

PsychologiCal

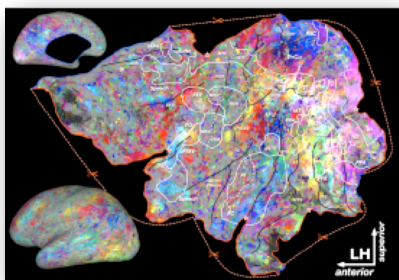
“For My Next Witness, I’d Like to Call a Brain to the Stand”: Berkeley Neuroscientists Help Inform Legal Studies

by Chris Adalio

Can neuroscience and our understanding of the brain influence judgment and sentencing in court cases? Alan Alda, host of the PBS special *Brains on Trial* and member of the Center for Communicating Science at Stony Brook University, recently met with Professors Jack Gallant and Silvia Bunge to discuss how their research could potentially inform the law.

Among neuroscientists featured on the program *Brains on Trial*, Professor Jack Gallant leads research that may someday help juries peer into an eyewitness’s brain. On the program, Gallant explained that viewing different types of images activates certain areas of the brain; for example, when we see faces, activity in the fusiform face recognition brain area increases. In his research, Gallant places subjects in an fMRI scanner and records their brain activity as they view visual stimuli; then, a computer algorithm created by Gallant and his lab converts that brain data into reconstructed images representing what subjects are viewing in the scanner.

This type of technology may someday prove useful for those in the legal system attempting to unlock eyewitnesses’ memories of crime scenes. However,



Flat map of left hemisphere; colored regions are sensitive to specific semantic categories. Inflated brain shown in lower left.



Alan Alda and Professor Silvia Bunge

Gallant suggests caution in using brain imaging data in the courtroom. While imaging data can potentially help reconstruct an image from an eyewitness’s memory, the information garnered from the process could easily be invalid if the encoded memory itself is inaccurate.

In a panel discussion moderated by Alda at the Stanford Center for Law and the Biosciences, Professor Silvia Bunge discussed recent findings regarding brain development and plasticity. Specifically, Bunge questioned whether juvenile imprisonment best achieves the goal of public safety. Pointing out the disadvantages of imprisonment, Bunge explained that the practice often leads to psychosocial and cognitive deprivation, preventing normal development of the prefrontal cortex and other areas of the brain responsible for reasoning, planning, and impulse control. Rather than punishing juvenile delinquency with prison sentences, developing successful rehabilitation programs that incorporate knowledge from the field of neuroscience may prove more effective in securing public safety.

For more information and to view a clip of Professor Gallant on the program, visit www.brainsontrial.com.



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Department News

by Megan Norr

Berkeley's psychology students and faculty have been extremely busy in recent months, giving talks, winning awards, and applying for research grants:

Distinguished psychologists frequently visit Berkeley to share their research with students and faculty, yet we rarely have the opportunity to hear from our own esteemed scholars. This fall, the Psychology Department initiated the Faculty Lecture Series in order to facilitate communication and interaction within Berkeley's psychology community. After **Jack Gallant's** September 4th talk "Beyond Localization: Detailed Maps of Visual and Linguistic Information Across the Human Brain", former Chair of Psychology **Karen DeValois** gave the Distinguished Research Lecture "The Question of Color" about her research and career. On October 23rd, **Allison Harvey** spoke about "Mental Health, Physical Health and Sleep: A Transdiagnostic (& RDoC) Approach to Empirically Grounded Treatment Development". **Bob Levenson** spoke on November 20th about the sources and consequences of emotional diversity, and **Alison Gopnik** will wrap up the series for the semester on December 11th in Valley Life Sciences 2040 with a reception to follow.

Congratulations to Behavioral Neuroscience faculty member **Lance Kriegsfeld**, who won the Faculty Award for Excellence in Postdoc Mentoring. This award, sponsored by the Berkeley Postdoctoral Association (BPA) and the vice chancellor for research, acknowledges faculty "who have gone above and beyond their academic obligations by fostering the professional and scientific development of postdoctoral researchers, while providing guidance, support, and a successful work environment."



Lance Kriegsfeld (center) with his two postdoctoral fellows, Rebecca Calisi-Rodriguez (left) and Benjamin Smarr (right)



Distinguished Research Lecturer Karen DeValois (center) with emeritus professors Stephen Palmer (left) and Rhona Weinstein (right)

The Berkeley Writers at Work series, a forum for noteworthy campus writers to discuss their work, featured Social-Personality faculty member **Rudy Mendoza-Denton** on October 14. Dr. Mendoza-Denton, whose work has appeared in *Psychology Today* and *The Huffington Post*, is also a prolific and widely followed blogger. Of the writers featured in this series, he is the first who works in new media.

Finally, continuing Berkeley's tradition of exceptional research, various faculty members recently received grants to support their research projects:

- **Sheri Johnson** obtained an NIMH R01 grant with Cameron Carter (UC Davis) to study cognitive control and reward responsivity in early onset psychosis.
- The Templeton Foundation awarded **Dacher Keltner** a grant to study the universal and cross-cultural physiology and functions of awe.
- **Iris Mauss** received a grant from the NIH's Institute on Aging to study the role of emotion regulation in coping with stress across adulthood.
- In collaboration with Jill Schneider (Lehigh University), **Lance Kriegsfeld** received an NSF grant to study the neuroendocrine mechanisms underlying how animals prioritize energetic demands such as feeding and reproduction.
- The NSF awarded **Alison Gopnik** a grant to study how children learn about causation and the circumstances under which children are better learners than adults.
- **Tom Griffiths**, **Dacher Keltner**, and **Alison Gopnik** received an NSF grant to set up a center for "big data" psychological research.

Meet the New Faculty

by Tim Campellone

As our nation continues on the road to economic recovery, universities across the country are bolstering their psychology department faculty ranks with the best and brightest prospects. The Psychology Department at UC Berkeley is a great example of this trend, with recent faculty searches resulting in the addition of three new members: Aaron Fisher in Clinical Science; Mahesh Srinivasan in Change, Plasticity, and Development/Cognition, Brain, Behavior; and Linda Wilbrecht in Behavioral Neuroscience. To get to know our new faculty hires, we asked them each three questions about their contributions to psychological science.

Tell us about a scientist who has had a big influence on you.

Linda Wilbrecht: My interest in sensitive periods for brain development has been heavily influenced by the work of Fernando Nottebohm, Michael Merzenich, and Michael Stryker.

Aaron Fisher: Peter Molenaar introduced me to person-specific research and has taught me many of the statistical methodologies that I employ in my current work.

Mahesh Srinivasan: I would say Steve Pinker has been very influential for me. I remember reading *The Language Instinct* when I was in college, and this really sparked my interest in cognitive science, and language work specifically.

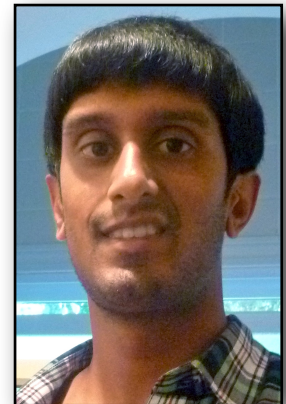
Can you tell us the punchline of a publication you are proud of?

Linda Wilbrecht: We found that mice show developmental changes in decision making behavior at about the same time as they go through puberty and the cortex is in a sensitive period of neural plasticity.

Aaron Fisher: I have a paper that was just published in *Psychophysiology* that I'm really pleased with. The takeaway is that we should be careful when we use terms like flexibility and rigidity, as the degree of observed rigidity (or flexibility) can depend on the temporal scale of analysis and the measurement frequency.



Professor Aaron Fisher



Professor Mahesh Srinivasan

Mahesh Srinivasan: A recent study suggested that children have a bias to attend to the goals of events, and that leads to striking errors, where children think that “milking a cow” and “weeding a garden” involve putting milk onto cows and weeds onto gardens, even though they know that milk comes from cows and that weeds grow in gardens!

Where do you see your research going in the future?

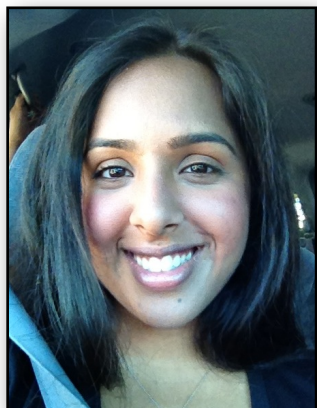
Linda Wilbrecht: We are focusing now on the effects of early life adversity and its impact on neural circuits involved in decision making and drug addiction. We are starting to do comparative studies between human subjects and rodent models.

Aaron Fisher: I want to bring my psychophysiology and psychotherapy research together by examining individuals as complete systems – psychological, emotional, physiological, and behavioral. I'm excited to explore how individuals with psychopathology are organized prior to, during, and after psychotherapy.

Mahesh Srinivasan: I'm excited to continue my work in language development, which has focused on how children learn language, and what this reveals about how they conceptualize the world.

Undergraduate Spotlight: Nidhi Satish Anamkath

by Malik Boykin



Nidhi Satish Anamkath

Nidhi Satish Anamkath is a senior psychology honors student with aspirations to become a clinical psychologist. For her current honors thesis project, Nidhi works with Dr. Aaron Fisher, one of the newest members of the clinical psychology faculty, to examine perfectionism as a specific factor involved in Generalized Anxiety Disorder. Nidhi describes her most important goal as “making sure my work benefits those who suffer from mental health challenges.” More specifically, she hopes her research

will both broaden researchers’ understanding of anxiety and obsessive-compulsive disorders as well as help psychologists discover ways to attenuate the effects of those conditions. Nidhi also hopes to ultimately reduce the stigma surrounding mental health issues among the Asian Indian population.

In addition to her honors thesis research, Nidhi is involved in Cal’s psychology community in other ways. She is the Outreach Coordinator Officer for Berkeley’s chapter of Psi Chi, the International Honor Society of Psychology, as well as a mentor for the Association for Psychology Undergraduates. Nidhi also serves as a research assistant for The Golden Bear Sleep and Mood Research Clinic, wherein she helps facilitate overnight studies, collect biological measures from participants, and coordinate a study examining Facebook usage.

PhD Alumni Reunion – June 5th, 2014

On the weekend of June 5th, 2014, the Berkeley Psychology Department invites all former PhD students back to campus for a PhD alumni reunion. The event will create a casual setting for UC Berkeley PhDs from all areas of psychology, along with their families, to return to Cal and reconnect with old friends, classmates, and other graduate alumni. A “data blitz” component will also allow alumni and professors to share current research and activities going on within the Berkeley psychology community.

“There is a special bond between people who go through the trials, tribulations, and glories of graduate school together. After graduation we got scattered about the world and with our busy careers it is hard to keep in touch,” says organizer Karen Schloss.

Karen is currently collecting contact info for potential attendees, and we ask any and all former Berkeley PhD students to email BerkeleyPsychPhD@gmail.com with your current email address.

Alumni Needed for Fundraising Campaign

Through December 31st, the New Alumni Challenge, a fundraising contest between UC Berkeley cohorts, will match all donations of alumni who graduated between 2009-2014. Gifts from undergraduate and graduate alumni from the classes of 2009–2013 are being matched 1:1 (including May 2013 graduates), while students who graduate in the 2013–14 academic year will be matched 2:1 (including August and December 2013 graduates and May 2014 graduates). Up to a cumulative total of \$1000 in donations will be matched per donor, and those who gift \$500 or more will be welcomed into Berkeley’s exclusive Charter Hill Society. One of the best parts about donating is that you can choose exactly where your gift will contribute, whether it be a Berkeley college, department, scholarship, or sports team. The campaign will continue until matching funds run out, so visit www.newalumnichallenge.berkeley.edu to show your dedication to keeping Berkeley great!

Psychology PhDs Working with UC Berkeley's New Initiative for Data-Intensive Research Training

by Carla España

Statistical struggles and data dilemmas need not derail research, thanks to the new D-Lab at UC Berkeley, an initiative that offers free data consulting, training, and advising to Cal faculty, staff, and students conducting social science research and data analysis. Through its mission to help researchers collect, process, and visualize data, the D-Lab provides a valuable resource to a wide range of departments across campus. Additionally, the D-Lab creates networks for Cal researchers to connect with those off campus who wish to use social science data.

Whether data collection is just beginning or data are ready to be analyzed, the D-Lab provides expert assistance, partly by drawing from bright minds from the Psychology Department. Amie Gordon, a recent doctoral grad from the Social-Personality area, currently serves as a statistical consultant at the D-Lab. Over the summer, Amie also organized and led a three-day workshop on multilevel modeling through the D-Lab, which was well attended by students from UC Berkeley's Psychology Department and Haas Business School. Amie encourages those with statistical quandaries to visit the D-Lab, stating, "As a

statistics consultant, I've seen how beneficial the free statistical consulting is. There are several of us, so people can typically find a consultant who can help them with their question."

The D-Lab employs another recent doctoral graduate from the UC Berkeley Psychology Department, Dav Clark. Dav started as an operational consultant and worked extensively to develop training services for those wishing to learn programming fundamentals in Python. He has since transitioned to a full-time position at D-Lab and currently assists with the development of "Collaboratool", a project for delivering accessible computational tools that scale from complete beginners to advanced users with high-performance computing needs. Dav strongly advocates the merits of D-Lab and urges people to use its services, saying, "Some folks seem to have a block. They think D-Lab isn't for them, but we are always happy to help folks on campus, so please stop by!" Anyone with a frustrating data set or even a general curiosity about statistics could benefit from the many resources D-Lab offers.

Gone, but not forgotten: The doctoral student class of 2013

Bryan Alvarez, currently on the job market (good luck, Bryan!)

Jennifer Arter, Postdoctoral Fellow, San Francisco State

Joseph Austerweil, Assistant Professor, Brown University

Daphna Buchsbaum, Assistant Professor, University of Toronto

Stephen Chen, Assistant Professor, Wellesley College

Allison Connell, Assistant Professor, Allegheny College

Amy Cook, Lecturer, UC Berkeley

Jeremy Elman, Postdoctoral Fellow, UC Berkeley

Jason Fischer, Postdoctoral Fellow, Massachusetts Institute of Technology

Amie Gordon, Postdoctoral Fellow, UC Berkeley

Tate Guelzow, Postdoctoral Fellow, San Francisco VA Medical Center

Katherine Kaplan, Clinical Postdoctoral Fellow, Stanford University

Anna Luerssen, Assistant Professor, Lehman College

Eleanor McGlinchey, Postdoctoral Fellow, Columbia University Medical Center

Meghan Miller, Postdoctoral Fellow, UC Davis MIND Institute

David Piekarski, Postdoctoral Fellow, UC Berkeley

Jenna Rinsky, Postdoctoral Fellow, Morrissey-Compton Education Center

Jennifer Stellar, Postdoctoral Fellow, UC Berkeley

Erika Swanson, Clinical Postdoctoral Fellow, Clearwater Counseling and Assessment

Annie Tao, Postdoctoral Fellow, University of Washington

Santani Teng, Postdoctoral Fellow, Massachusetts Institute of Technology

Els van der Helm, Consultant, McKinsey & Company, San Francisco

Joseph Williams, Postdoctoral Fellow, Stanford University

Meet This Year's New PhD Graduate Students

by Carla España

This semester, Berkeley welcomed 20 new graduate students into the Psychology Department. To get acquainted with the new cohort, we asked some of them the following question: *Imagine an alternate universe where you're not in grad school or involved in psychology whatsoever. In that universe, what is Alternate You doing with his/her life?*



Adam Krause, CBB

"I would probably be an Ecologist. The biology of large holistic systems is fascinating to me."



Casey Brown, CS

"I'd be a Broadway Star!"



Hooria Jazaieri, SP

"I'd either go into politics (as an ambassador or something stimulating) or be a personal chef because I love food and wine."



Dylan Connelly, CS

"I often fantasize about being a really cool front woman for a fabulous band. Unfortunately, nobody wants to hear me sing."



Joshua Peterson, CBB

"The alternative me is definitely a starving but happy artist/musician."



Daniel Stancato, SP

"I'd probably want to be an electronic music artist. Or an astronaut! Or a baseball player! No, not really — electronic music artist would be good though."



Justin Riddle, CBB

"I would be a movie editor or coding up a storm."



Carly Giffin, CBB

"The alternate me is probably a marine biologist. I've always been interested in the ocean and sea creatures, and I spend a good amount of time watching documentaries about both."

James Telesford Explores the Palette of Racial Identities

by Amanda Wang

Racial and ethnic labels tend to sort people into broad, seemingly homogeneous categories. However, recent research from Berkeley's Relationships and Social Cognition Lab (RASCL), headed by Drs. Ozlem Ayduk and Rudy Mendoza-Denton in the Social-Personality area, reveals that even for people of the same race, belonging to that particular group can take on different shades of meaning for different people. The study, led by 6th year graduate student James Telesford in collaboration with Professors Mendoza-Denton and Frank Worrell, not only reveals the wide variety of attitudes that African Americans hold about their racial identity, but also demonstrates how those attitudes predict psychological functioning.

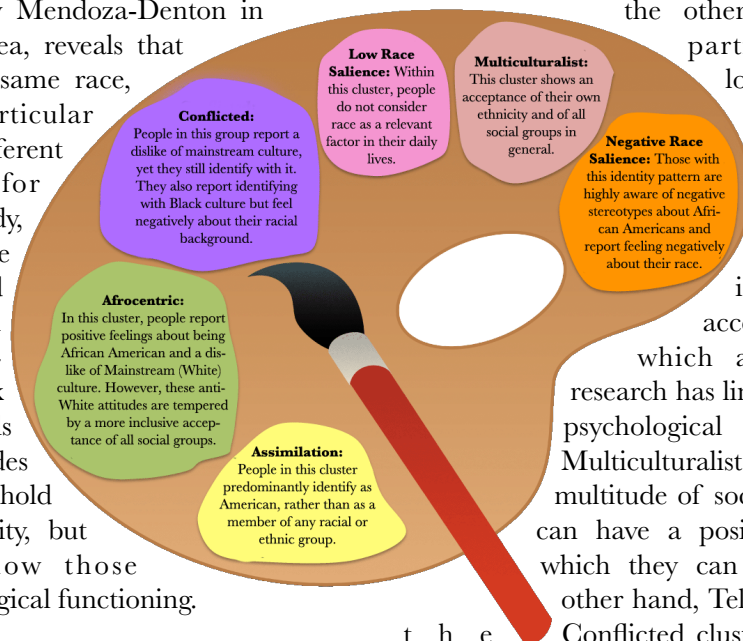
To examine the different meanings people derive from being Black in America, Telesford built off the expanded nigrescence model, a theory that describes six main attitudes that African Americans hold about their racial identity: Assimilation, Miseducation, Self-Hatred, Anti-White; Afrocentricity, and Multiculturalist-Inclusive. In a sense, these six attitudes are like the primary colors of the color wheel; in his analyses, Telesford showed that combinations of different levels of the six attitudes create unique, multidimensional identity profiles. In other words, just as an artist might mix different amounts of red, green, and blue paint to create a variety of hues, combining different levels of these core attitudes results in six unique "ways" of being African American.

Furthermore, the study linked these patterns of racial identity to important indicators of psychological wellbeing; people across these clusters differed on psychological distress (a global measure of mental health) and personal rejection sensitivity (an indicator of how much a person anxiously expects social rejection). Specifically, Telesford says, "this first study showed some really interesting differences between

the Multiculturalist and Conflicted clusters". Those in the latter group exhibited the highest psychological distress and rejection sensitivity, indicating worse mental wellbeing than those in the other groups; on the other hand, Multiculturalist participants reported the lowest scores, indicating higher wellbeing.

Expounding upon these differences, Telesford points to the importance of feeling accepted by a community, which an extensive body of research has linked to both physical and psychological health. "Those in the Multiculturalist cluster potentially have a multitude of social groups to which they can have a positive attachment and in which they can find support." On the other hand, Telesford explains, "those in the Conflicted cluster appear to want to fit in with both mainstream culture and African American culture, while simultaneously feeling extremely negative about both. These conflicting attitudes may lead them to feel a lack of belonging as if they do not fit in with any social group."

While this study reveals key information about the different shades of meaning people draw from being Black in America, along with some diverging psychological outcomes associated with each of those identities, many aspects of the overall picture remain yet to be painted. In future studies, Telesford hopes to extend his findings to other measures of psychological wellbeing, such as emotional regulation abilities in response to racial discrimination. Furthermore, to address questions regarding the development, change, and stability of these racial identity patterns, Telesford hopes to launch a longitudinal study. By tracking people over longer periods of time, researchers will learn what kind of interventions could promote change in a positive, health-promoting direction. Meanwhile, one thing remains clear: though African Americans tend to be clumped into a monolithic racial category, Telesford's research demonstrates that racial identities come in all shades.



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We are very grateful to the family and friends of Steve Jarjisian who endowed the Stephan G. Jarjisian Memorial Fund to honor Steve's memory. Sam Sakai (second from right) was awarded the inaugural fellowship at a memorial gathering this past May.

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