

# **College Scholars Program Research Seminars: Academic Year** **2020-2021**

## **Fall 2020 Research Seminar Options**

Crown 86: Storytelling/Professional Communication in a Digital Age

Merrill 90: Theory and Practice of Field Studies

Crown 88: Computational Futurology: Data Analysis Predicting Human Behavior and Activity

BME 122H: Extreme Environmental Virology

## **Winter 2021 Research Seminar Options**

Porter 90B: Art and Politics after Google

Stevenson 43: Comparative Nationalisms in Historical Perspective

Crown 90: Business Entrepreneurship: Discovering and Launching a Startup

BME 122H: Extreme Environmental Virology

Crown 89: Workshop in Computational Biology

Kresge 85S: Critical Writing Practicum: System and Subject

## **Fall 2020 Seminar Descriptions**

### **Crown 86: Storytelling/Professional Communication in a Digital Age**

**Kati Greaney**

**GE: PR-C**

In this research seminar students will get the opportunity to explore a variety of methods and approaches to telling stories through digital media. With the ever changing landscape of social media, journalism and marketing, there is tremendous value in learning to create engaging and informative digital stories. In this course students will explore theories of narrative form, subjectivity, political and social engagement, and identity. We will look at a variety of methods and approaches to communicating effectively and reaching audiences. Students will have the opportunity to develop, produce, and share a final capstone project using film, photo, audio, or mixed media methods. Additionally, there will be several guest speakers who specialize in a wide range of areas related to digital technology and storytelling.

### **Merrill 90: Theory and Practice of Field Studies**

**Mike Rotkin**

**GE: PR-S**

This research seminar will provide an opportunity to learn about Santa Cruz, California, its contemporary history, culture, and politics. This course is about social change and community organizing. This will be much more than an opportunity to simply volunteer in the local community. We will study how things

have changed in Santa Cruz, which moved in a relatively brief period from being one of the most conservative communities in the United States to one of the most progressive. Students will learn through readings, lectures, discussions, and individual field experiences working with local service and political organizations. The course will be an opportunity to learn about qualitative, interdisciplinary social science research and will be a good way to prepare for on-going, thoughtful, and effective activism in Santa Cruz and elsewhere on a wide variety of issues.

**Crown 88: Computational Futurology: Data Analysis Predicting Human Behavior and Activity**

**Peter Rothman**

**GE: SR**

It is a commonly believed trope that human behavior is unpredictable or at least very difficult to predict, however there is a large body of scientific knowledge that suggests the contrary.

Meanwhile, electronic surveillance and “big data” have given rise to predictive analytics and related technologies that claim to do exactly that. We will look at how to make and critique predictions and study our own predictability. We will study the use of powerful computational tools such as deep learning and quantum computing to make predictions of individual human actions as well as aggregate behavior of groups and organizations. We will study how individuals and organizations are using predictions to sell products and influence opinions, and perhaps even to control or topple governments and win elections. Finally, we will explore applications for good such as predictive urban environments that improve the safety and comfort of their residents by eliminating traffic congestion, anticipatory disaster responses, and methods for predicting and preventing war and other global existential risks.

Note: The research seminar will assume students are familiar with basic concepts of probability and have some exposure to computational methods such as spreadsheets and computer programming. Feel free to email the instructor ([plrothma@ucsc.edu](mailto:plrothma@ucsc.edu)) for more information.

**BME 122H: Extreme Environmental Virology**

**David Bernick**

**GE: TA**

This research seminar explores life in extreme environments with an emphasis on the viruses that live there. The course integrates aspects of virology, molecular biology and computational biology. Our field study area will be the Don Edwards National Wildlife Refuge, where we will investigate a high-salt extreme environment. We will use DNA extraction methods to find molecular evidence of the organisms that live there and we will describe the genetic content of viruses and the community living in those high-salt ponds. One major term project will be assigned and will include a written journal-style paper with in-class presentations of your work.

**Winter 2021 Seminar Descriptions**

**Porter 90B: Art and Politics after Google**

**David Lau**

**GE: IM**

This College Scholars seminar will explore the growing cultural significance of the Internet, which is ever more seamlessly integrated into everyday life. Using Astra Taylor's *The People's Platform* as a guide, we will move from the early-90s flowering of "information technology," to the dotcom bubble, from there to web 2.0 and social media, and up to the present post-financial crisis period of internet surveillance. Our class emphases will fall on the study of internet cultural history, contemporary forms of digital and installation art (Hito Steyerl, Thomas Hirschhorn, and Ricardo Dominguez), and they will also include video documentary (*In the Intense Now*, *Lo and Behold, The Square*), poetry (US – by the flarf collective and fellow travelers; Egypt – Maged Zaher; Russia – Kirill Medvedev and Pavel Arsenev), and a variety of web-based cultures (the alt-right for example). We will also examine Ben Lerner's novel *10:04*. The class will conclude with the study of the popular use of art, poetry, digital video, and social media in contemporary social protest movements. In addition to writing assignments, students will develop skills to realize an independent research project.

### **Stevenson 43: Comparative Nationalisms in Historical Perspective**

**Kiva Silver**

**GE: CC**

From the white nationalist demonstrations in the USA to Brexit and the resurgence of populist movements in India and Europe, nationalism is resurgent worldwide. How do we understand this resurgence of nationalism? Are we witnessing a return of tribalism or is nationalism in the age of globalization something new? In this course, we will explore key theories in the field of nationalism studies while examining a range of contemporary nationalist movements in a comparative, global perspective. Throughout the course, we will draw historical comparisons to earlier nationalist movements in order to understand our current moment of nationalist revival. We will also learn how to make use of UCSC's resources for conducting research in the humanities and social sciences. Using these resources and the course readings, students will conduct research into a current nationalist movement of their choice.

### **Crown 90: Business Entrepreneurship: Discovering and Launching a Startup**

**Nada Miljkovic**

**GE: PR-E**

Students in this research seminar will learn who their core and tertiary customers are, the marketing processes required for initial adoption and downstream sustainability, what data will be required by future partnerships and users, and core project management, financial, legal, and marketing resources needed for new companies. Students also learn to assess intellectual property and risk before they design/build as well as to identify financing and other key resources.

### **BME 122H: Extreme Environmental Virology**

**David Bernick**

**GE: TA**

This research seminar explores life in extreme environments with an emphasis on the viruses that live there. The course integrates aspects of virology, molecular biology and computational biology. Our field study area will be the Don Edwards National Wildlife Refuge, where we will investigate a high-salt extreme environment. We will use DNA extraction methods to find molecular evidence of the organisms

that live there and we will describe the genetic content of viruses and the community living in those high-salt ponds. One major term project will be assigned and will include a written journal-style paper with in-class presentations of your work.

### **Crown 89: Workshop in Computational Biology**

**GE: TA**

Crown College 89, Workshop in Computational Biology, is a class designed to engage in computational biology research College Scholars students that have some background in math, programming, or biology. We introduce the basic biological, statistical and computational concepts that are needed to perform hands-on research in computational biology; students are trained to read primary literature and do collaborative work in an interdisciplinary setting, drawing from the complementary strengths of students taking the class.

### **KRESGE 85S: Critical Writing Practicum: System and Subject**

**Jeremy Gauger**

**GE: TBD**

Practicum for advanced critical writing practices. Participants investigate problems of social ontology and epistemology—the "what is there" and "how do we know it" questions—surrounding the idea of systems and subjects. Questions might include, but are not limited to: what systems in society do we identify when we identify systemic racism, or other systemic bias? Is "society" an object that we can know, and if so, does our knowledge of it privilege systems and structures? What is the role of individual experience in that knowledge? Is there a contrast between atomistic views of society (as "individuals" and "families"), and dynamic views (as "communities" and "institutions"), or are these two kinds of views interdependent? Do systems such as global capitalism exist pervasively and independently, or are they only legible as the effects of structures and institutional sub-structures? Students will consider these concepts and questions as broad lift-off points for weekly reflective and analytical writing, with a concentration on research-driven non-fiction writing.