group, "STUDY TIPS and OTHER GOOD THINGS," has over 25,000 members. He invites students to join.

Physics 24, Section I
Magnets: Science, Technology, and "Magic Tricks" (1 unit, P/NP)
Professor Frances Hellman
Friday 11:00- 12:00, 397 Le Conte Hall, Class number: 24059

Magnets and magnetic fields are essential to almost every aspect of our lives, from the most fundamental science experiments, to medical applications like the MRI, to computers and cars and navigation, to beautiful effects like the aurora borealis. The earth's magnetic field has made navigation possible for thousands of years, and keeps life on our planet safe from energetic particles coming from the sun and beyond. Magnetism has been known to exist for thousands of years, and yet requires twentieth-century physics (quantum mechanics) to understand the basic principles, such as what makes iron magnetic. Many Nobel Prizes have been given for discoveries related to magnetism, and magnets also make some of the best and most fun "magic tricks" or demonstrations. Magnetism is found on the tiniest scale (electrons)

and the largest (galaxies). We will learn what makes iron magnetic, and copper not magnetic. I will show why a magnet pushes away a superconductor, which makes levitated trains possible, but how the strongest magnetic fields are produced by superconducting magnets. We will discuss why there are magnets in a car's starter motor, and in computer hard drives, and where current research efforts are. We will also talk about some of the most exciting topics in modern magnetism, such as what happens when you try to make magnets really small (a field known as "nanomagnetism") or when you try to blend together magnets and semiconductors ("spin electronics"). **This seminar is intended for anyone with an interest in understanding some science that is all around us. This seminar is part of the Food for Thought Seminar Series.**

Frances Hellman is Professor of Physics and of Materials Science and Engineering, a Senior Scientist at Lawrence Berkeley National Laboratory, and Dean of Mathematical and Physical Sciences at UC Berkeley, where she oversees the departments of Astronomy, Earth and Planetary Science, Mathematics, Physics, and Statistics. She is an expert in novel magnetic, semiconducting, and superconducting materials, especially in thin-film form. She is also a visiting scientist at the San Francisco Exploratorium, where she goes whenever possible to work with them on exhibits, some of them involving magnets. She received her BA in Physics from Dartmouth College and her PhD in Applied Physics from Stanford University. Before joining the Berkeley faculty in 2005, she held positions at AT&T Bell Labs and UC San Diego. Her faculty office is filled with magnets, and her laboratory is her workshop, where she delights in devising experiments on magnetic materials composed of rare and exotic ingredients.

Political Economy 24, Section I
Political Economy in Contemporary Perspective (1 unit, P/NP)
Senior Lecturer Alan Karras
Wednesday 3:00-4:00, 211 Dwinelle Hall, Class number: 24233

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 should expect vigorous engagement and critical thinking.

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 is currently the Lead Media Author for the concise edition of a World History textbook, an author of the AP edition of the same book, and is also engaged in researching corruption in the British East India Company. He 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 *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 global issues in political economy.

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

Psychology 24, Section I
The Shattered Mind (1 unit, P/NP)
Professor Mark D'Esposito
Monday 11:00-12:00, 45 Evans Hall, Class number: 25568

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 would like to limit this to intended psychology, cognitive science or neurobiology majors; however, exceptions would be possible with my approval.**

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>

Rhetoric 24, Section I

Fake News (and Statistics, and Art, and IDs etc.) (1 unit, LG)

Professor Daniel F. Melia

Monday 1:00-2:00, 7415 Dwinelle Hall, Class number: 25436

"Fake News," which can often be shown to be not fake at all, is itself news today. Since lying and "spin" have been part of politics (and selling of all kinds) since the dawn of primates (the famous gorilla, Koko, lied to her keepers), why is it now news? What kind of world would it be if we lost all trust in the intent of others to tell us the truth in important matters? This course will examine the rhetoric of public lying and its philosophical context. **Any student interested in the subject of public truth and its evaluation would be welcome. There will be some reading (Sissela Bok, "Lying," and Darrell Huff, "How to Lie with Statistics").**

Daniel Melia is Professor Emeritus in the Department of Rhetoric, where he has taught for forty-three years.

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

Spanish and Portuguese 24, Section I

Introducing Brazil: History, Literature, Film (1 unit, P/NP)

Professor Candace Slater

Tuesday 1:00-2:00, 225 Dwinelle Hall, Class number: 31867

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 good idea of its shifting identities. **Students do not need to have any sort of prior background. Some familiarity with Latin America is welcome but by no means required. All readings and discussions will be in English.**

Candace Slater teaches Brazilian literature and culture, as well as courses on the Amazon, in the Department of Spanish and Portuguese. She has a secondary affiliation with the Energy and Resources Group. She is the author of seven books and many articles and has traveled widely throughout Latin America and the Iberian Peninsula.

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

Vision Science 24, Section I

The Human Eye (1 unit, P/NP)

Professor Richard C. Van Sluyters

Friday 2:00-4:00, 491 Minor Hall, Class number: 29539

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 a standard clinical instrument to view the eye will be demonstrated. Students will then employ this instrument to observe one another's eyes. Digital images of the iris will be captured and provided to each student. Examples of the types of 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? What structural and functional changes in the eye are found in various ocular diseases?

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. Some of these courses fulfill Letters and Science breadth requirements; for details 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.

Computer Science 39, Section I

Symmetry and Topology (2 units, P/NP)

Professor Carlo Sequin

Monday 4:00-6:00, 606 Soda Hall, Class number: 30990

Symmetry plays an important role in art, fashion, architecture, engineering, computer modeling, biology, and in all the sciences in general; as well as in music, poetry, and psychology. We will explore its use in several of these domains. We will enumerate all possible types of symmetry and establish a rigorous understanding of them. We will start with simple mirror images, proceed through wallpaper patterns and hyperbolic tilings, finishing up with the symmetry of 4-dimensional "Platonic" solids.

Topology focuses on the connectivity of objects or of abstract constructions; it is important in the design and analysis of complicated shapes. It also allows us to extend the notion of symmetry to the interconnectivity of networks and to "regular maps" on surfaces of arbitrary genus (smooth donuts with one or more holes). We will get familiar with all surfaces of low genus, including Moebius bands, cross-caps, and Klein bottles.

The goal of this course is to give the participants a good enough understanding of the basic principles of symmetry and topology so they can put this knowledge to good use in their future studies. This course, even though offered by the CS Division, will involve no computer programming, but will occasionally ask participants to construct models from paper, clay, or pipe-cleaners. **Students should have an interest in geometry and its many applications in art, architecture, engineering, and most domains of design. They should enjoy some abstract mathematical thinking and should not be adverse to using precise formulations to clarify some "fuzzy" concepts.**

Students are welcome from many departments. In the past I have had students from EECS, ME, CE, IEOR, BioE, Math, Physics, Architecture, Art Practice, ...

Students should have some love for geometry and abstract mathematical thinking.

Carlo H. Séquin has been a professor in the EECS Computer Science Division since 1977. He has taught courses concerning the design of integrated circuits, micro processors, campus buildings. He has also taught courses on geometric modeling with hands-on assignments in the design and fabrication of mechanical puzzles, artistic maquettes, and mathematical visualization models. Outside of the classroom he has made use of symmetry and topology in the layout of solid-state image sensors at Bell Labs, in the design of the first RISC (reduced instruction set computer) chips with Professor Dave Patterson (CS), in the conception and construction of Soda Hall, the current home of the CS Division, and in the generation of various large-scale geometrical sculptures with artist Brent Collins from Gower, MO.

Faculty web site: <https://people.eecs.berkeley.edu/~sequin/>

Earth and Planetary Science 39, Section I

Earth Science in the Field (2 units, LG)

Professor Hans-Rudolf Wenk

Wednesday 5:00-6:00, 325 McCone Hall, Class number: 31984

The first meeting will be Wednesday, January 16, 2019 from 5:00-6:00 pm (first week of classes) in 325 McCone Hall. There will be two meetings during the next two weeks, same time, same space. The field trip has not been scheduled yet.

Students have an opportunity to learn about the Earth through direct field observation. The main part is a four-day field trip that introduces a variety of geological issues ranging from the evolution of California to rock-forming processes, earthquakes, environmental concerns, mining and water management. A fee is required to cover the cost of transportation and food. Students enrolled in this course will need a tent and sleeping bag for the field trip. Freshmen and sophomores only!

The seminar consists of introductory lectures about geology, with an emphasis on California. The main part of the course will be a four-day field trip (Thursday-Sunday) some time in March or early April (exact dates will be determined in December). The field trip involves some strenuous hiking, and camping. **This class is generally highly oversubscribed and freshmen in physical science are given priority. Please fill out the questionnaire below. It will be used for admitting you to this freshman seminar. Course Application: <https://tinyurl.com/eps39-SPI9>**

Hans-Rudolf Wenk is a Professor of Geology. He joined the Department of Earth and Planetary Science in 1967. His research is in crystallography, mineralogy, structural geology and rock deformation. For more information regarding Professor Wenk, please visit his faculty web page at <http://eps.berkeley.edu/people/hans-rudolf-wenk>.

German 39P, Section I

Law and Literature (4 units, LG)

Professor Chenxi Tang

Tuesday and Thursday 12:30-2:00, 189 Dwinelle Hall, Class number: 30533

For many people, law is the subject of law school, while literature belongs to the humanities. In this seminar, we will see that law and literature, professional school and the humanities, are in fact closely related. We will read some great authors in world literature (including Aeschylus, Sophocles, Shakespeare, Melville, Kleist, Kafka), watch a number of classic films, and discuss how they engage with the key issues of law—legitimacy and legality, justice and equity, rights and obligation, crime and punishment. At the same time, we will read legal texts and see how law operates by telling stories.

This seminar may be used to satisfy the Arts and Literature or Philosophy and Values breadth requirement in Letters and Science.

Chenxi Tang studied comparative literature, German literature, and philosophy at Peking University, Ludwig-Maximilians-Universität Munich, and Columbia University (PhD 2000). He taught at the University of Chicago before joining the Berkeley faculty in 2007. Professor Tang's research and teaching interests include modern German literature and intellectual history, legal humanities, and comparative literature.

Faculty web site: <http://german.berkeley.edu/author/ctang/>

History 39V, Section I

Science, Environment and European Colonialism (4 units, LG)

Professor Angelo Caglioti

Wednesday 10:00-12:00, 78 Barrows Hall, Class number: 32251

Science and colonialism were driving forces in the making of the global and interconnected world where we live today. The history of "Western science" is deeply intertwined with Europe's encounter with the world, as colonialism provided the laboratory for disciplines such as geography, natural history, medicine,

and anthropology. The challenges and opportunities of new natural environments shaped the way Europeans explored, analyzed, and studied nature and society. The circulation of specimens, data, and scientific expertise made colonial governance possible. This course will introduce students to major themes regarding the relationship between science, colonial environments and European empires. **The ideal students for this class should be interested in globalization as a history of cultural connections, in science as a set of practices, and in interdisciplinary connections. The class does not require previous knowledge of a specific discipline** This seminar may be used to satisfy the Historical Studies or Social and Behavioral Sciences breadth requirement in Letters and Science.

Angelo Caglioti is a Visiting Lecturer in History of Science at the University of California, Berkeley. After receiving his PhD in History at Berkeley in 2017, he joined the Max Weber Post-Doctoral Programme at the European University Institute (Florence, Italy) and was awarded a 2018/2019 Rachel Carson Center Fellowship in Environment and Society from the Ludwig-Maximilians Universität (Munich, Germany). His work combines the approaches of history of science, environmental history, and modern European history, with particular focus on the history of scientific knowledge and its relationship with European imperialism and scientific racism. He has recently published the article "Race, Statistics, and Italian Eugenics" in the *European History Quarterly* in 2017.

History 39W, Section I
Warfare in the Middle Ages (4 units, LG)
Professor Geoffrey Koziol
Tuesday 10:00- 12:00, 3205 Dwinelle Hall, Class number: 32250

This class will examine different aspects of warfare from the Germanic invasions of the fourth and fifth centuries through the Hundred Years War of the fourteenth and fifteenth centuries. We will also discuss the Viking invasions (especially in England), the Third Crusade, weaponry, army recruitment and size, castle construction, and siege weaponry and tactics. Special attention will be given both to the details of logistics and warfare's broader social and political contexts, as well as the role of warfare in the development of states. This seminar may be used to satisfy the Historical Studies breadth requirement in Letters and Science.

Professor Koziol specializes in the study of religion, power, and ritual in medieval Europe. He also has broad interests in ethnology. In addition to classes on medieval history, he has also taught courses on The Da Vinci Code, the problems of writing biographies, and ritual.

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

History of Art 39G, Section I
Humanists on the Move (2 units, LG)
Professor Elizabeth Honig
Wednesday 10:00- 12:00, 230 Mulford Hall, Class number: 32392

This class is about Renaissance humanists and how we can use digital means, as well as traditional ones, to study them. Our particular focus is on the ways people were connected in the Renaissance—as patrons, as readers, as travelers, as correspondents. Students will gather data about the travels and connections of their individual humanists. Then, working in groups, they will form databases and use mapping and network analysis on their data to chart interconnections among these historical figures over time. Figures to be studied will include Leonardo da Vinci, Erasmus, Durer, Isabella d'Este, Henry VIII, and other patrons, artists, and writers of this period. **Students who love the Renaissance, in any way shape or form. Even liking historical novels about the wives of Henry VIII counts!**

Elizabeth Honig teaches the History of Art and, sometimes, in the English department as well. Her specialties are painting, urban culture, pageantry and literature in northern Europe, especially in the

sixteenth century. She is also interested in the digital humanities. This year she published a book on the Flemish painter Jan Brueghel (son of the more famous Pieter Bruegel), and you can also see her research website on the artist at janbrueghel.net.

Faculty web site: <http://arthistory.berkeley.edu/person/1639585-elizabeth-honig>

Legal Studies 39D, Section 1
Current Political and Moral Conflicts and the U.S. Constitution (2 units, LG)
Mr. Alan Pomerantz
Thursday 10:00-12:00, 106 Wheeler Hall, Class number: 19722

The debate about politics and 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," a supreme authority, not a supreme court. Others argue as strongly that the Court has acted properly to find and protect evolving 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 transgender and gay rights (including gay marriage); "sincerely held religious beliefs" as a defense to compliance with anti-discrimination laws; abortion; privacy; limitations on speech including "hate" speech, college speech codes, trigger warnings and micro-aggressions; and euthanasia. We will read Supreme Court cases, as well as political and legal commentary from across the political spectrum. The prime focus of the seminar is to encourage students to develop their critical thinking skills. Accordingly, students are expected to develop, support and defend their own views and opinions regarding the relevant topics.

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 under the Fulbright Program 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. He is also the recipient of the 2015 Fulbright Commission Global Citizens Award, and the 2016 Global Award for his legal work. Mr. Pomerantz has participated in important and controversial matters affecting individual rights, including the right of public artistic expression, the right of privacy for acts of consenting adults, and numerous free speech cases.

Legal Studies 39D, Section 2
Current Political and Moral Conflicts and the U.S. Constitution (2 units, LG)
Mr. Alan Pomerantz
Thursday 2:00-4:00, 7 Evans Hall, Class number: 19723

The debate about politics and 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," a supreme authority, not a supreme court. Others argue as strongly that the Court has acted properly to find and protect evolving 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 transgender and gay rights (including gay marriage); “sincerely held religious beliefs” as a defense to compliance with anti-discrimination laws; abortion; privacy; limitations on speech including “hate” speech, college speech codes, trigger warnings and micro-aggressions; and euthanasia. We will read Supreme Court cases, as well as political and legal commentary from across the political spectrum. The prime focus of the seminar is to encourage students to develop their critical thinking skills. Accordingly, students are expected to develop, support and defend their own views and opinions regarding the relevant topics.

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**South and Southeast Asian Studies 39, Section I
Southeast Asian Performing Arts (2 units, LG)**

**Dr. Maria Josephine Barrios-Leblanc, Ms. Cynthia Aban and Ms. Ninik Lunde
Tuesday 9:00- 11:00, 279 Dwinelle Hall, Class number: 1734 I**

The course focuses on Southeast Asian performance—the music of Vietnam, Indonesian dances, and Philippine theater and music. Discussions shall be guided by the following questions: How have geography, religion, social structures, customs, and beliefs shaped indigenous performing art forms? How are performing traditions revitalized in contemporary times? How have experiences of colonialism and social movements informed the work of performing artists? How can we read/view these works today? **We hope to attract students interested in one, both, or all of the following: the Southeast Asian region, the performing arts (music, dance, theater), and history.**

Maria Barrios-Leblanc has a Ph.D. in Filipino (Philippine Literature) from the University of the Philippines (UP). Before coming to UC Berkeley, she served as Associate Professor and Associate Dean of the UP College of Arts and Letters. She has written/edited more than a dozen books including language textbooks, poetry collections and research on Philippine drama and literature.

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

Cynthia Aban is a singer and kulintang player with the multi-awarded performing band Grupong Pendong which utilizes indigenous instruments in creating contemporary music. Before coming to UC Berkeley, she was a Ph.D. student at the University of the Philippines studying Filipino psychology.

Faculty web site: <http://sseas.berkeley.edu/people/faculty/chat-aban>

Ninik Lunde has a Master's degree in Linguistics from the University of Wisconsin. She taught Indonesian language at UW Madison for five years and has been teaching beginning and intermediate Indonesian since 1993 at UC Berkeley. She has created audio-visual materials for her classes. Her academic interests include linguistics and comparative literature. In addition to language teaching, she also has been performing Javanese, Balinese and Sumatranese dances on campus, in the Bay Area and at dance festivals.

Faculty web site: <http://sseas.berkeley.edu/people/faculty/ninik-lunde>

South and Southeast Asian Studies 39, Section 2
Island Imaginations: Exploring the Short Story in the Philippines, Indonesia, Malaysia and Singapore (2 units, LG)
Lecturer Karen Llagas and Professor Sylvia Tiwon
Friday 10:00-12:00, 279 Dwinelle Hall, Class number: 17342

The Philippines, Indonesia, Malaysia and Singapore are multicultural island nations in Southeast Asia with strong story-telling traditions. We will read and discuss the short story as a modern narrative form through which writers have explored questions of nation and identity in colonial and postcolonial times. The seminar introduces students to some of the major contemporary themes including romance, resistance, gender, the challenges of modernization and the new global order.

Karen Llagas lectures in UC Berkeley's Beginner and Intermediate Filipino classes; she teaches Tagalog privately and in group classes in the San Francisco Bay Area and online.

Sylvia Tiwon is an Associate Professor in the Department of South and Southeast Asian Studies. She teaches literature, gender, and oral and cultural studies of Southeast Asia with a focus on Indonesia. Her areas of interest include national and pre-national literatures, oral discourse and mythologies, as well as socio-cultural formations at the national and sub-national levels.

Faculty web site: <http://sseas.berkeley.edu/people/faculty/sylvia-tiwon>

South and Southeast Asian Studies 39, Section 3
Contentious Politics and Southeast Asian Literature (Focus on Vietnam and the Philippines) (2 units, LG)
Dr. Maria Josephine Barrios-Leblanc and Lecturer Hanh Tran
Friday 2:00-4:00, 279 Dwinelle Hall, Class number: 17343

Do you like debates? How do you think people can debate about politics through literature? This course looks into the dynamics of literature and politics in Vietnam and the Philippines by asking the following questions: How have writers articulated their beliefs on colonialism, human rights, gender and class through poetry and fiction? When does ideology inform literary techniques? How can we study specific genres such as prison literature, testimonial literature, guerrilla literature, and underground newspapers and literary magazines?

Maria Barrios-Leblanc has a Ph.D. in Filipino (Philippine Literature) from the University of the Philippines (UP). Before coming to UC Berkeley, she served as Associate Professor and Associate Dean of the UP College of Arts and Letters. She has written/edited more than a dozen books including language textbooks, poetry collections and research on Philippine drama and literature.

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

Hanh Tran holds an M.A. degree in South and Southeast Asian Studies with a concentration in Political Studies and Literature. He has been a lecturer of Vietnamese language and literature at UC Berkeley since 2006. He has also guest lectured and co-taught several seminars on Southeast Asian Literature and Movies. His current research interest is in Southeast Asian Material Culture and History of Art. He also sponsored several DeCal courses on Vietnamese culture through films.

Theater, Dance, and Performance Studies 39, Section I
Best Films of 2018 (1.5 units, LG)
Professor Abigail De Kosnik
Friday 2:30-4:00, 340 Moffitt/BCNM Commons, Class number: 32365

In "Best Films of 2018" we will watch what the instructor has judged to be the best dozen (approximately) films of 2018, starting at the bottom of the list and proceeding to number one. Students must watch the films outside of seminar time (the instructor will make the films available for viewing) and then come to seminar ready to discuss the performances, writing (plot and dialogue), direction, cinematography, editing, art direction, costuming, effects, lighting, sound, and other aspects of the film of the week. We will be working with the instructor's rankings, so students will be invited to propose their own rankings of the films of 2018 at the end of the term. Attendance at all seminar meetings (barring illness) is required, and students must also sign up to give one presentation on one film during the semester.

Abigail De Kosnik is an Associate Professor in the Berkeley Center for New Media and the Department of Theater, Dance, and Performance Studies. She researches digital cultures (especially online fandom and piracy), especially how race/ethnicity, gender, sexuality, and nationality intersect with, and impact, these cultures. Her book, *Rogue Archives*, was published by MIT Press in 2016. Her working group, The Color of New Media, collaborated on a book about Twitter called *#identity* that will be published by University of Michigan Press in April 2019.

Faculty web site: <http://tdps.berkeley.edu/people/abigail-de-kosnik/>

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.

Anthropology 84, Section I

The Woman Behind the New Deal: Frances Perkins (1 unit, P/NP)

Professor Margaret Conkey

Wednesday 9:00-10:00, Room 101- 225I College Building, Class number: 2553 I

Have you ever wondered how something like Social Security got started? Unemployment insurance? The minimum wage? What about workers' rights? How are laborers protected today? This seminar will focus on a recent book about Frances Perkins--the first woman in any presidential cabinet, the first woman in any presidential cabinet, who served under FDR--and learn how she was able to create some of the most important--and still hotly debated-- programs of social support in US history. In this election year, this "ethnography" of women, power and social change, especially in relation to American workers, will be an important insight into what needs to be done and how. Guest speakers will provide some insight into the progressive movement in New York City that spawned Perkins' motivations, and on other topics relevant to Perkins' life and work. Reading will be basically the paperback book (one chapter each week) by Kirsten Downey: "The Woman Behind the New Deal: FDR's Secretary of Labor and his Moral Conscience." **Ideally, these would be students who are engaged today with the political process, with the upcoming election and its issues and with understanding the ways in which programs and policies for the "common good" are developed and implemented (or not).**

Professor Meg Conkey is an anthropologist and archaeologist who has long engaged with issues of the roles of women in history and prehistory. She has taught at Berkeley for 30+ years, and has held numerous positions in the discipline related to feminist and gender anthropology and its practice. She has a "connection" of sorts with the subject of the seminar, as they both attended (decades apart!) the same undergraduate institution (Mt Holyoke College) and share an attachment to a specific location in Maine, where Perkins had a family homestead.

Faculty web site: <http://anthropology.berkeley.edu/users/margaret-w-conkey>

Astronomy 84, Section I

The Nature of Science and Time (1 unit, P/NP)

Professor Alex Filippenko

Friday 10:00-12:00, 12I Campbell Hall, Class number: 30182

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

Alex Filippenko joined the UC Berkeley faculty in 1986. An observational astronomer who makes frequent use of the Hubble Space Telescope, the Keck 10-meter telescopes, and Lick Observatory, he engages in research on exploding stars, active galaxies, black holes, gamma-ray bursts, and observational cosmology. Having coauthored about 900 articles on his research, Filippenko has received numerous awards and is one of the world's most highly cited astronomers; he is also an elected member of the National Academy of Sciences. He was a member of both groups that showed that the expansion of the Universe is accelerating with time. This discovery was honored with the 2011 Nobel Prize in Physics to the teams' leaders and the 2015 Breakthrough Prize in Fundamental Physics to all team members. A dedicated and enthusiastic teacher, he has won the campus Distinguished Teaching Award and has been voted "Best Professor" a record 9 times in the Daily Cal's annual "Best of Berkeley" survey. He was also named the 2006 CASE/Carnegie National Professor of the Year among doctoral and research institutions. Besides being an avid tennis player, skier, and hiker, he enjoys world travel and is addicted to observing total solar eclipses throughout the globe (16 out of 16 attempts, so far).

Faculty web site: <http://astro.berkeley.edu/people/faculty/filippenko.html>

Economics 84, Section I

Buddhist Economics (2 units, P/NP)

Professor Clair Brown

Tuesday 5:00-7:00, 648 Evans Hall, Class number: 2203 I

In Buddhist Economics, we will explore basic economics concepts and ask how Buddha might have taught them. Some questions that we address are these: What creates happiness? What is an equitable distribution of income? How is our own well-being related to the well-being of others? Does economic growth and having more income make people better off? How would Buddha revise the basic assumptions of modern economics? **Many students in my Econ I class at UC Berkeley were frustrated with the assumption that “more is better”---having more income and what it buys is what makes people better off. They also were shocked that mainstream economics does not compare the wellbeing across different income groups---the rich benefit just as much as the poor from another dollar of income, and income per capita compares quality of life across countries. As a practicing Buddhist, I asked “How would Buddha have taught Econ I?” In the competitive (free market) economic model, it makes sense to go shopping if you are feeling pain, because buying things makes you feel better. Yet we know from experience and from neuroscience that consuming more does not relieve pain. What if we lived in a society that did not put consumption at its center? What if we follow instead the Buddhist worldview that people are interdependent with each other and the planet, and are driven by compassion rather than desire? To explore these questions with an alternative economic model, I developed this Sophomore seminar “Buddhist Economics”. Most of the required reading is from my book, *Buddhist Economics: An Enlightened Approach to the Dismal Science*, Bloomsbury Press, 2017. Let’s explore together!**

Clair Brown has published research on many aspects of the labor market, including high-tech workers, labor market institutions, firm employment systems and performance, the standard of living, wage determination, and unemployment. Clair taught Econ I for many years, and practices Tibetan Buddhism. Her books include *American Standards of Living, 1919-1988* (Blackwell, 1994), *Work and Pay in the United States and Japan* (Oxford University Press, 1997), *Economic Turbulence* (University of Chicago Press, 2006), and *Chips and Change: How Crisis Reshapes the Semiconductor Industry* (MIT Press, 2009, 2011). Clair with her grad student Eli a holistic measurement for economic performance for California. She is also a faculty leader in the Development Engineering program for graduate students.

Bio and book materials <http://buddhisteconomics.net>
www.facebook.com/Buddhist-Economics-973198039490789
Her book: *Buddhist Economics: an enlightened approach to the dismal science*, Bloomsbury Press, 2017. <http://amzn.to/2kMmtm1>

Book trailer (2 min): <https://youtu.be/88RX5A2iezs>

Faculty web site: http://www.irle.berkeley.edu/faculty/brown/Brown_CV.pdf

English 84, Section I

High Culture/Low Culture and the Films and Writings of Woody Allen (2 units, P/NP)

Professor Julia Bader

Wednesday 6:30-9:30, 300 Wheeler Hall, Class number: 22199

We will examine the films and writings of Woody Allen (specifically "The Insanity Defense") in terms of themes, narration, comic and visual inventiveness and ideology. The course will also include a consideration of cultural contexts and events at Cal Performances and the Pacific Film Archive.

Sophomores interested in learning about cultural studies, acquiring film criticism skills and expanding their cultural horizons with emphasis on techniques of film comedy would be the ideal audience.

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>

History 84, Section I

Algorithmic Life: The Social Impact of Automation (1 unit, P/NP)

Professor Massimo Mazzotti

Monday 4:00-5:00, 470 Stephens Hall, Class number: 32342

Our life is increasingly shaped by digital infrastructures and automated processes. What are the broader implications of this phenomenon, both at the personal and the collective level? What is driving this apparently inescapable technological trajectory?

Professor Mazzotti teaches history and sociology of science, and he is especially interested in mathematics and technology. He's currently working on the social dimension of algorithms (digital and pre-digital). He is the director of the Center for Science, Technology, Medicine, and Society (CSTMS).

Faculty web site: <https://history.berkeley.edu/massimo-mazzotti>

Integrative Biology 84, Section I

Natural History of Berkeley (1 unit, P/NP)

Lecturer Alan Shabel

Thursday 2:00-3:00, 122 Barrows Hall, Class number: 26805

California is a natural history phenomenon, with a complex geology, a diversity of ecosystems, and a rich flora and fauna. In this seminar, you will be introduced to the natural history of Berkeley through a study of the common plants and animals of the wildland-urban interface. We will combine a series of local field trips with a study of museum specimens and short lectures. There will be no exams or homework assignments. In Spring 2019 we will give special attention to the role of fire in East Bay ecosystems. The course is open to freshmen and sophomores.

Professor Alan Shabel is a specialist on mammals with a primary focus on African otters, but his interests range across ecological levels of organization, and he is fascinated by the natural history of California and Berkeley.

Natural Resources 84, Section I

Global Environment Theme House Sophomore Seminar (I unit, P/NP)

Professor Kate O'Neill

Monday 5:30-6:30, Clark Kerr Campus, Building I, Class number: 27346

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.**

Kate O'Neill joined the Department of Environmental Science, Policy and Management at UC Berkeley in 1999, specializing in the field of global environmental politics and governance. She writes on the ever-changing nature of global environmental challenges and our responses to them, on environmental activism and social movements, and on the global political economy of wastes. She teaches upper division and graduate courses in International Environmental Politics, and is a leading faculty advisor in the Conservation and Resource Studies Major in the College of Natural Resources. She holds a Ph.D. in Political Science from Columbia University, and is a co-editor of the journal *Global Environmental Politics*. She is currently the Resident Faculty member in Unit 2.

Philosophy 84, Section I

Voting: The Logic of Democracy (I unit, P/NP)

Professor Wesley Holliday

Tuesday 10:30-11:30, 234 Moses Hall, Class number: 3203 I

Some of the most important election results in history have turned on something most of us take for granted: the method we use to determine the election result based on voters' preferences. In a recent election in Massachusetts, a candidate in a 10-person primary race won the election with only 21% of the votes. Is this a rational way to elect our leaders? Are there better ways? These are among the questions addressed in Social Choice Theory, an interdisciplinary field investigated by economists, philosophers, political scientists, logicians, and mathematicians. In this seminar, we will explore questions of social choice, in particular of voting theory, from a philosophical and logical perspective. No previous acquaintance with these topics will be assumed. The only prerequisite is openness to rigorous philosophical and mathematical reasoning about questions of social concern. **Students who are comfortable with areas that involve "formal reasoning," e.g., philosophy, mathematics, economics, computer science, physics, and related fields, may be especially well suited for the seminar.**

Professor Holliday earned his PhD in Philosophy from Stanford University, writing a dissertation in logic and epistemology that won the E. W. Beth Dissertation Prize from the Association of Logic, Language and Information. His recent research is in pure and applied logic, especially modal and nonclassical logic, epistemic logic and epistemology, logic and natural language, logic and probability, and logic and social choice theory. At Berkeley he has taught introductory and upper-division courses in logic and epistemology, as well as graduate seminars in formal epistemology, logic, and social choice theory.

Faculty web site: <https://philosophy.berkeley.edu/holliday>

Vision Science 84, Section I
Vision Research Seen Through Myopia (Near-sightedness) (1 unit, P/NP)
Professor Christine Wildsoet
Thursday 4:00-6:00, 394 Minor Hall, Class number: 29541

This seminar will meet for approximately 2 hours every other week starting on January 24, 2019

As an introduction to vision research, this seminar will combine reading of recent review papers with hands-on research through mini-projects. Using myopia (near-sightedness) as a topical research example, we will explore together the field through recent review papers—what is known about the condition and the research approaches used to discover that information. Based on this literature, we will formulate research questions around which self- and small-group studies will be designed and executed. Research tools encountered will include questionnaires and instruments used to obtain objective measures of eye dimensions, refractive errors, vision, and visual experience. We will also consider the applications and relative merits of animal models and in vitro cell and tissue studies in myopia research. **This seminar is likely of interest to those who suffer from myopia and want to know more about their condition, those who are interested in Optometry or Ophthalmology as potential professions, and those who are just curious about eyes and vision and how one goes about investigating causes and mechanisms underlying eye diseases, of which myopia is an example.**

Students interested in research or who find themselves asking "why" a lot should enjoy this seminar. Consider this seminar if graduate research, e.g. a PhD, is among your career path possibilities. The goal of this seminar is to open your eyes to the broad range of possibilities that fall under the umbrella of vision research. If you are also myopic (nearsighted), you may also learn a lot about your own eyes.

Professor Wildsoet is on the faculty of the School of Optometry, where she is involved in pharmacology teaching and coordinating two summer research programs for Optometry students. She is also a member of the Vision Science group. Her research is multidisciplinary as is her research group, which includes basic scientists and clinicians, both local and international. The focus of research in her lab is myopia (nearsightedness), specifically the mechanisms underlying the development of myopia and its clinical management. The overriding goals of this research is understand the environmental factors driving the current myopia epidemic and the development of novel and improved treatments for controlling 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 as well.

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