

DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

2019 in REVIEW



DONALD E BAXTER M D
HALL OF THE HUMANITIES
AND SOCIAL SCIENCES

Greetings

FROM THE CHAIR



A century ago, George Ellery Hale, having built the world's largest telescope on Mount Wilson, sought to make Pasadena a destination for science and the humanities. He engineered the transformation of Throop Polytechnic Institute into the great scientific university that is now Caltech, and he persuaded Henry Huntington to leave his estate to a foundation that would become what we know today as The Huntington Library, Art Museum, and Botanical Gardens.

In recent years, our two institutions have brought new meaning to Hale's vision with a series of collaborations among our scholars that empower new discoveries in visual culture and the history of science and technology, among other fields.

For several decades, Caltech's humanists and social scientists have been engaged in dialogue with other parts of the Institute on a variety of issues, from neuroscience to networked markets. Those collaborations continued to expand in 2019 with work in areas as diverse as artificial intelligence, quantum theory, and social media behavior.

Looking forward, our ambition is to deepen the dialogue between HSS and the rest of Caltech. To confront the challenges of climate change, resource scarcity, and the tensions from unchecked innovations in information technology, we must break down barriers that traditionally separate the cultures of science and engineering from those of the humanities and social sciences. This understanding across disciplines—and people and cultures—is essential to a better future for the humans of this planet.

JEAN-LAURENT ROSENTHAL

Rea A. and Lela G. Axline Professor of Business Economics;
Ronald and Maxine Linde Leadership Chair, Division of the Humanities and Social Sciences

DECEMBER 2019

CARNEGIE INSTITUTION OF WASHINGTON
MOUNT WILSON SOLAR OBSERVATORY
PASADENA, CALIFORNIA

May 11, 1914

My dear Mr. Huntington:

Many thanks for your letter, which I found here on my return to Pasadena. I shall be glad if my suggestions prove to be of any service.

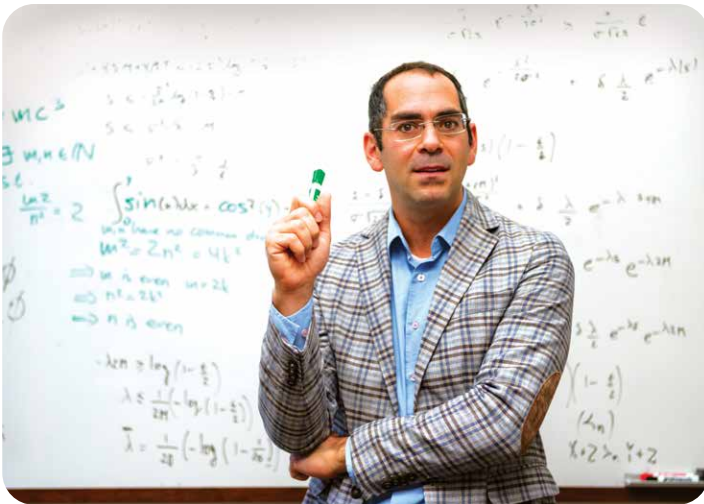
The powerful attractions of your pictures and library have fired my imagination, and set in motion a new train of ideas. I can't help feeling that with such rich and uniquely valuable material it would be a very easy matter to make your collection of real international importance, without greater expenditure than you may already contemplate. I have had some experience in starting international projects, and have learned that it is quite as easy to acquire the

2 EAST 57TH STREET

Dear Professor Hale -
Your letter of May 11th reached me as I was sailing for Europe and during the summer I have given the suggestions some thought. I am not ready to reply but it is quite possible that you have planted a seed.

2019 **in** REVIEW

WINTER



Tamuz Explores the Long-Run Behavior of Random Walks

Professor of Economics and Mathematics **Omer Tamuz** gave the Earnest C. Watson Lecture in January, titled “The Long-Run Behavior of Random Walks.” Scholars have studied random walks—trajectories formed by successions of random steps—for more than a hundred years as important models in physics, computer science, finance, and economics. They also are of interest as mathematical objects in their own right. Tamuz demonstrated the topic with a “random” volunteer from the audience (who looked a lot like his son, Amir). “The basic idea is very simple,” he explained. “We have a random process—in this case it was drawing cards—and I have some object, in this case a person that moves right and left each time with probability one-half. The question is: Does that person necessarily return to the origin?” Tamuz described some classical results, introduced random walks on groups and graphs, presented a few open questions regarding their long-run behavior, and shared a surprising connection to economics and the nature of wealth creation.



Adolphs Lab Publishes Research on Autism and Theory of Mind

Current Biology published a study by HSS neuroscientists that presents a new test to examine the complex neural processes in theory of mind, which is the ability to understand other people’s beliefs, preferences, and intentions as distinct from one’s own, and the challenges faced by people with autism with respect thereto. “Our [test] allows researchers to quantitatively deconstruct the components of theory of mind, to see where different people have trouble, and this may reveal to us subtypes of autism,” explained study co-author **Ralph Adolphs** (PhD ’93), Bren Professor of Psychology, Neuroscience, and Biology, and the director and Allen V. C. Davis and Lenabelle Davis Leadership Chair of the Caltech Brain Imaging Center. **Damian Stanley**, an assistant professor at Adelphi University and visiting associate in psychology at Caltech, designed the study. Other collaborators on the paper include Isabelle Rosenthal, a BBE graduate student, and Cendri Hutcherson, a former postdoctoral scholar in the Rangel lab and current faculty member at the University of Toronto Scarborough.



Plott Finds New Applications for Economics

Since joining the Caltech faculty in 1971, William D. Hacker Professor of Economics and Political Science **Charles Plott** has developed theories relevant to a wide range of topics, including stock market behavior, price controls, and monopolies. He is considered a pioneer in the development of experimental laboratory methods in economics. Most recently, Plott applied his expertise to improving transportation services for special-needs students in Australia. The country's size and population distribution make school transportation a challenge, one that can be even more daunting when students' needs cannot be met by a one-size-fits-all system. To address these problems, Plott and his research team collaborated with a school in northern Melbourne to build a mathematical model of the most efficient bus routes that could be used, and they designed a special auction process to help keep transportation costs low. Under the new system, students receive better service, with one mother reporting that her child's commute time had fallen dramatically, from two hours to just 30 minutes.

SPRING



Pigman Book Considers Dreams from a Historical Perspective

Caltech News interviewed Professor of English **George Pigman** in connection with the publication of his book *Conceptions of Dreaming from Homer to 1800*, which delivers the first comprehensive account of ideas about dreaming from the Homeric epics through the early modern period. "There is no simple narrative of progress from a superstitious belief that dreams foretell the future to the beginnings of a scientific view that dreams are natural phenomena that are to be examined solely in scientific terms," said Pigman. He cited early examples from history of military generals reporting dreams the night before battle, and of sick people sleeping in holy places with the hope that God would appear to them in a dream and tell them what to do—or even cure them. Despite the transition to more rational beliefs over the course of the 18th century, the curiosity about dreams and their meaning persists today.



Mobbs Lab Explores How People React to Danger

Research from the lab of **Dean Mobbs**, assistant professor of cognitive neuroscience and Chen Scholar, shows for the first time how the brains of anxious individuals react to both fast (fear-based) and slow (anxiety-based) threats of attack. The results indicate that most individuals, whether anxious or not, respond to imminent threats in the same way (run!), but when it comes to slow threats, a person's level of anxiety makes a difference: the more anxious they are, the sooner they will flee a dangerous situation. "We can see this in the brain—anxious individuals show faster and stronger activity in the anxiety circuits of their brains when presented with slow attacking threats," Mobbs said. The study, co-written with postdoctoral scholars **Bowen Fung** and **Song Qi**, appeared in the journal *Nature Human Behaviour*, and *ScienceDaily* shared the results.

In a video interview for the Caltech Break Through campaign, Mobbs revealed where he draws inspiration for some of his experiments:

I love horror movies. Sometimes, directors of horror movies are some of the best psychologists because they know how to evoke fear in people.



Caltech Undergrad Weighs in on Privacy Laws

Following the enactment of the California Consumer Privacy Act in 2018, Caltech undergraduate **Rona Yu**, a senior studying computer science, embarked on a project with **Morgan Kousser**, professor of history and social science, to examine privacy rights and how they should be regulated in the age of big tech. "I've written a paper that covers the points that new privacy legislation should be prioritizing, the potential unintended consequences of the legislation that has been proposed, and other smaller things that I think are going to become larger issues," Yu explained. She submitted her observations and recommendations to the Federal Trade Commission as part of its comment process on new privacy regulations. In her public lecture at Caltech in June, Yu encouraged her peers to take action. "I think the most effective legislation is going to understand both the technical and the policy aspect of things," she said. "A lot of the students here have the right background to make a big impact."





The Well-Connected Theorist

The Caltech *Break Through* campaign featured an interview with then postdoctoral scholar **Teddy Mekonnen**, who received his research fellowship from The Ronald and Maxine Linde Institute of Economic and Management Sciences. He discussed how his interactions with Caltech faculty ignited his curiosity about the research potential at the intersection of economics and computer science. “Interdisciplinarity doesn’t necessarily mean you’re completely immersed in two fields,” Mekonnen observed. “It could be realizing that there is a similar underlying thread in the kinds of research questions people ask and exploring tools from one field to answer questions from the other. That happens all the time here.” The feature also described his collaboration with Allen and Lenabelle Davis Professor of Economics **Federico Echenique** to examine the perplexing trade-off within the Peter principle, the maxim that organizations promote employees until they reach the level at which they are no longer competent.



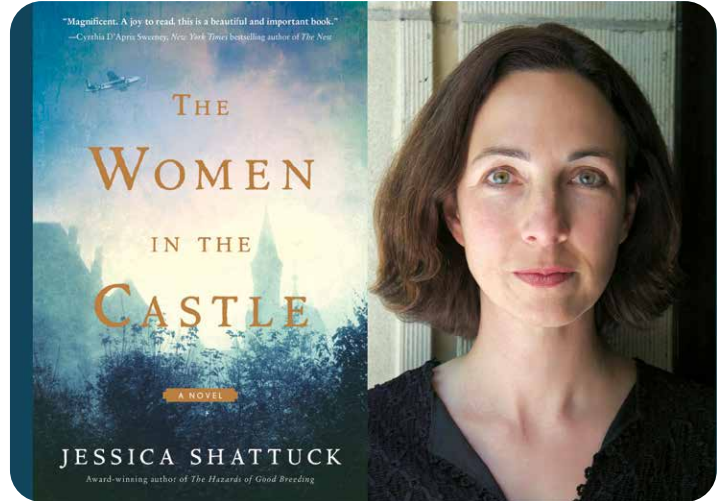
Rosenthal and Hoffman Reveal France’s “Shadow” Economy in Their Latest Book

In an interview for *Caltech* magazine, **Philip T. Hoffman**, Rea A. and Lela G. Axline Professor of Business Economics and History, and **Jean-Laurent Rosenthal**, Rea A. and Lela G. Axline Professor of Business Economics and HSS’s Ronald and Maxine Linde Leadership Chair, discussed their latest book, *Dark Matter Credit: The Development of Peer-to-Peer Lending and Banking in France*, co-written with Gilles Postel-Vinay. By combing through archival data on 250,000 French loans, the authors uncovered a pervasive “shadow” system of peer-to-peer lending, and they make the case that borrowing and lending money thrived in 18th- and 19th-century France without the help of banks. This book overturns the prevailing wisdom that banks are necessary for economic growth while also challenging widespread misperceptions about French economic history, such as the notion that banks proliferated slowly and that financial innovation was hobbled by French law.



Workshop Participants Debate Fairness of Artificial Intelligence

Philosophers, psychologists, and computer scientists gathered on campus at the Decisions, Games, and Logic workshop in June to discuss whether or not artificial intelligence, or machine-learning algorithms, can be fair. Organized primarily by **Boris Babic**, the former Weisman Postdoctoral Instructor in Philosophy of Science, the workshop focused on the consequences of our increased use of machine learning in such contexts as college admissions, employment, bank lending, and criminal justice. “The amount of literature out there about ethical constraints on machine learning has exploded,” said Babic. “One key question is: Is there a way to provide guarantees or safeguards that these machine-learning algorithms are not going to produce what we deem unfair effects across different demographic subgroups, such as those based on race or gender?”



Visiting Writer Shattuck Discusses Ordinary and Extraordinary Germans

Award-winning author Jessica Shattuck came to Caltech in April as part of the James Michelin Distinguished Visitors Program, which promotes creative interaction between the arts and sciences on campus. Her talk, titled “Ordinary and Extraordinary Germans: Complicity and Resistance during WWII,” focused on her 2017 *New York Times* bestselling novel, *The Women in the Castle*. Shattuck shared how she came to write the book, being half-German herself, and what she learned in her research about this period in history.



HSS Celebrates the Class of 2019

At the 125th commencement exercises in June, Caltech awarded PhDs to those completing their degrees in the Division of the Humanities and Social Sciences. The 2019 HSS graduates (with their dissertations) are:

- Nicholas Adams-Cohen (“New Perspectives in Political Communication”)
- Hamed Hamze Bajgiran (“Essays on Decision Theory”)
- Chujun Lin (“Understanding How People Make Trait Attributions from Faces”)
- Hao Zhao (“Essays on Economics of Groundwater Resource Management”)

SUMMER



Holland's New Book Explores the Theoretical Use of the Lever to Mobilize New Ideas

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In her latest book, *The Lever as Instrument of Reason*, Professor of Comparative Literature **Jocelyn Holland** explores how 18th- and 19th-century German writers used the idea of a simple machine as a “tool of investigation” and a “being of reason.” She explained in an interview with Caltech News that using a physical tool—such as a lever, pulley, or wedge—offers a mechanical advantage that creates an augmented human agency. “That is our entry point into thinking of the lever as a way to help think through problems or do things with our minds that we wouldn’t otherwise be able to do,” Holland observed. She offered examples of considering moral decisions on a scale or balancing actions and beliefs on a fulcrum. “It’s a kind of mental modeling, with different opposing forces balancing in our minds.”



What Is in People's Minds When They Buy Stocks?

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Federico Echenique, the Allen and Lenabelle Davis Professor of Economics, and **Kota Saito**, professor of economics, have spent the last several years studying the theory of subjective expected utility (SEU), which models people’s behaviors in making financial choices under uncertain circumstances. The theory holds that when people buy stocks, they tend to have beliefs in place about how well the investments will perform and which ones are riskier bets. The economists can’t read minds, but they have developed mathematical tools to test whether behavior is consistent with the SEU theory. “Our data showed that people’s decisions were not entirely consistent with the theory,” explained Saito. “While the model did accurately predict the general direction in which people would react to prices and quantities, generally buying less assets as they become more expensive, their buying behavior did not change to the extent the SEU theory would predict.” Echenique and Saito are thinking about how they might revise SEU theories to be more accurate.



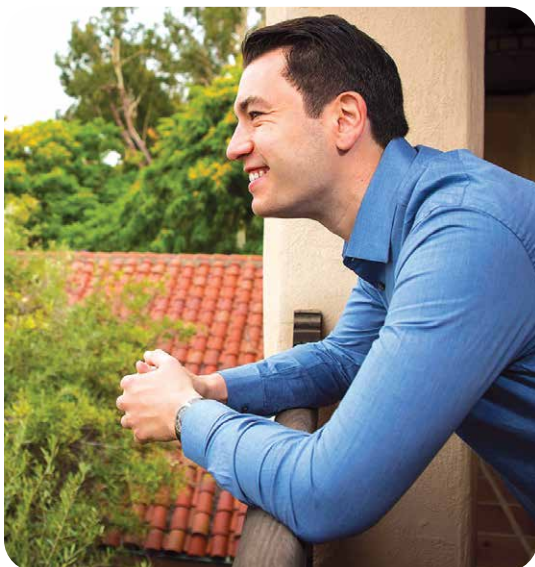
Caltech Break Through Campaign Profiles Agranov: The Decisions Detective

Marina Agranov is a professor of economics and director of the Center for Theoretical and Experimental Social Sciences, which is part of The Ronald and Maxine Linde Institute of Economic and Management Sciences. Agranov explained that her main research focus is on how people form beliefs and make choices, and she designs experiments to test her theories. She recently collaborated with Professor of Economics and Mathematics **Omer Tamuz** to study the long-hypothesized wisdom of crowds in an effort to find out whether large groups are more efficient and effective at aggregating and learning the truth. In early results of their experiment, they found that it took larger groups *longer* to make the correct choice, even though they had more information. “Why do I behave differently when I observe three other people making choices versus 10 other people making choices?” Agranov asked. “Do I rely more on myself, for example? These are awesome questions because they relate to media and propaganda and how we form beliefs in every domain.”



Summer Research Takes a Medieval Turn

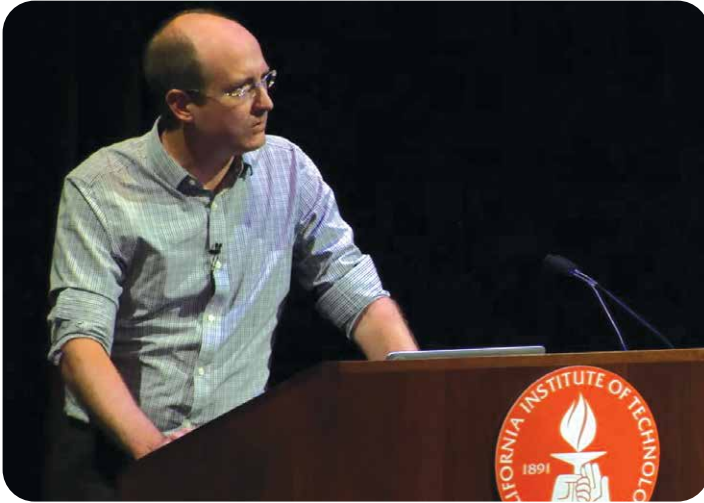
Professor of English **Jennifer Jahner** mentored Pasadena City College student Amy Windham as part of Caltech’s Summer Undergraduate Research Fellowships (SURF) program, which Caltech News featured this past summer. Windham focused her research on *The Book of Margery Kempe*, considered the first autobiography in the English language, to observe what the work reveals about both female literacy and how books developed in medieval times. Jahner helped Windham with comprehension and pronunciation of Middle English, and they also visited the Special Collections at the UCLA Library to look at manuscripts from the period that Windham has been exploring. “Nothing replaces the experience of actually being in the presence of a 700- or 800-year-old book,” said Jahner. The fall 2019 issue of *Caltech* magazine also highlighted Jahner and Windham’s collaboration.



New Faculty Interview with Sebens: On the Edge of Philosophy and Physics

When **Charles (Chip) Sebens** took his first philosophy class as an MIT undergraduate, he thought it would be “just tolerable.” Two master’s degrees and a doctorate later, Sebens, assistant professor of philosophy, now uses philosophical approaches to inquiry in order to advance the field of physics. For example, he recently wrote a paper using quantum theory to argue that electrons really do spin. And, in courses such as Philosophy Through Science Fiction, he is introducing Caltech students to important philosophical questions using themes like teleportation, parallel universes, and time travel. According to Sebens, “When students start learning philosophy, they often feel like the scenarios that philosophers discuss are not worth taking seriously. Framing the course as an analysis of science fiction allows students to put these concerns aside and ultimately realize that philosophy is relevant to their lives and to other fields of academic inquiry.” The fall 2019 issue of *Caltech* magazine also highlighted Sebens’s course.

FALL



Eberhardt Shares His Research on Causality in Watson Lecture

In his Earnest C. Watson Lecture in October, Professor of Philosophy **Frederick Eberhardt** presented “Causality: From Aristotle to Zebrafish.” Eberhardt’s work focuses on methods of causal discovery from statistical data, the use of experiments in causal discovery, and the integration of causal inferences from different data sets. His talk began with a tour of the philosophical foundations of causality and ended with the discovery of neural connections in the brains of zebrafish larvae. He also shared a story about working with four Caltech undergraduate students as they prepared for the 2019 Data Open Championship. The undergrads had asked Eberhardt to teach them how to understand causal relations from their data, in the hopes that it would give them an edge in the competition. Eberhardt reported that the Caltech team took home the grand prize in April for their project, which analyzed optimal spending strategies for the prevention of malaria and sanitation-related mortalities, and he shared a few comments on their analysis.



Scientists Take the Study of Fear to a Haunted House

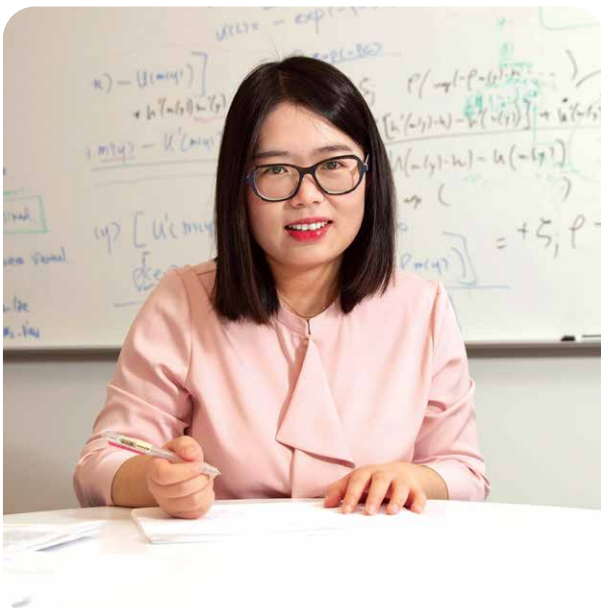
HSS neuroscientists partnered with a seasonal haunted house in Orange County, The 17th Door, to study the different ways in which people react to fear. “If we were to design an experiment to make people as afraid as possible without actually putting them in any harm, it might look a lot like this haunted house,” explained **Colin Camerer**, the Robert Kirby Professor of Behavioral Economics, T&C Chen Center for Social and Decision Neuroscience Leadership Chair, and Director of the T&C Chen Center for Social and Decision Neuroscience. Camerer and **Dean Mobbs**, assistant professor of cognitive neuroscience and Chen Scholar, wanted to study the phenomenon known as projection bias, in which people do not always accurately predict how they will react to a situation. They also were interested in exploring whether a person’s fear levels depend on the number of friends with whom they walk through the haunted house. “This is not your typical experiment, but it’s a great experience,” said **Virginia Fedrigo**, a research technician assistant in the Camerer lab. “We have been learning to plan for the unplanned, and I am curious to analyze the results.” KPCC and the BBC interviewed Camerer on the team’s findings.





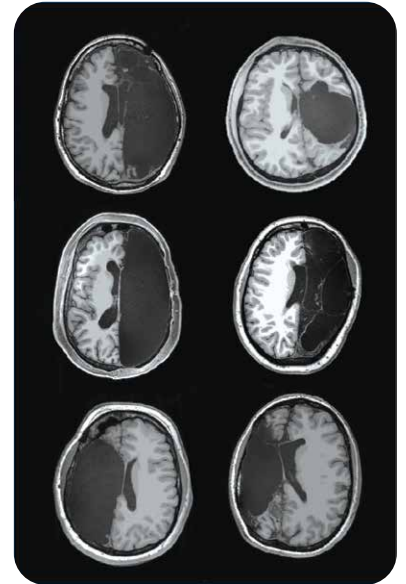
Algorithms Seek Out Voter Fraud

In the spring, social science graduate student **Seo Young “Silvia” Kim**, Caltech undergraduate **Spencer Schneider**, and Professor of Political Science **Michael Alvarez** collaborated with the Orange County Registrar of Voters to develop new algorithms to track voter data. Their research project developed in response to the growing concern over voter fraud in recent years. Voting records are constantly changing due to the addition and removal of voters, changes in addresses, and other administrative processes—all of which can negatively influence the quality and integrity of elections. The team’s algorithms take daily snapshots of voting records to measure the dynamic changes taking place in the records, look for statistical anomalies in that dynamic process, and scan for duplicates. The team published the preliminary research results in *American Politics Research* in September. They also shared their computer codes online so that others can monitor voting records and access the data for their own research. Various news outlets, including MSN and CNET, covered the research.



Patients Missing One Brain Hemisphere Show Surprisingly Intact Neural Connections

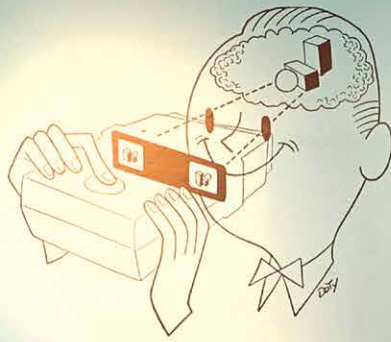
In a study published in the journal *Cell Reports*, HSS neuroscientists in the **Adolphs** lab offered new insights into how the human brain adapts in response to extreme changes. Their research focused on six patients who have had hemispherectomies, during which half of the brain is removed to treat severe seizures that don’t respond to other treatment. The research team performed magnetic resonance imaging (MRI) scans on these patients, all of whom received the surgeries as children and now have relatively normal cognitive abilities. “Despite missing an entire brain hemisphere, we found all the same major brain networks that you find in healthy brains with two hemispheres,” observed **Dorit Kliemann**, postdoctoral scholar in cognitive neuroscience and lead author of the new report. Other co-authors of the study, titled “Intrinsic functional connectivity of the brain in adults with a single cerebral hemisphere,” include Senior Research Scientist **Lynn Paul**, Associate Director of the Caltech Brain Imaging Center **Michael Tyszka**, Staff Scientist **Remya Nair**, and Lecturer in Psychology **Julien Dubois** (PhD ’13). Several news outlets, including the *New York Times*, *Science News*, *Newsweek*, and *Futurism*, published the results of the study.



New Faculty Interview with Xin: Balancing the Forces of the Market

Assistant Professor of Economics **Yi Xin**’s research focuses on the economics of industrial organizations. In an interview with Caltech News, she described her interest in markets with asymmetric information, which occurs when one of two groups has more information than the other. Xin provided an example using the car-insurance market, where the insured party knows more about their personal driving habits than the insurance company does. “One project I’m working on now is to analyze data from a mobile app that keeps a record of people’s driving patterns,” Xin explained. “We want to understand whether drivers engage in less risky behavior after experiencing adverse events, such as accidents or near-misses. Potentially, these driving data could be used by the insurance company to distinguish between bad and good drivers.” She shared that some auto-insurance companies in the U.S. have adopted similar technologies to monitor drivers’ behavior and adjust prices accordingly. Xin joined the HSS faculty in the summer of 2018 after earning her PhD in economics from Johns Hopkins University.

DOUBLE



Field trip to the Los Angeles
County Museum of Art with
Professor of English Cathy Jurca

VISION



Collaborations with THE HUNTINGTON

The ties between Caltech and The Huntington Library, Art Museum, and Botanical Gardens date back a century to when Caltech's George Ellery Hale encouraged railroad magnate Henry E. Huntington to transform his library, art, and botanical collections into a research center. The collaboration continued in 2019 with the addition of two new initiatives between HSS and The Huntington.

Caltech President **Thomas Rosenbaum** shared his thoughts on the visual culture program and what role he thinks the arts play at Caltech and in STEM education in an interview with *ScienceNews*. "I firmly believe that the humanities and the arts are essential for forming well-rounded human beings who develop passions in life and can contribute to society broadly," Rosenbaum said. "We teach the arts, social sciences, and humanities rigorously at Caltech. It's an important part of our curriculum. I would argue that it also makes you a better scientist because the arts allow you to step out of a particular subject and look at it from a different viewpoint."



One-day immersive
neon course at the
Museum of Neon Art



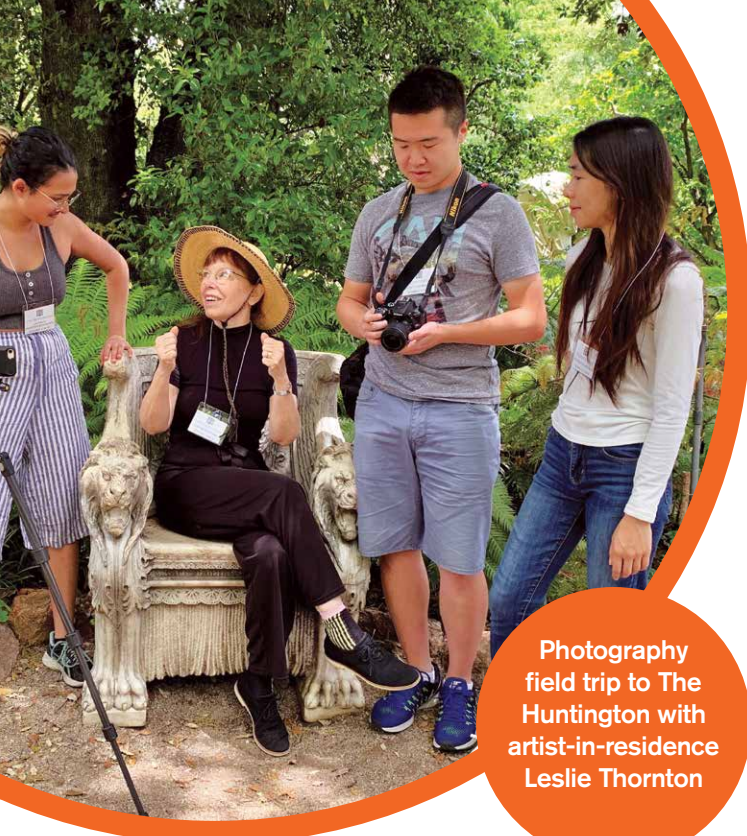
Caltech-Huntington Program in Visual Culture

The Caltech-Huntington Program in Visual Culture had an ambitious agenda in 2019, with new courses, student field trips, guest lectures, and its first artist-in-residence. The program's director is Professor of English **Dehn Gilmore**, who developed the activities with **Cathy Jurca**, professor of English; **Hillary Mushkin**, research professor of art and design in mechanical and civil engineering; and **Nicolás Wey-Gómez**, professor of history. The program receives its funding through a 2018 grant from The Andrew W. Mellon Foundation.

Media artist and filmmaker **Leslie Thornton** spent the spring 2019 term at Caltech as artist-in-residence. Thornton is considered a pioneer of contemporary media aesthetics, working at the borders and limits of cinema, video, and digital forms. In addition to teaching an undergraduate class, Thornton screened her critically acclaimed video series *Peggy and Fred in Hell*, made connections with scientists and engineers across campus and at JPL, and worked with the Caltech Archives.

One of the program's priorities is to offer new courses so that students have more learning opportunities with different forms of artistic media. "We are providing our students with a really important tool kit to draw from by offering them more exposure to classes with visual elements," said Dehn Gilmore. Caltech News featured two such classes developed by **Anne Sullivan**, the Weisman Postdoctoral Instructor in Visual Culture: one on volcanoes and another on consuming media in the Victorian age.

Beyond the classroom, Caltech students experienced new and interesting opportunities, including a photography field trip to The Huntington (with Leslie Thornton), a bus tour of neon installations around Los Angeles, an aerial imaging workshop in Hillary Mushkin's Critical Making course, a visit to Watts Tower and the Hollyhock House with Visiting Associate Professor of English **Stefanie Sobelle**, and a trip to the Los Angeles County Museum of Art with Cathy Jurca.



Photography field trip to The Huntington with artist-in-residence Leslie Thornton

RIHST @ CH

The Research Institute for the History of Science and Technology at Caltech and The Huntington

February marked the debut of the Research Institute for the History of Science and Technology at Caltech and The Huntington (RIHST). According to HSS Chair **Jean-Laurent Rosenthal**, the goal of RIHST is to "revive the critically important conversation between historians, scientists, and engineers that might serve as a model for the dialogue between the humanities and the science, technology, engineering, and math (STEM) disciplines." The joint program is directed by **Jed Z. Buchwald**, the Doris and Henry Dreyfuss Professor of History, with **Dan Lewis**, the Dibner Senior Curator of the History of Science and Technology at The Huntington, serving as associate director.

Buchwald and Lewis shared the institute's upcoming research themes and plans, including the arrival of its first visiting scholar, JPL historian **Erik Conway**. For the inaugural year (2019–2020), the research theme is the history of electrical technology in the 20th and 21st centuries. The institute will continue to build momentum each year, as new researchers and initiatives allow for the exploration of new topics. RIHST's first three years of programming are made possible by a gift from Stephen E. Rogers, a member of The Huntington's Board of Overseers and president of the Caltech Associates.

Drosophila by Edith M. Wallace for Thomas Hunt Morgan, 1934, Caltech Archives and Special Collections



WHERE
ARE THEY
NOW?

AFTER EARNING THEIR PHDS IN 2019 . . .

Nicholas Adams-Cohen is a postdoctoral fellow at Stanford University.

Chujun Lin is a postdoctoral scholar in psychology in the Adolphs lab.

Hao Zhao is a postdoctoral research associate in the Economic Science Institute at Chapman University.

AFTER COMPLETING THEIR POSTDOCTORAL APPOINTMENTS
IN 2019 . . .

Boris Babic is an assistant professor of decision sciences at INSEAD in Singapore and France.

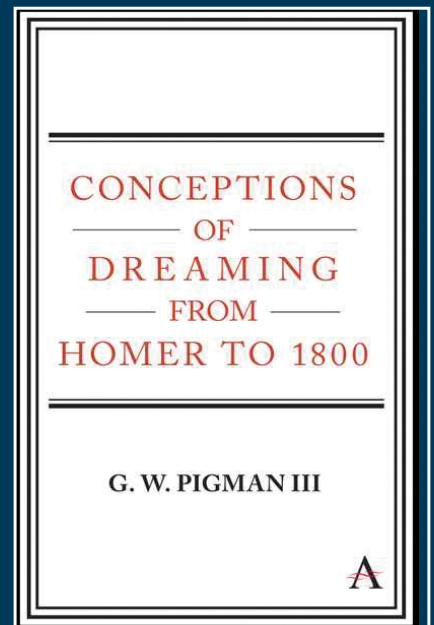
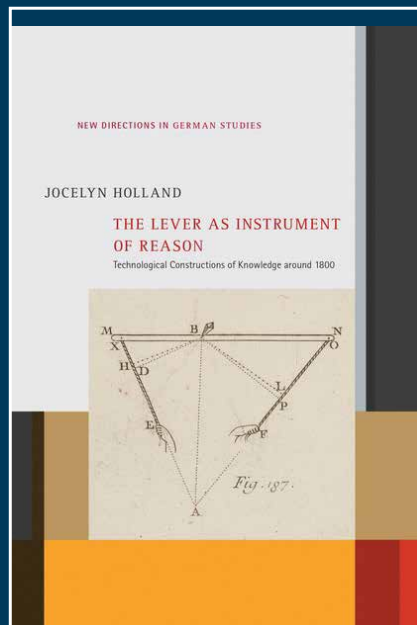
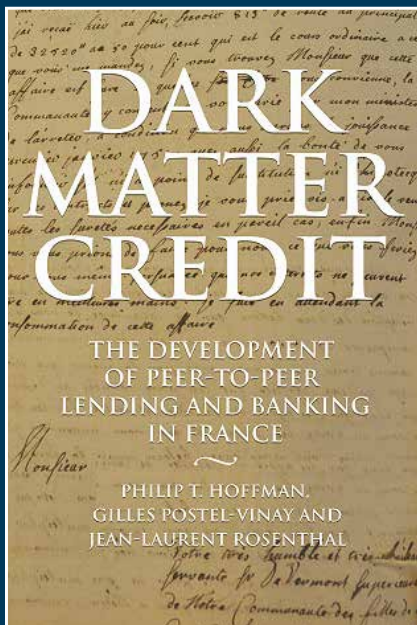
Leah Klement is an education specialist in faculty development at UC San Diego.

Teddy Mekonnen is an assistant professor of economics at Brown University.

Sven Nolte is an assistant professor at Radboud University in the Netherlands.

HSS BOOKS

PUBLISHED IN 2019



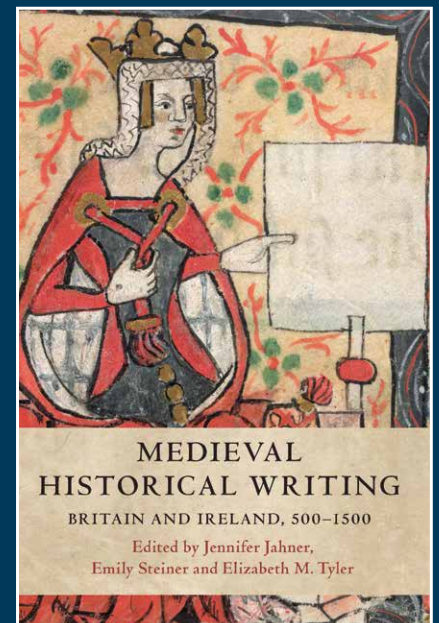
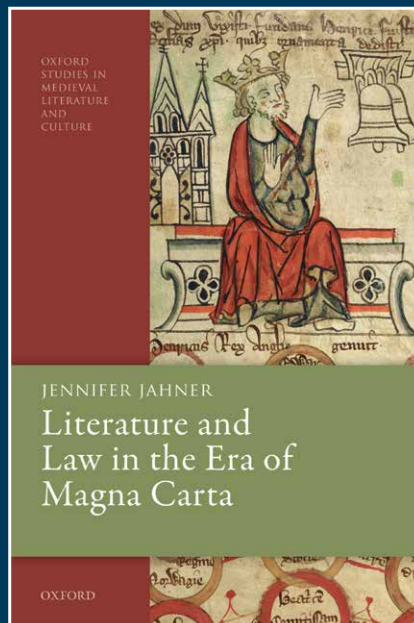
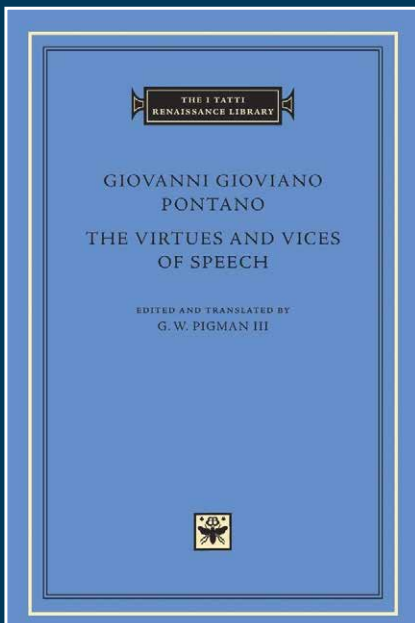


Caltech undergraduates with Hixon Writing Center Writing Specialist Emma Burris-Janssen

Thank You

HSS thanks our friends for their generosity over the years. Philanthropy is a critical pillar that supports our teaching and research ambitions. HSS is honored to share that Caltech received the following endowment gifts of \$100,000 or more in 2019:

- An anonymous donor endowed a fellowship to benefit graduate students in HSS.
- Carol Ross established the Stephen A. Ross Endowment for Economics to support the study of economics at Caltech, with a preference for supporting student research.
- Dr. Xiaolei Zhu and Jun Teng demonstrated their support for the Hixon Writing Center with the creation of the Zhu-Teng Endowed Writing Specialist Fund.



Congratulations

HSS recognizes and congratulates its faculty, postdoctoral scholars, and students for the following honors and awards bestowed in 2019.

Bing Professor of Neuroscience, Behavioral Biology, and Economics **Antonio Rangel** received a 2019 NOMIS Distinguished Scientist and Scholar Award, which is presented to pioneering scientists and scholars who, through their innovative, groundbreaking research, have made a significant contribution to their respective fields and who inspire the world around them. The award supports Rangel's project "Using Triangulation to Characterize the Neurocomputational Basis of Simple Choice."



Columbia University awarded Flintridge Foundation Professor of Economics and Political Science **Thomas R. Palfrey, III**, its Wesley Clair Mitchell Visiting Research Professorship in the department of economics for the fall term.

Caltech recognized two HSS staff members at its 64th annual Caltech Staff Service and Impact Awards: Administrative Assistant **Barbara Estrada** for her 20 years in HSS and Communications and Events Coordinator **Hanna Ramsey** for her 10 years at Caltech (including the last three years in HSS).



Caltech named **Mordechai Feingold** its Van Nuys Page Professor of History. Chaired professorships are considered the Institute's most distinguished award for individual faculty.

HSS awarded tenure to three faculty in 2019:

- **Michael Ewens**, Professor of Finance and Entrepreneurship
- **Jennifer Jahner**, Professor of English
- **Omer Tamuz**, Professor of Economics and Mathematics

The Tianqiao and Chrissy Chen Institute for Neuroscience at Caltech named **Dean Mobbs** a Chen Scholar.

In March, colleagues, alumni, and friends came together at a celebration and symposium in honor of **Charles Plott's** 80th birthday and his five decades of scholarship in economics and political science.

The American Association for the Advancement of Science elected **Jonathan N. Katz**, Kay Sugahara Professor of Social Sciences and Statistics, as the deputy editor (social sciences) of *Science Advances*.

The Game Theory Society elected **Federico Echenique** a fellow.

The HSS student prize winners honored at Caltech's commencement in June included:

- **Mohar Chatterjee** (Mary A. Earl McKinney Prize in Literature – Prose Fiction)
- **George Daghlian** (Gordon McClure Memorial Communications Prize – History)
- **Maria De Angelis** (Mary A. Earl McKinney Prize in Literature – Poetry)
- **Brendan Hollaway** (Hallett Smith Prize)
- **Joanna Huey** (John O. Ledyard Prize for Graduate Research in Social Science)
- **Noah Huffman** (David M. Grether Prize in Social Science)
- **Nivetha Karthikeyan** (Rodman W. Paul History Prize)
- **Crystal Liang** (Gordon McClure Memorial Communications Prize – English)
- **Nishad Maskara** (Gordon McClure Memorial Communications Prize – Philosophy)
- **Diego Olaya** (Alexander P. and Adelaide F. Hixon Prize for Writing)
- **Akshay Srivastava** (David M. Grether Prize in Social Science)
- **Rona Yu** (Eleanor Searle Prize in Law, Politics, and Institutions)
- **Jeff Zeidel** (John O. Ledyard Prize for Graduate Research in Social Science)

The following HSS graduate students received internal fellowships to pursue their studies during Caltech's 2018–2019 academic year:

- **Weilun Ding** (Chen Graduate Fellow, 2018–19)
- **Marcos Nazareth Gallo** (Chen Graduate Fellow, 2018–19)
- **Hamed Hamze Bajgiran** (Repetto-Figueroa Family Graduate Fellow, 2018–19)
- **Yimeng Li** (Roger and Marjorie Davisson Graduate Fellowship, 2018–19)
- **Song Qi** (Michael and Ruth C. Lipper Fellowship, 2018–19)
- **Alejandro Robinson-Cortés** (Lance E. Davis Fellowship, 2018–19)
- **Sanghyun Yi** (Chen Graduate Fellow, 2018–19)
- **Hao Zhao** (HSS Chair's Council Graduate Fellowship, 2018–19)

In addition, the following graduate students received external fellowships:

- **Nicholas Adams-Cohen** (Haynes Lindley Doctoral Dissertation Fellowship, 2018–19)
- **Meng-Jhang Fong** (Ministry of Education Taiwan Fellowship, 2018–19)



Colin Camerer received an honorary doctorate from the Stockholm School of Economics in February. In September, UC Merced's cognitive and information sciences department awarded Camerer its Distinguished Cognitive Scientist award, which honors researchers who have made game-changing contributions to the study of mind, brain, and behavior.

The **Brass Division Awards** honor service to HSS and recognize teaching, mentoring, or other activities that enhance learning among Caltech students. The 2019 winners are:

- **Omer Tamuz**, Professor of Economics and Mathematics
- **Daniel Garcia**, Lecturer in Spanish
- **Joanna Huey**, Graduate Student and Teaching Assistant
- **Michael Tyszka**, Associate Director of the Caltech Brain Imaging Center

In fiscal year 2019, the research of several HSS faculty members and scholars was recognized with competitively awarded external funding:

- **Michael Alvarez**, for "Monitoring the Integrity of Elections in Southern California: The 2020 Elections," from the Haynes Foundation
- **Colin Camerer**, for "Collaborative Research: An Interdisciplinary Approach to Predicting Unequal Treatment," from the National Science Foundation
- Assistant Professor of Economics **Laura Doval**, for "Collaborative Research: Sequentially Optimal Mechanism Design," from the National Science Foundation
- **Jennifer Jahner**, for "The Medieval Experimental Imagination: Scientific and Literacy Method in Later Medieval England," from the American Council of Learned Societies
- Robert M. Abbey Professor of History **Diana Kormos-Buchwald**, for "Looking Back as We Move Forward: The Past, Present and Future of History of Science," from the Alfred Sloan Foundation, Bacon Foundation, and Lounsbery Foundation
- **Dean Mobbs**, for "Studying Survival Circuits to Understand Human Nature," from New York University and the Templeton Foundation
- Graduate student **Marcos Nazareth Gallo** and **Colin Camerer**, for "Effects of Full-time LDS Mission Service on Altruistic Behavior and Discriminatory Attitudes," from the Russell Sage Foundation
- Professor of Psychology **John O'Doherty**, for "Determining the explanatory utility of computational reinforcement-learning theories of goal-directed and habitual control at behavioral and neural levels," from the National Institutes of Health; and, with Postdoctoral Scholar in Neuroscience **Jeff Cockburn**, for "Toward a High-Dimensional Computational Description of Variation in Human Decision-Making Across a Psychiatric and Non-Psychiatric Population," from the National Institutes of Health
- **Charles Plott**, for "Algorithms of a smart market to facilitate transactions in biodiversity offset credits," from the Centre for Market Design at the University of Melbourne; and for "Markets and Government Services: Disadvantaged Students Transportation," from the Rising Tide Foundation
- **Kota Saito**, for "Collaborative Research: Modeling Stochastic Intertemporal Preferences," from the National Science Foundation
- **Omer Tamuz**, for "Strategic Communication and Information Design in Networks," from the Binational Science Foundation
- Eli and Edythe Broad Professor of English, Vice Provost, and Chief Diversity Officer **Cindy Weinstein**, for "Finding the Right Words: Alzheimer's, Literature, Science," from the Alzheimer's Association

ALSO IN THE NEWS

C-SPAN's Cities Tour included **Michael Alvarez** in its "Pasadena Weekend" in March to talk about his book *Nonpartisan Primary Election Reform: Mitigating Mischief*, which evaluates the impact of California's "top-two" primary system and the future of state primary systems.

During the federal government shutdown at the beginning of the year, *PBS NewsHour* reached out to **Colin Camerer** for insight into using game theory analysis to predict possible outcomes.

In April, *OZY* published a biographical feature on **Camerer**, which described his research on the human brain's activity when observing price bubbles and his passion for propelling his field forward.

Frederick Eberhardt discussed his research on causation in an interview for the blog *3:16 AM*, which covered "the difference between a cause and a correlation, causal discovery, understanding human emotions, facing down AI anxieties," and much more.

Diana Kormos-Buchwald spoke about Einstein's time at Caltech and the publication process and goals of the Einstein Papers Project, for which she serves as director and general editor, on C-SPAN's Cities Tour "Pasadena Weekend."

Smithsonian.com shared a story about Albert Einstein's rise to international celebrity status in 1919. **Kormos-Buchwald** commented on the strangeness of it all, considering there had been very few "famous" scientists at that point in history.

In *Caltech* magazine, **Morgan Kousser** pointed out that voter discrimination is *not* a thing of the past. "For those of us who study racial discrimination today, it can actually be quite difficult to determine public attitudes," explained Kousser. "Sociologists and social psychologists must devise ways to measure implicit bias in order to identify the attitudes people really hold and whether beliefs align with their behavior."

Kousser was quoted in a KCUR article on the lack of diversity on Kansas City school boards. He explained that at-large elections make it difficult for minority voters to elect candidates of their choice.

Dean Mobbs led a group of experts from the fields of human and animal affective neuroscience, one of which was **Ralph Adolphs**, in a discussion of how best to define and investigate fear. "Right now, research on fear in animals and in humans is really disconnected, and that has to change if we are to make progress," Adolphs said. The piece was published by *Nature Neuroscience* and *Scientific American*.

The Oxford University Press published a list of the most popular articles from their philosophy journals in 2018, which included one by **Charles (Chip) Sebens** and Sean Carroll, research professor of physics, titled "Self-Locating Uncertainty and the Origin of Probability in Everettian Quantum Mechanics."

On October 24, *Aeon* published a commentary written by **Sebens**, in which he examines whether the fundamental building blocks of reality are particles, fields, or both.

The YouTube series *Mind Field* shared an episode titled "What Is the Scariest Thing?" in which Postdoctoral Scholar in Affective Neuroscience **Tomislav Zbozinek** demonstrated a fear-conditioning experiment and **Dean Mobbs** explained what happens in the brain during those experiences.

2020 EVENT PREVIEW

~~January 9, 2020~~ | Location TBA | 12 PM **Postponed to April 9, 2020**
Visual Culture Program Event

Leslie Thornton, Professor Emerita of Modern Culture and Media, Brown University;
former Artist-in-Residence and Lecturer in Visual Culture, Caltech

January 16, 2020 | Location TBA | 12 PM
Visual Culture Program Event

Jessica Helfand, Artist-in-Residence (Winter 2020) and Lecturer in Visual Culture,
Division of the Humanities and Social Sciences, Caltech
Ralph Adolphs, Bren Professor of Psychology, Neuroscience, and Biology;
Allen V. C. Davis and Lenabelle Davis Leadership Chair, Caltech Brain Imaging Center;
Director, Caltech Brain Imaging Center, Caltech

January 22, 2020 | Dabney Hall 110 (Treasure Room) | 4 PM
Exploration: The Globe and Beyond

Karen Pinto, Associate Research Professor, Department of History, Boise State University

January 27, 2020 | East Bridge 114 | 4 PM
Visual Culture Program Event

Eileen Reeves, Professor of Comparative Literature, Princeton University

February 10, 2020 | Location TBA | 7 PM
Visual Culture Program Event

Felice Frankel, Research Scientist, Department of Chemical Engineering,
Massachusetts Institute of Technology; Science Photographer

February 20, 2020 | Baxter Lecture Hall | 4 PM
Francis Bacon Lecture

John Krige, Kranzberg Professor, School of History, Technology, and Sociology,
Georgia Institute of Technology; recipient of the Francis Bacon Award in the History and
Philosophy of Science and Technology (2020)

February 26, 2020 | Baxter Lecture Hall | 7 PM
Visual Culture Program Event

John Brewer, Eli and Edythe Broad Professor of History and Literature, Emeritus, Caltech

February 27, 2020 | Cahill, Hameetman Auditorium | 5 PM
William & Myrtle Harris Distinguished Lecture in Science and Civilization

Alberto Martínez, Associate Professor, Department of History, University of Texas at Austin

*Event details are subject to change. Please check the calendar on the
HSS website for the latest information about these and other HSS events.*

2020 EVENT PREVIEW

CONTINUED

March 3, 2020 | East Bridge 114 | 4 PM

Visual Culture Program Event

Sven Dupré, Professor of History of Art, Science and Technology, Utrecht University

March 12, 2020 | Baxter Lecture Hall | 8 PM

William & Myrtle Harris Distinguished Lecture in Science and Civilization

W. Bernard Carlson, Joseph L. Vaughan Professor of Humanities; Chair, Engineering and Society Department; Professor of History; Director, Engineering Business Programs, University of Virginia

April 15, 2020 | Location TBA | 12 PM

Visual Culture Program Event

Elin O'Hara Slavick, Distinguished Term Professor, Department of Art and Art History, University of North Carolina at Chapel Hill

April 20, 2020 | Baxter Lecture Hall | 5 PM

Exploration: The Globe and Beyond

Alan Stern, Planetary Scientist, Southwest Research Institute

April 23, 2020 | Dabney Hall (Lounge) | 7 PM

Visual Culture Program Event

Rob Giampietro, Director of Design, Museum of Modern Art, New York

April 29, 2020 | Dabney Hall (Lounge) | 7 PM

Visual Culture Program Event

Bill Odenkirk, American Comedy Writer

May 19, 2020 | Dabney Hall (Lounge) | 7 PM

James Michelin Distinguished Visitors Program

Adrienne Su, Professor of Creative Writing and Poet-in-Residence, Dickinson College

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2019 **in** REVIEW produced by:

HSS

DIVISION OF
THE HUMANITIES AND SOCIAL SCIENCES

Editor in Chief: Candace A. Younger

Managing Editor: Hanna L. Ramsey

Designer: Bacio Design & Marketing, Inc.

(Most) Photography: Van Urfalian, Lance Hayashida

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