2019

Berkeley Psychology INSIGHT

Letter from the chair

Hello Alumni and Friends!

Since our last Newsletter, many changes occurred in Psychology. We moved into our brand new building, welcomed five new faculty members, many new graduate and undergraduate students, and new staff. Our graduate students have created many new forums for getting the word out about Psychology, and these are featured in this issue of *Insight*.

Building News

After celebrating the history of our department in Tolman Hall in Spring 2018, we packed up over 50 years of items and memories and moved to our new Berkeley Way West building, which is located between Hearst and Berkeley Way to the north and south and Shattuck to the west. It was quite an endeavor to get us all moved, but we made it and are now (mostly) settled into our beautiful new building.

The new building is full of natural light, shared spaces for gathering, and open "neighborhoods" where our faculty and students work closely together. We invite you to come and take a look if you are in the area.

Our beloved Tolman Hall has now been torn down. Driving by the former site is a bit jarring as all that can be seen now is level ground. Fortunately, a lovely marker describing Tolman Hall and the history of the building will soon be installed at the site.

Graduate Student News

Our graduate students continue to be the best in the country! Our graduate students have begun a new blog and are an active presence on our department Twitter feed @BerkeleyPsych. We have added a new feature to our department website to feature our graduate students' cutting edge research. Check out the Graduate Student Highlights on our website: https://psychology.berkeley.edu.

We thank you for your generosity to the Department and encourage you to continue to give to Psychology. Your gift is a true multiplier since 100% of alumni-donated funds to the Department go directly to the support of our undergraduates and graduates. Support for our graduate students is ever more important as the cost of housing in the Bay Area continues to be sky high. This type of financial stress interferes with the cutting edge work that our students do. Please help us continue to support our students – any amount can make a real difference!

Give to Psychology, here

Also please send us your stories and life updates!

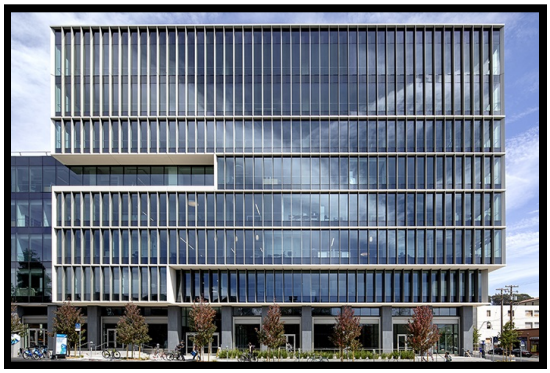
We feature alumni stories on our website and would love to hear from you!

And keep in touch with us via Facebook, Twitter, and our Department website.

Best wishes for a wonderful holiday season,

Cheers!

Ann Kring
Professor and Chair



Honors and Awards

Celeste Kidd, Assistant Professor of Psychology, was one out of two women acknowledged with the Women in Cognitive Science Leadership Award from the Psychonomic Society.

Stephen P. Hinshaw, Professor of Psychology and Psychiatry was named as the 2019 winner of the Ruane Prize by the Brain and Behavior Research Foundation. The Ruane Prize recognizes outstanding international achievement in child and adolescent psychiatric research.

Lucia Jacobs, Professor of Psychology and Neuroscience was awarded a 2018-2019 Radcliffe Institute Fellowship from Harvard University's Radcliffe Institute for Advanced Study for her work studying cognitive strategies and olfactory cues in spatial navigation.

Richard Ivry, Professor of Psychology and Neuroscience has received two innovation grants from the NIH and NSF to develop a new method for non-invasive brain stimulation. The project is a collaboration between the Ivry lab and two physicists at the Brain Imaging Center.

Linda Wilbrecht, Associate Professor of Psychology and Neuroscience, won a Winter 2019 Pilot Award form the Simons Foundation Autism Research Initiative, for a project titled, "The influence of autism risk genes on reinforcement learning and corticostriatal circuit development."

Frédéric Theunissen, Professor of Psychology and Neuroscience, received a Carl Friedrich von Siemens Research Award from the Alexander von Humbolt Foundation in recognition of his work on the perception of complex sounds.

Dacher Keltner, Professor of Psychology and founding director of the Greater Good Science Center won several awards (Science Media Awards finalist, 2018; New York Festivals of Radio Awards finalist, 2019) for his work on the Science of Happiness Podcast, a podcast showcasing researched strategies to lead a happier, healthier life.

Caitlin Mallory, a postdoctoral fellow in the Foster lab, was awarded the prestigious Helen Hay Whitney Fellowship from the Howard Hughes Medical Institute.

Support the Psychology Department as a member of the

Charter Hill Society for Psychology

We are proud to present The Charter Hill Society of Psychology, as part of the broader program in the College of Letter & Science. Charter Hill members make a three-year pledge to the Psychology Department of $1,000 or more per year. Gifts directly support the students and faculty of Berkeley Psychology.

The Charter Hill Society is a community of alumni dedicated to supporting UC Berkeley Psychology, its students and faculty, and each other. Members will be invited to special programming for Psychology, as well as to events to events with Charter Hill members from around the College. Recent lectures and events have featured Nobel laureates and leading figures in Psychology and Neuroscience.

To become a member of the Charter Hill Society, make a three-year recurring commitment at tinyurl.com/GiveBerkeleyPsych. (One-time gifts can also be made.)

For more information or questions, contact Anya Essiounina: anya.essi@berkeley.edu | (510) 642-9722

New Psychology Faculty

Jan Engelmann is studying what makes humans unique by comparing the cognitive abilities of young children to those of our closest living relatives, chimpanzees. A recent focus of the Social Origins Lab is on the development of our cultural skills, (i.e. skills for participating and exchanging knowledge in cultural groups). To this end, the lab compares the development of young children across a number of different cultures.

Arianne Eason is studying how features of our social and cultural context shape infant, children, and adults' attitudes and behavior in ways that work to reify existing inequalities and stagnate change. The Eason lab focuses on three prominent features of our social and cultural context, which may function to maintain inequality: racially segregated environments, omission of contemporary representations of Native Americans, and the presence of wealth inequality.

Steve Piantadosi is studying how children acquire structured thinking that they need for math, language, and abstraction. The Computation and Language lab (CoLaLa) relies on a variety of experimental, computational, and cross-species methodologies to understand the distinctive and shared features of the mechanisms underlying human learning. Currently, CoLaLa is pursuing these questions cross-culturally, comparing local populations with the Tsimane people of Bolivia.

Celeste Kidd is studying knowledge acquisition and belief formation, starting in infancy and continuing through adulthood. The Kidd Lab studies how learners choose which information in the world to sample, and what the downstream implications of these decisions are for their subsequent beliefs and sampling decisions. The lab uses a combination of computational modeling and behavioral methods in order to investigate questions about the cognitive systems that drive these processes.

Kevin Weiner is studying how brain structure and function contribute to measurable behaviors. He runs the Cognitive Neuroanatomy Lab and implements a multi-modal approach of anatomical measurements in living and post-mortem individuals across spatial scales to compare to functional measurements and behavior in humans. Presently, the lab has focused on high-level visual cortex and face perception as a model structure and a model behavior.

Publications

The study was published in ***PLoS ONE*** in May 2019.

New technology to monitor dopamine dynamics

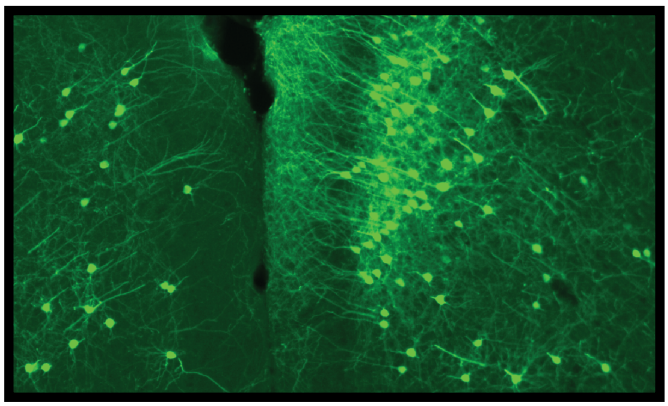
Dopamine is a neuromodulator that plays an important role in learning, motivation, and various psychiatric disorders, yet its precise cellular dynamics remain unknown. **Wan Chen Lin,** in collaboration with the Chemical Engineering department and the **Wilbrecht Lab,** helped develop and test a synthetic near-Infrared catecholamine nanosensor that reveals dopamine concentrations and dynamics in the brain. This novel nanosensor will lead to a better understanding of the dynamics of cellular processes in disorders like addiction, Parkinson's and schizophrenia.

The study was published in ***Psychonomic Bulletin & Review*** in August 2019.

RESEARCH DISCOVERIES

Using data to help people quit smoking

Ecological momentary assessment (EMA) is a data collection method that measures participants' real-time experiences as they occur in daily life. This is done via surveys completed on a smartphone multiple times per day. Participants' idiosyncratic patterns of emotions and thoughts can help researchers predict when they will engage in behaviors (e.g., substance use). Yet, it is not clear how best to design EMA studies. **Peter Soyster** in **Aaron Fisher's lab** conducted a series of focus groups to inform the design of a study of person-specific mechanisms driving tobacco use. These insights yielded a systematic and reproducible process through which future EMA studies may be optimized.

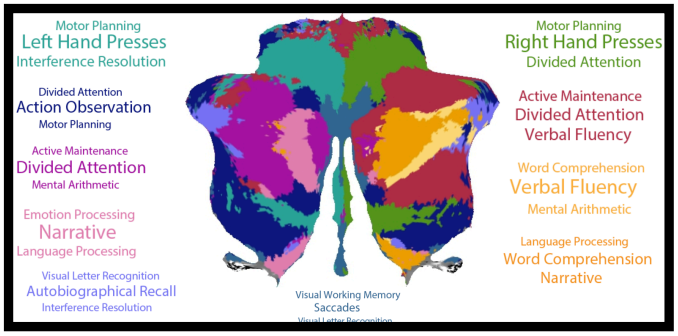


The study was published in ***Science Advances*** in July 2019.

Role of prior knowledge and curiosity in learning

Recent work has argued that curiosity can improve learning. However, being on the verge of knowing may itself induce curiosity. **Shirlene Wade** in collaboration with **Celeste Kidd** investigated how prior knowledge relates to curiosity and subsequent learning using a trivia question task. Curiosity in their task is best predicted by a learner's estimate of their current knowledge, more so than an objective measure of knowledge. Learning is best predicted by curiosity and an objective measure of knowledge, but there is only a small boost in learning from being curious. The implication is that the mechanisms that drive curiosity are not identical to those that drive learning.

Publications



The study was published in ***Nature Neuroscience*** in July 2019

Awe and perception of ideological opponents

The divide between Democrats and Republicans in the U.S. is at its widest in more than 25 years. In light of past research suggesting that experiencing the emotion, awe, can break down social barriers and increase interpersonal harmony, **Daniel Stancato** in the **Keltner lab** examined whether such experiences can undermine cognitive processes that foster hostility and conflict between those on opposite sides of contentious ideological issues. In three experiments, they found that awe can lessen conviction about one's own ideological attitudes, promote a view of society as less polarized and more cohesive, and bring people closer to those with whom they disagree.

The study was published in ***Proceedings of the National Academy of Sciences*** in August 2019

RESEARCH DISCOVERIES

A function map of the cerebellum

Tucked into the base of the skull, the cerebellum plays a key role in higher-order cognition, such as language, working memory, and problem-solving. It has also been linked to such mental disorders as schizophrenia and autism and to learning differences like dyslexia. **Maedbh King**, in the **Ivry lab**, used functional magnetic resonance imaging (fMRI) to monitor brain activity as study participants performed numerous cognitive tasks. They used the data to create a detailed map of the cerebellum that can be used as a research tool to better understand its function and to advance research of certain disorders.

The study was published in ***Emotion*** in August 2019

Numerical estimation from eye gaze

Humans, along with many other animals, are able to get a rough sense of the number of objects in a set without counting. To better understand the visual mechanisms underlying this ability, **Sam Cheyette** in the **Piantadosi lab** ran an experiment in which participants estimated the number of objects briefly flashed on a screen. Throughout the experiment, they tracked where the participants looked using an eye-tracker. They were able to predict people's estimates based on where they looked: the fewer objects people fixated, the lower their estimate — even for displays with the same number of objects. More generally, they found that number estimation relies on a "serial accumulator" algorithm, where people noisily add up small chunks of their visual scene, not fully accounting for the parts of the scene at which they didn't directly look.

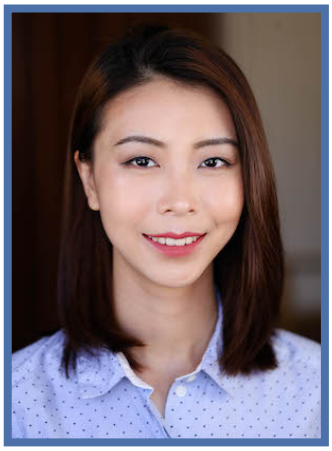
Psychology Blog

Run by graduate students to showcase research and community in our department

Vyoma Shah grew up in Mumbai, India and attended UC Berkeley. She is supervised by **Professor Matt Walker**.

What advances would you like to see in your field of developmental psychology in the next two decades?

I'd like to see a more nuanced understanding of how variation in the environment leads to variation in the brain and behavior of children—with all its pros and cons—and how external constraints affect not only children but their parents and the ways their parents parent. Our focus is so often on individuals, but I'd like us to pay more attention to larger, structural forces at play.



Mandy Chen grew up in Zhongshan in southern China and attended Peking University in Beijing. She is supervised by **Professor David Whitney**.

GRADUATE STUDENT SPOTLIGHTS

Check out the full blog here!

How will your findings on sleep have real-world implications?

Cardiovascular disease is currently the leading cause of death in the world. Improving sleep quality and quantity can both alleviate negative cardiovascular risk factors (e.g. lower blood pressure) and improve positive cardiovascular health factors (e.g. increase heart rate variability). Relative to many other risk factors in aging, sleep stands out as a modifiable factor (via interventions to improve sleep). This has tremendous implications for quality of life, public health, and cost of healthcare in the real world.

Monica Ellwood-Lowe grew up in Milwaukee and attended Stanford. She is supervised by **Professors Mahesh Srinivasan** and **Silva Bunge**.

How will your findings on emotion have real-world implications?

Currently, companies are developing machine learning models to recognize emotions, but they only train their models on cropped faces and these models can only read emotions from faces. My research shows that only looking at faces does not reveal emotions very accurately and models should consider the context as well. The method that I developed could be used to quantify the contribution of facial expression versus visual context in any video of any scenario. My findings can tell us when visual context is important and what mechanism the brain employs to perform the inference.

Psychology Outreach

Robert Knight

Sabine Kastner

Feel Dead Brains: Graduate students give a neuroscience lesson

Through the program **Bay Area Scientists in Schools (BASIS)**, Psychology and Neuroscience graduate students head off to their neuroscience lesson not only with their specialized knowledge of the brain but with an actual human brain (sheltered in a white PVC bucket) in tow. The aptly named lesson "Feel Dead Brains" allows the third grade students to learn about the basic neuroanatomy of the brain, how to run an experiment and most importantly, at the end of the lesson they get to touch the real human brain! To wrap up the lesson students can ask questions about the brain, being a scientist, or even being in school until 20th grade.

COMMUITY ENGAGEMENT

Award for Education in Neuroscience

What happens when school children become editors of a scientific journal? **Robert Knight**, MD, professor of Psychology and Neuroscience at UC Berkeley along with **Sabine Kastner**, MD, PhD, from Princeton created *Frontiers for Young Minds* to provide school-aged children with access to cutting-edge research written at an accessible level. The journal partners 3rd to 10th grade students across the world with a graduate or post-doctoral mentor to review and edit scientific content written by eminent researchers. Throughout this process, not only are youth introduced to a wide array of scientific endeavors from carbon capture to deep brain stimulation, but also career scientists are given the opportunity to describe their research in accessible terms. Knight and Kastner received the 2019 Society for Neuroscience **Award for Education in Neuroscience** for their efforts in outreach to school-aged children through the journal and their excellence in graduate and postdoctoral mentorship and training.

Undergraduate awards

Awardee: Ella Simmons

The **Departmental Citation Award** was initiated in 1955 by the Committee on Prizes to recognize distinguished undergraduate work in each department. The Departmental Citation is awarded to the top undergraduate in the Psychology Department based on all aspects of academic life including: research, coursework, writing, and service to the university.

Warner Brown Memorial Prize

In 1958 a group of former students, friends, and colleagues of the late Professor Warner Brown established an endowment to support the Warner Brown Memorial Prize. This prize is awarded annually to graduating seniors in the Department who have shown great promise in psychological research.

Awardee: Kristy Hau-Yee Lai

Swan Research Prize

The Swan family created an endowment in memory of Katherine Craig Swan, a 1932 Berkeley honors graduate in Psychology. The Swan Research Prize, funded through this endowment, is given to outstanding undergraduate researchers to support their honors projects.

Awardees: Jordan Engel, Annika From, Kristy Hau-Yee Lai, Breanna Miscione

Emeriti and Adjunct Faculty updates

Christina Maslach, Psychology Professor Emeritus, published her first work on the topic of job burnout in the 1970s. Over the course of the next several decades, Christina established a definition and a widely used inventory for the topic. In May of 2019 the World Health Organization officially recognize burnout as an occupational phenomenon that has health implications, legitimizing decades of work by Christina and her colleagues.

Sheldon Zedeck, Psychology Professor Emeritus, retired in 2010 after serving over 40 years as faculty in the Social and Personality area. In the following years, Shelly has worked to develop the Legacy Project within UCB's Emeriti Association which involves interviews with emeriti to showcase and celebrate their research, lives, and experiences at Berkeley.

Frank Sulloway, Adjunct Professor of Psychology, published *Darwin and his Bears* in 2019 to explore a historical fictional approach to the theory of Darwinian evolution written for young readers. The book retells the story of Charles Darwin's life, the impact of the Galápagos Islands on his thinking, and the impactful writing of *The Origins of the Species.*

New Staff and Incoming PhD Students

Julie Aranda joined the Psychology Department as Graduate Student Affairs Officer (GSAO) in Fall 2018. As GSAO she is responsible for overseeing graduate student degree requirements, PhD admissions, orientation, and graduate student funding.

Jennifer Ochoa is the new Undergraduate Major Advisor for the psychology student services office (Psych SSO). She graduated from Cal in the Spring of 2019 with a BA in Psych and joined the Psych SSO team in July. She is in charge of undergraduate student-specific concerns, degree checks, studying abroad, research assistants, field study, and undergraduate announcements.

Dustin Wilson joined the Psychology Department as our new Scheduling, Enrollment & Curriculum Manager in 2018. In these roles, Dustin performs all the background logistics, from course ideation and room reservations to end-of-semesters evaluations, to ensure that classes flow smoothly for students and faculty alike.

Incoming PhD class of 2019!

Back: Lindsey Burnside, Mari KB, Emily Rosenthal, Milena Rmus, Rebecca Corona, Tyrone Sgambati, Joshua Confer
Front: Madison Browne, Smriti Mehta, Catherine Callaway, Sinclaire O'Grady, Sandy Tanwisuth, Rosalinda Nava

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