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"We are committed to ensuring that the pursuit of higher education is available to all of the best and brightest students in California and beyond."

A Story of Growth

The Department of Psychological & Brain Sciences (PBS) is home to 42 world-renowned faculty, 63 Ph.D. students, and 2500 undergraduate majors. Together we are pursuing cutting-edge science that expands our understanding of the mind, brain, and behavior.

The past year has been marked by tremendous growth for the Department, with 5 new faculty hires and University approval for a state-of-the-art building dedicated to undergraduate education. The new instructional classroom building will be positioned between Psychology and BioEngineering, serving students from PBS and beyond.

The number of students choosing to major in PBS is also growing rapidly. This year we are enjoying an all-time high of 2510 undergraduate students across our *PBS* and *Biopsychology* Bachelor of Science degrees. We extend a warm welcome to these scholars, who will soon join the ranks of our Gaucho Alumni family.



Psychological & Brain Sciences
UC SANTA BARBARA



Thank you to the Alumni, Faculty, Staff, Parents,
and Friends who gave back to the Department this
year. Your generosity will serve future generations of
Gauchos. Visit our new website and stay in touch at
psych.ucsb.edu

PBS Alumni Council Launched

The mission of the Council is to deepen ties between alumni, faculty, and students

To further engage our students and connect with our alumni, the Department of Psychological & Brain Sciences is turning to the experts. In May of 2019, the department launched the PBS Alumni Council. The mission of the Council is to deepen the relationships among the department's alumni, faculty, and students, and to provide greater career education and opportunities for undergraduate and graduate students.

Alumni Council members – four of the founding members are profiled below – make a significant commitment of time and resources to create meaningful connections among alumni to facilitate professional collaborations, identify talented young students to groom for jobs and internships, and to learn about and leverage the cutting-edge research done by PBS faculty and students.

Dr. Vanessa Woods, a PBS faculty member who has coordinated the annual ENGAGE:PBS alumni event is one of three PBS faculty members (along with David Sherman and Diane Mackie) who serve as liaisons to the Council. The ENGAGE events bring PBS students together with alumni who share their experience and provide mentoring. According to Dr. Woods: "The success of the yearly event has highlighted the broad support and interest among alumni for greater connection to the department. I am continually impressed by the alumni I interact with during ENGAGE. After every ENGAGE event, students share with me all of the small ways the alumni provide mentorship, from reading resumes and personal statements to connecting to jobs in online forums."

Founding members of the new Alumni Council include Deborah Bettencourt, Steve Foote, Amy Meyer, and Jeremy Sack.

With many alumni already showing their commitment to the success of the department, the Alumni Council was the next logical step. As noted by **David Sherman**: "There are many ways that alumni have been involved with the department, from attending events like ENGAGE where they lead panels, to making generous financial donations, to contributing Classnotes for Inside Psychology. The Alumni Council is providing an opportunity for the department's former students to magnify all of these contributions and make even more of an impact in the lives of the department's current students."

Interested alumni should contact Dr. Vanessa Woods about participating in the ENGAGE event held every April as part of All Gaucho Reunion, and any alumni interested in getting more information about the PBS Alumni Council are encouraged to contact Dr. Vanessa Woods vewoods@ucsb.edu, Dr. David Sherman sherman@ucsb.edu or Dr. Diane Mackie mackie@ucsb.edu.

We are proud to introduce the founding members of the PBS Alumni Council. Sherman added: "We're grateful to the founding members for their dedication, excitement, and ideas about how to deepen the lifelong connection Gauchos have to the department—where they took classes, made friends, and had life-shaping experiences."

Deborah Bettencourt, B.A., 1989

Deborah moved from Northern California in 1985 to attend the University of California, Santa Barbara. She graduated in 1989 with a B.A. in Psychology and completed a water polo career that spanned two collegiate national championships and All-American honors. Deborah has nearly 25 years of corporate operations experience in the medical device industry. In 2007, she joined Sientra, a medical aesthetics company. In her current position as Vice President of Customer Experience and Corporate Administration, Deborah oversees Sientra's corporate operations to include global human resources, facilities, and customer experience. On the alumni council, Deborah noted: "I am thrilled and honored to join the UCSB Psychological & Brain Sciences Alumni Council. When I was at UCSB, I was frequently asked, 'What are you going to do with a psychology degree?' I usually responded, 'I don't exactly know yet, but I'm learning about humans and I deal with them every day.' My professional success has been greatly influenced by the connections I have made personally and professionally. I am excited to share my story and connect with the talent at UCSB." For more on Deborah, please see her alumni interview on **page 25**.



Steve Foote, B.A., 1967

Steve Foote received his B.A. in Psychology from UCSB in 1967 and his Ph.D. in Psychology (now Brain and Cognitive Sciences) from MIT in 1972. He then became a postdoctoral fellow at the National Institute of Mental Health (NIMH) before moving to the Salk Institute in San Diego from 1976 to 1984. He then joined the faculty of the Department of Psychiatry at the UCSD School of



Medicine. Throughout his research career he studied the anatomy, physiology, and behavioral functions of brain noradrenergic, serotonergic, and dopaminergic neurons. He left UCSD in 1996 to join the extramural component of NIMH as Director of the Division of Neuroscience and Basic Behavioral Science. This Division oversees NIMH funding of research grants in these scientific areas. He also had major responsibilities in interfacing the politics and science of autism across the federal government. He is now retired, living in Bethesda, Maryland, and is enthusiastic about participating in the Alumni Council and interacting with students and faculty. A first-generation college

graduate, and a junior college transfer, he especially appreciates the crucial role UCSB played in launching his lifetime passion for the brain sciences.

Amy Meyer, B.S., Bio-Psychology, 1994

Amy earned a B.S. in Bio-Psychology from the University of California, Santa Barbara in 1994, and completed the Advanced Human Resources Executive Program at the University of Michigan, Ross School of Business. Amy is Chief People Officer for AppFolio, Inc where she leads AppFolio's human resources functions, partnering with leaders throughout the organization to attract, develop and retain the right people for our growing company across 5 national offices. Before joining AppFolio, Amy was the Vice President of Human Resources at Citrix Systems where she was responsible for the company's human resources business partners, talent acquisition, talent management and all HR aspects of mergers and acquisitions. Amy has been named one of the Top 50 Women in Business on California's Central Coast. With a passion for helping women across all different fields develop their leadership skills, Amy is a mentor to a number of emerging women leaders and looks forward to working on the Alumni Council to provide mentorship for the current UCSB students in Psychological & Brain Sciences as well as recent graduates. About the Alumni Council, Amy said: "I'm excited to participate in the Council to connect with UCSB students in Psychological & Brain Sciences as well



as recent graduates to provide coaching and support in their career search and connect them to local opportunities."

Jeremy Sack, Ph.D., 2005

Jeremy Sack graduated from UCSB with his Ph.D in social psychology in 2005. In 2008, he joined LRW (<https://lrwonline.com/>), a global leader in using research, analytics, deep human understanding, and business consulting models to drive strategy, branding, innovation, communications, and experiences for Fortune 500 companies. After joining as a Research Director, he later founded LRW's Pragmatic Brain Science Institute®, which uses behavioral science to provide companies with a holistic understanding of humans and competitive advantage. He was named President of LRW in 2018. Jeremy was also part of a delegation that advised the Obama White House and cabinet secretaries on how to reduce racial bias in law enforcement using virtual reality. He lives in Los Angeles with his wife and son and is looking forward to working on the Alumni Council and advising students on how to transition successfully to their professional careers. Ψ



Members of the new Alumni Council joined students, faculty, and staff at the 2019 ENGAGE alumni celebration.

New Faculty Spotlight

Hongbo Yu, Ph.D. joined the department as an Assistant Professor in 2019.

Tell us about your research. Describe a project that exemplifies your approach to science.

My research aims to elucidate the neurocognitive mechanisms of social emotions (such as guilt and gratitude) and their moral significance. To illustrate this, imagine that on a road trip your car breaks down in the middle of nowhere and it starts raining heavily. Your worries grow as it becomes colder and darker and there is no sign you can sort it out by yourself. An approaching car stops and the driver goes out of his way to lend you a hand. The two of you work very hard in the rain for an hour until you get your car working again. How would you feel toward the helper?

Grateful, right? But what are the thoughts and considerations (or “cognitive antecedents”, to use the term of some emotion scientists) that lead to your grateful feeling? These may include the thoughts about the desirable outcome of the situation, about the helper’s effort and kindness, and so on. In one of my studies, I investigated how the brain “converts” such cognitive antecedents into gratitude. Critical to this line of my research, I have developed interpersonal interactive tasks where participants receive help from others (for gratitude research), cause trouble for others (for guilt research), or are offended by and receive apologies from others (for forgiveness research). Eliciting social emotions in life-like interactive contexts lies at the heart of my approach.

Another aspect of my research, which I will be focusing on in the future, is to understand the moral significance of social emotions. Social emotions are frequently the target of our moral evaluation. We naturally regard others (and ourselves) morally good or bad for having or lacking certain emotional reactions in a given situation (imagine someone who doesn’t feel grateful in the above example), and for performing a given act with or without certain emotions (e.g., “Bob visits his sick partner at hospital without feeling sad or compassion”). The psychological mechanisms underlying such moral intuitions are still puzzling, given that emotions (or the lack thereof) are



Hongbo Yu, Ph.D.

typically out of our voluntary control and that we normally don't blame or praise others for something out of their control. I will be doing research on how these seemingly contradictory intuitions come to be and how they could be reconciled, perhaps by appealing to the responsibility we implicitly assign to an agent for the acquisition (or its absence) of relevant characters and personalities underlying their reproachable emotional responses (or the lack thereof).

Your academic history includes an undergraduate degree in Physics and a graduate degree in Psychology from Peking University, followed by postdoctoral work at Oxford and Yale. What is one lesson on science that you took from each place you've been at—and what's one goal you have for your research at UCSB?

I went to Peking University (PKU) as a high school graduate, knowing nothing about academic life or research in psychology. I left with a PhD degree in psychology, a post-doc fellowship, and multiple first-authored papers at hand. In a sentence, the 10 years at PKU shaped my career as a psychologist. Initially, I chose physics as my major to fulfil my lifelong dream of being someone like Stephen Hawking or Albert Einstein – my childhood heroes. Realizing how unrealistic this dream was during my freshman year packed with math and physics courses, I picked up, quite randomly, a book entitled *Psychology and Life* and read it through during my first summer at college. For the first time I learned that psychology is a branch of natural science which adopts empirical methods to understand how the mind/brain behind behavior works. This book has indeed brought psychology into my life. I joined Prof. Xiaolin Zhou's lab in the Department of Psychology at PKU during my sophomore year and started leading an fMRI project a year after, which was pretty unusual for an undergraduate at that time. My advisor further supported me to present my work at international conferences, including the annual OHBM meeting in 2010. These experiences have provided me with a clearer picture of what a career in psychology would look like and made me confident in going down that road.

I see my PhD as a rigorous training on how to do real science. Among other things, one lesson was extremely important for my later career, which is the ability to track down a research topic in the existing literature and identify the one important missing piece. Through constantly questioning yourself and being questioned by your advisor and peers, you obtain a clearer and more distilled understanding of the significance of the question you are interested in and how you should set out to test it. During a PhD and onward, there are no already defined questions out there, waiting for you to answer them. Therefore, it is crucial for a researcher to develop the skill to identify and formulate good research questions. This is not to say that before you acquire such a skill you can/should not start doing research. If that were the case, you would never acquire the skill. In fact, asking good questions and doing good research are iterative processes. The first experiment I did during my PhD was handed over to me by a senior student in my lab, which involved a novel experimental manipulation to elicit interpersonal guilt. Knowing nothing about guilt at that time, I collected and analyzed the data while at the same time read each single paper

about guilt that I could find. The more I read, the more hypotheses came to me which I immediately set out to test in my data (whenever it was possible); on the other hand, the experience of data collection and analysis gave me a more critical perspective on the existing literature and a clearer sense of where to go. This “windfall”, “leftover” project has grown over the past a few years into three full-fledged doctoral theses (of myself and the 2 PhD students I co-supervised) and eight research papers at various stages.

At Oxford and Yale, I am working together with prominent social psychologists and neuroscientists and building broad academic connections. My advisor, Dr. Molly Crockett, is my role model, not only in how to do research, how to think through profound scientific questions, and how to zoom out from technical details to arrive at a bigger picture of a project, but also in how to give presentation, mentor and support trainees, manage a lab, build and maintain collaborations, and so on and so forth. These skill sets and vision are invaluable to me, especially because I had not had any experience in graduate school in the Western world before joining her lab. One of the most important lessons I have learned from her is an efficient time management strategy and multitasking skills.

At UCSB, my goal is to build a collaborative and interdisciplinary team to answer questions about how social emotions like guilt and gratitude shape and are shaped by moral cognition. In particular, I am excited to examine: 1) how morally questionable helping behavior undermines the beneficiary’s gratitude (“Would you be grateful to Robin Hood or turn him in for robbery?”), and 2) how committing an unethical behavior and feeling guilty about it deprives one’s standing to blame others for a similar unethical behavior (“Why can he who is without sin cast the first stone?”).

As an early career scientist working in the era of social media, what is your approach to using online platforms for science communication?

I am a latecomer to academic social media. In China, the culture of spreading research related news on social media hasn’t become common practice. Since I started using Twitter regularly after I set up for my first post-doc position at Oxford, I have been using Twitter primarily as a channel to keep myself informed about the most recent developments in my field: Some researchers post their latest preprint on social media, others share their reflections, debates or advice on various research- or career-related topics. I also use Twitter to disseminate my own publication and for career development (the most recent one being the announcement about my position at UCSB). I do think that that helps make your work and you more visible in your field.

How has your training in and continued reading of philosophical texts informed your work as a neuroscientist?

To be honest, I don't have any formal training or degrees in philosophy. My taking some courses in philosophy and continued reading of philosophical texts is purely out of my intellectual curiosity. Broadly speaking, reading philosophy helps my research in two ways. For one, philosophy teaches me how to think logically and critically. For example, those who have read Plato's dialogues are probably familiar with his "Socratic questioning", namely, start pursuing the knowledge of X with a seemingly obvious definition question "What is X", proceed by rejecting ungrounded assumptions and distinguishing confounded usages of language along the way and finally arrive at a clearer understanding of X. In my research, I have been dealing with emotion terms that are both scientific concepts and mundane everyday language, such as gratitude, guilt, blame and praise. Philosophy equips me with the insight into the deep structure and complexity embedded in our all-too-familiar everyday experience of emotions and morality.

Another way my research has been benefited from reading philosophy and other related disciplines such as anthropology, sociology and history, is that by reading broadly I can obtain a bird's-eye view of the topics I am working on. For example, philosophers, anthropologists and sociologists are all interested in gratitude, but each with a different angle to psychologists and neuroscientists: philosophers ask normative questions about gratitude such as "what are the conditions that warrant/undermine grateful feelings?", anthropologists and sociologists characterize the various forms of gratitude expression and gift exchange across cultures and the social norms that govern them. Keeping an eye on these related disciplines has not only satisfied my intellectual curiosity, but also inspired me to see some aspects of social emotions that psychology and neuroscience can help to clarify, which are not easily seen solely within any one discipline.

What are some of your non-academic hobbies, interests, or pursuits?

I like translation. It gives me the opportunity to see how thoughts can be instantiated differently in two languages, in ways that are both profound and subtle. In the junior year of college, I translated two chapters from Professor Michael Gazzaniga and colleagues' masterpiece, *Cognitive Neuroscience*, which appear in the Chinese translation of this book. In graduate school, I took part in several seminars on the moral philosophy and psychology of Thomas Aquinas. Since then I have been interested in medieval philosophy of mind, especially the work by two great thinkers of that time (perhaps of all time), Saint Anselm of Canterbury and the Angelic Doctor Thomas Aquinas. The more I read their works, the more I became dissatisfied with the wide spread stereotype that 'medieval' is a synonym for 'dark age'. I therefore decided to translate their works as well as contemporary philosophical studies and biographies on or of them into Chinese, with the hope of changing at least some people's impression of them. So far, I have completed the translation of Saint Anselm's three *Philosophical Dialogues* and a contemporary philosophical work on the theories of cognition in the later middle ages (by Robert Pasnau at the University of Colorado Boulder; Chinese translation published in 2018 by Peking University Press). I am hoping to work on the translation of a monologue that introduces the philosophy of Thomas Aquinas. 🧘

The Work of a Lifetime

Psychologist Brenda Major honored for 40 years of work on the effects of stigma and discrimination on identity



Brenda Major, Ph.D.

Every day, stigmatized people — the overweight, gay, minorities — face assaults on their self-esteem. And yet they display a striking resiliency. Brenda Major wants to know how they do that — and she's spent 40 years studying it. "I'm really interested in how people cope and adapt to adversity," said Major, a distinguished professor in PBS.

In honor of her decades of work, the International Society for Self and Identity (ISSI) has honored Major with its **Distinguished Lifetime Career Award**. The award "recognizes a scientist who has made outstanding contributions to our understanding of self and identity throughout their career," according to the organization. Major, an experimental social

psychologist, will be honored at the ISSI's Society for Personality and Social Psychology preconference in New Orleans in February 2020.

Most well-known for her work on stigma and stigmatized populations, she studies what she calls the "psychological immune system, these things that we do to protect ourselves psychologically in the face of various threats to our identity."

Michael Miller, professor and chair of the Department of Psychological & Brain Sciences, called the award a fitting tribute to her work and contributions to psychology.

"Everyone within the department was delighted to hear about this prestigious award to Brenda," he said. "She is one of the world's leading scholars on social stigma and how people maintain their self-esteem in the face of discrimination and other negative life events, and her impact on the field of social psychology cannot be overstated. Brenda continues to be a great source of pride and inspiration to all of her students and colleagues." Ψ

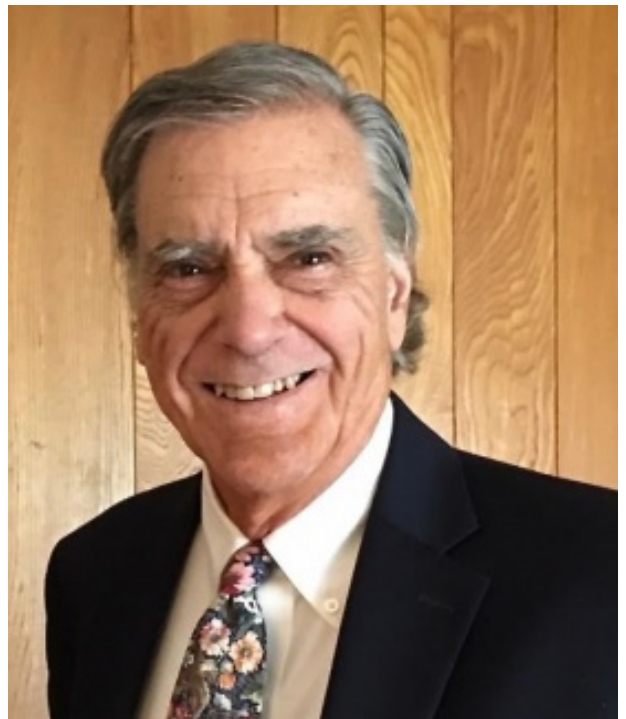
"I'm proud, humbled, and deeply honored to have received this award for the work that I've been doing on identity and how people protect and maintain positive identity in the face of adversity and social stigma."

Silver Anniversary

Emeritus Professor David Hamilton retires from organizing social psychology conference after 25 years

This past fall marked Professor David Hamilton's 25th year organizing the Person Memory Interest Group Conference. He retired from organizing "Person Memory" this year and was celebrated for his contributions at the meeting in Union, Washington. Organizational duties will remain in the UCSB family. Esteemed UCSB alums (and former Ph.D. students of David), Steve Stroessner (Professor of Psychology, Barnard College) and Jacqueline Chen (Asst. Professor of Psychology, University of Utah) will co-organize the meeting.

Person Memory is one of the major yearly gatherings for social cognition researchers. It is a 3-day conference in a remote location prior to the annual meeting of the Society for Experimental Social Psychology each fall and was the original preconference in social psychology. It proved so successful that now every major social psychology conference has multiple pre-conferences. In many ways the history of the social cognition movement within social psychology can be traced back to the first Person Memory meeting in 1977. At the time, this meeting was a small gathering of friends interested in emerging cognitive psychology models of the mind and their potential applications to understanding social perception. Hamilton was a part of this founding group. This meeting led to the publication of the influential book "Person Memory: The Cognitive Basis of Social Perception," co-authored by Hamilton.



David Hamilton, Ph.D.

As the influence of the social cognition perspective grew so did the Person Memory conference. The first year that David became organizer (1994) there were 32 attendees. It now attracts 70-80 attendees from all over the world. In addition to being a place to learn about cutting-edge research it is also an opportunity for researchers new to social cognition to get to know established leaders in the field. The supportive culture of the meeting makes it a special event that many social psychologists across generations look forward to each year.

David's stewardship will be missed. His contributions to the Person Memory meeting are among his many important contributions to social psychology. His dedication and hospitality is a big reason that that conference has such a welcoming and intellectually stimulating culture. He has wisely left the conference in Steve and Jackie's capable hands and they will undoubtedly continue the culture that makes the conference so cherished. Although David is no longer an organizer, everyone who attends Person Memory looks forward to David's continued presence at the meetings. On behalf of the Department, we thank David for being such a staunch advocate for the field of social psychology! Ψ

Article by Asst. Professor Kyle Ratner

In Memoriam

PBS Professor John Cotton is honored for his lifelong service to psychology, UCSB, and the Santa Barbara Community



John Cotton, Ph.D.

It is with a heavy heart that we share the news that former UCSB Professor John Cotton passed away this year at age 93. Dr. Cotton completed his doctoral studies at Indiana University and came to UCSB in 1960. In 1961, he became chair of the Psychology Department and oversaw the construction of the Psychology Building and the establishment of the doctoral program. In 1966, he received a joint appointment as Professor of Psychology and Education. He was instrumental in mediating the black student takeover of the Computer Center in North Hall in 1968 and improving educational opportunities for black students. He was among the first of the mathematical psychologists and made important contributions to animal learning, concept formation, computer assisted instruction and artificial intelligence.

He wrote many papers and two books on statistics, was a very generous consultant on statistical problems, and continued to work on research until last year. He served as Associate Dean of the Graduate Division among many service contributions to UCSB, psychology, and the Santa Barbara community. He retired from UCSB in 2012. Ψ

New Faculty Spotlight

Regina Lapate, Ph.D. will join the department as an Assistant Professor in 2020.

Tell us about your research. Describe a project that exemplifies your approach to science.

I am fundamentally interested in understanding mechanisms that promote adaptive profiles of emotional responding and regulation. In everyday life, we are frequently exposed to a remarkable range of rapidly-varying emotional and neutral events, and challenged to react to them in a context-sensitive manner. How do we maintain context-appropriate responses while navigating our socially complex environments, such as when we prevent emotional responses to one event—like a disagreement with a spouse—from unwarrantedly spilling over onto and coloring your interactions with a co-worker a few moments later?



Regina Lapate, Ph.D.

In a series of experiments, I have examined contextual and neurobiological factors supporting this little-studied form of emotion regulation—the regulation of “affective spillover”. First, by manipulating individuals’ ability to consciously detect emotional and neutral stimuli, I found that our conscious awareness of emotional triggers (i.e. the source-of-emotion) helps to prevent emotional responses from influencing our subsequent likeability judgments of novel people. In other words, awareness seems to help us calibrate emotion-provoked biases. Next, I sought to identify neural mechanisms that may help promote the regulation of affective spillover. For example, I used a non-invasive brain stimulation technique, transcranial magnetic stimulation (TMS), to temporarily inhibit the function of one of the key brain regions thought to be involved in this process, the lateral prefrontal cortex. I found that after lateral-prefrontal inhibition, participants’ judgments of novel people became markedly influenced by previously-processed (and unrelated) emotional information, shedding light onto the neural underpinning for an emotion-regulatory process crucial to our successful everyday functioning. In my work at UC Berkeley, I am extending this program of research to examine the representational properties of the lateral prefrontal cortex during emotional processing. The ultimate goal of this research program is to increase our understanding of how we can best ameliorate suffering and gain insight into the neurobiology that promotes resilience and a satisfying, purposeful life.

You're joining the faculty of Psychological and Brain Sciences with a rich academic history that includes an undergraduate degree in psychology from the Universidade Federal de Minas Gerais (UFMG) in Brazil, a Ph.D. in psychology from the University of Wisconsin-Madison, and a postdoctoral fellowship in neuroscience at UC Berkeley. What is one lesson on science that you took from each place you've been at—and what's one goal you have for your research at UCSB?

First, I should say that I feel very privileged to have had the opportunity of being in such an array of diverse environments during my training! At UFMG in Brazil, my love for the field of affective neuroscience began well before I knew its name. I was being trained as a clinical psychologist, and the experience of realizing first hand that not all emotional suffering has a traceable environmental source that can be readily dealt with using standard cognitive therapy techniques motivated me to want to learn all that I could about the neurobiological basis of emotion. So, the first lesson for me was that direct, practical experience can be a major source of inspiration for one's research endeavors.

The sense of incompleteness that I felt in the clinic propelled me move to Madison, Wisconsin for an exchange program focused on neuroscience, and it was there that I joined Dr. Richard Davidson's Lab for Affective Neuroscience. Throughout my PhD I was mentored by a highly supportive advisor who placed a high value on fearlessly pursuing a research program that you are truly passionate about—even it involves embracing novel methods and laboriously figuring out important but unfamiliar details from scratch (e.g., which emotional-image contrasts and dimensions are best suited for a novel visual-awareness manipulation technique to work). This approach, while more time-consuming than if I had stayed within my "comfort zone", led me to establish cross-disciplinary collaborations (such as with visual scientists) that have significantly strengthened and deepened my work, and given rise to long-lasting friendships.

My postdoctoral training with Mark D'Esposito at UC Berkeley has provided me with another example of an extraordinarily supportive research environment, and my third lesson: Mark trains postdocs to feel comfortable with autonomy, and encourages them to build their own support team of mentees to accomplish that goal. The experience of mentoring a brilliant group that included a master's student and talented undergraduate research assistants in journal clubs, programming sessions, as well as on many afternoons synchronizing our every move for optimally timed TMS/fMRI experiments, only cemented my enthusiasm for an academic career while further highlighting the fundamentally rewarding aspect of doing science as a team.

At UCSB, I hope to combine across these lessons to build a methodologically diverse affective neuroscience lab that values open and collaborative science. I will continue to use brain stimulation (e.g., TMS) methods together with functional neuroimaging and electrophysiology to uncover how we adaptively and effectively regulate our behavior following emotional processing. Of the many

yet unanswered questions in affective neuroscience, I would like to gain a deeper understanding of the organizational principles of frontal lobe function that determine the duration, as well as our awareness of, emotional responses—as well as how those factors converge to prevent the formation of biased emotional memories.

As an early career scientist working in the era of social media, what is your approach to using online platforms for science communication?

I think social media presents an excellent opportunity to better democratize the communication of science, as well as a way to melt geographical boundaries and hear the voices of students and established scientists across the globe. For example, I have been long devouring the excellent curation of the most recent and exciting findings in my field that “science Twitter” provides. Open science innovators have a particular strong presence in that platform, and I have learned a lot through it—so I would certainly encourage people to join and listen in when they have a chance.

What experiences outside of academic research have shaped your research most?

This might sound like a cliché “psychologist studies psychology to understand family” story, but sometimes clichés ring true: I was raised by parents who have two very different “affective styles”—one is a chronic optimist who boldly tackles novel situations with little hesitation, whereas the other is a skillful worrier who will meticulously identify and attend to every detail that could theoretically go wrong with any plan. They are both living content and purposeful lives, but they are navigating the world in two fundamentally different ways. Those persistent biases in how one sees the world—whether one views the world as an amicable place and feels equipped with the resources to handle its challenges—emerge early in development, and pervasively influence our mood, attitudes, and decisions in everyday life. Thus, from early on, I became eager to understand where those propensities to experience different affects came from, and how they are stored in our brains to modulate our behaviors.

What are some of your non-academic hobbies, interests, or pursuits?

I really love biking! I didn’t learn how to ride a bike until I was 21 and moved to the very bike-friendly city of Madison, Wisconsin—but once I discovered it, it quickly became my primary way to commute, and also one of my favorite things to do on the weekend with my husband and our friends. I very much look forward to biking closer to the ocean and discovering many amazing new trails once we move to Santa Barbara. In addition, I was trained in a music conservatoire for several years in Brazil, so every once in a while, I also enjoy creating weird versions of my favorite songs on the guitar or ukulele. Ψ

The Universality of Shame

Shame on you. These three simple words can have a devastating effect on an individual's psyche. But why is that? How is the feeling of shame generated, and what is its purpose? Some theorists argue that feeling shame is a pathology, a condition to be cured. Others dismiss it as a useless, ugly emotion.

A research team at UC Santa Barbara's Center for Evolutionary Psychology and the University of Montreal, however, suggest something altogether different. **Shame, they argue, was built into human nature by evolution because it served an important function for our foraging ancestors.**



John Tooby, Ph.D. and Leda Cosmides, Ph.D.

Living in small, highly interdependent bands, our ancestors faced frequent life-threatening challenges, and they counted on their fellow band members to value them enough during bad times to pull them through. Being devalued by others — deemed unworthy of help — was literally a threat to their survival. Therefore, when considering how to act, it was critical to weigh the direct payoff of a potential action (e.g., how much will I benefit by stealing this food?) against its social costs (e.g., how much will others devalue me if I steal the food — and how likely is it that they will find out?).

The researchers, including UCSB Professors **John Tooby** and **Leda Cosmides**, hypothesized that the intensity of anticipated shame people feel is an internally generated prediction of just how much others will devalue them if they take a given action. Moreover, if this feature was part of human nature, it should be observed everywhere — in every culture.

To test for universality, they selected a linguistically, ethnically, economically and ecologically diverse set of cultures scattered around the world. In these 15 traditional, small-scale societies, the

researchers found that the intensity of shame people feel when they imagine various actions (stealing, stinginess, laziness, etc.) accurately predicts the degree to which those actions would lead others in their social world to devalue them. Their findings appear in the ***Proceedings of the National Academy of Sciences***.

According to the authors, shame — like pain — evolved as a defense. “The function of shame is to prevent us from damaging our social relationships, or to motivate us to repair them if we do,” said lead author Daniel Sznycer, an Assistant Professor of Psychology at the University of Montreal.

Shame inclines you to factor in others’ regard alongside private benefits so the act associated with the highest total payoff is selected, the authors argue. A key part of the argument is that this motivational system is a part of our species’ biology. “If that is true, we should be able to find this same shame-devaluation relationship in diverse cultures and ecologies all around the world,” the authors’ noted.

To test this hypothesis, the team collected data from 15 traditional small-scale societies in four continents. The people in these societies speak very different languages (e.g., Shuar, Amazigh, Icé-tód), have diverse religions (e.g., Hinduism, Shamanism), and make a living in different ways (e.g., hunting, fishing, nomadic pastoralism). If shame is part of universal, evolved human nature, the research should find that the emotion closely tracks the devaluation of others, for each specific act, in each community; but if shame is more akin to a cultural invention like agriculture or the alphabet, present in some places but not others, they should find wide variation from place to place in this relationship. Indeed, anthropologists have long proposed that some cultures are guilt-oriented, some are fear-oriented, and some are shame-honor.

Yet, the authors found the predicted relationships everywhere they tested. “We observed an extraordinarily close match between the community’s negative evaluation of people who display each of the acts or traits they were asked about and the intensities of shame individuals anticipate feeling if they took those acts or displayed those traits,” the authors’ said. “Feelings of shame really move in lockstep with the values held by those around you, as the theory predicts.”

These findings suggest that shame is a biological capacity that is part of human nature (such as the ability to speak a language), and not a cultural invention present only in some populations (such as the ability to read or write).

“Shame’s reputation isn’t pretty,” the authors’ concluded, “but a closer look indicates that this emotion is elegantly engineered to deter harmful choices and make the best of a bad situation.” 🧠

A Trained Eye

UCSB researchers show that category learning can be influenced by where an object is in our field of vision



Humans are pros at category learning — the process by which we classify objects, concepts, and events into groups that share certain features that are relevant to us. We do it when we distinguish friends from strangers, decide whether or not to eat a wild berry, and even when we scan letters as we read a book.

Category learning is considered a high-level cognitive process that depends on abstract mental representations of the sensory information. But UC Santa Barbara

researchers **Luke Rosedahl**, **Gregory Ashby** and **Miguel Eckstein** have discovered that category learning sometimes depends on representations from more primitive parts of the brain's visual cortex.

"This is important because the kind of learning that we found to be specific to the visual field is almost a subconscious kind of learning," said Luke Rosedahl, a graduate student in UCSB's interdepartmental graduate program in Dynamical Neuroscience (DYNS) and lead author of the team's paper, "Retinal-specific category learning," published in the **Nature Human Behavior**. "It's the kind of learning used by radiologists, for example, when they're looking at scans to determine whether what they're seeing is a tumor or not. Or by TSA screeners when they're looking at scans of the bags and trying to find prohibited items; these are examples of implicit categorization."

Those experienced radiologists and TSA screeners amass their knowledge over the course of many trials, Rosedahl explained, so their decisions often are not particularly conscious, but come in the form of feelings and hunches.

"Initially, they can't always tell you why they feel like there's a tumor there, or why they feel like a luggage scan has a prohibited item," he said, "but they do, and then they look more closely to see if it does or not." However, Rosedahl and colleagues found that where the objects appear in one's field of vision can affect the person's category learning ability. Thus, a radiologist who is

accustomed to seeing tumors on the right side of his or her field of vision may not have the same level of success if the tumor is located on the left. And screeners who are used to objects scrolling by in one direction may not detect prohibited items coming from the opposite direction. In effect, they develop “**categorizing blindspots.**”

Their study indicates that some types of category learning depend on visual representations in the primary visual cortex, which is located at the very back of the mammalian brain and is specialized in pattern recognition. This primitive visual cortical area has neurons that respond to specific patterns in particular areas of the visual field, whereas neurons in later visual cortices respond to stimuli anywhere in the visual field. “Our implicit categorization system relies on much lower visual information than previously thought,” he said.

Now the authors want to explore whether visual training protocols can be developed to avoid retinal-specific category learning. Critical medical and life-saving decisions could rely on it. Ψ

Article by Sonia Fernandez adapted from: <https://www.news.ucsb.edu/2018/019144/trained-eye>

In Memoriam

Professor Daphne Bugental is remembered for her outstanding research, teaching, and service

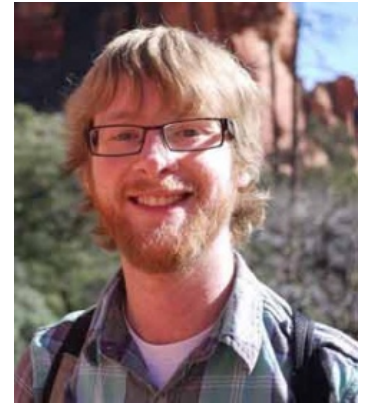
It is with great sadness that we share the news that former Professor Daphne Bugental passed away last year. She joined the UCSB faculty in 1974, and for the next four decades, helped to build and advance our Department, while contributing to our campus and community in countless ways. She worked with faculty across disciplines to create the Developmental and Evolutionary Psychology Program, she served as department chair, as acting dean of the Graduate Division, and as chair of numerous Academic Senate committees over the years. She authored and obtained passage for the faculty parental leave policy for the entire UC system. She was a deeply dedicated teacher and mentor, and was honored in 1996 with the UC Presidential Award for fostering Excellence in Undergraduate Research. Professor Bugental was a leader in the field of social psychology, studying human interactions of all kinds, with a special focus on parent-child relationships. Based on her research, she developed a program for at-risk children that led to a reduction in child abuse – a profound and deeply meaningful impact of her work that will be an enduring part of her remarkable legacy. She was named “Researcher of the Decade” by Santa Barbara County Health in 1997. Ψ



Daphne Bugental, Ph.D.

Tommy Sprague awarded Sloan Fellowship

In recognition of his promising early-career achievements, Asst. Professor Tommy Sprague received a fellowship from the Alfred P. Sloan Foundation. Each year the foundation selects fellows from a diverse set of researchers nominated by their peers. "This is a very well-deserved honor for Tommy," said department chair Mike Miller. "At such an early stage of his career, Tommy has already become internationally recognized for his work on how activity from neural populations in the human brain code information about the environment and guide behavior."



Tommy Sprague, Ph.D.



Brenda Major, Ph.D.

Brenda Major named AAAS Fellow

Distinguished Professor Brenda Major was elected to the prestigious American Academy of Arts and Sciences. The academy is an independent research center convening leaders from across disciplines and professions. Major is an international expert on the psychology of stigma and how people cope with stigma and discrimination. She has authored more than 160 articles and book chapters and has edited two books on the topic. Major is a past president of the Society of Experimental Social Psychology and of the Society for Personality and Social Psychology, the largest professional society of personal and social psychologists in the world.

Miguel Eckstein awarded Guggenheim Fellowship

Professor Miguel Eckstein is the recipient of a 2019 John Simon Guggenheim Fellowship. The awards are given to those whose work adds to the educational, literary, artistic, and scientific power of this country. "I am delighted to congratulate Miguel Eckstein on this prestigious fellowship, as they are very competitive awards that recognize exceptional scholarship," said Pierre Wiltzius, dean of mathematical, life and physical sciences. "Eckstein's work in the field of visual perception holds great promise for the future of medical imaging and computer vision systems."



Miguel Eckstein, Ph.D.

Psi Chi Turns 40

This year marked the 40th anniversary of the Psi Chi Chapter at UCSB, which was founded in 1979 by Dr. Bob Sherman. Sherman served as the first faculty advisor for the honor society's chapter at UCSB and attended the celebratory event. Psi Chi's mission is to support psychology students to achieve excellence in the field during their undergraduate education at UCSB and in the years that follow. Psi Chi sponsored events included a graduate student panel and resume building workshop. Psi Chi and the Society of Undergraduate Psychologists members packed Moshe Alumni House for their annual banquet this Spring, featuring the official induction of 23 new Psi Chi members.

By Allison Auten, 2018-2019 Psi Chi President



Psi Chi President Allison Auten, Faculty Advisor Nicole Albada, Ph.D., and Founder of the UCSB Chapter, Bob Sherman, Ph.D.



Over 35 alumni, 100 PBS undergraduates, and 50 faculty and staff attended **2019 PBS:ENGAGE!**, an annual alumni event featuring career panels and a networking mixer, organized by Asst. Professor **Vanessa Woods**.

The Department Celebrates the 2019 Undergraduate Award Winners

Distinguished Graduating Senior

In recognition of academic and research excellence, service to the department, the university, and the community

[Erika Prado](#)

Morgan Award for Research Promise

For graduating seniors who demonstrate the most promise in the area of experimental research in psychology

[Alicia Hernandez & Courtney Kenyon](#)

Morgan Award for Academic Excellence

For graduating seniors in recognition of outstanding scholarship

[Lindsey Brewin & Nina Masjedi](#)

Philip S. Rethis Memorial Award

For graduating seniors in recognition of outstanding character, determination and scholarship

[Alessandra Mittelstet](#)

Chairperson's Award

For students who have provided service to the Department

[Allison Auten, Rose Le, Gabriella Camden Meninger
Melissa Powell, Kyle David Schlopy, Vanessa N. Veloz](#)

Distinction in the Major

For students in the College of Letters & Science to recognize completion of a senior honors project or thesis

[Kennedy Abramson, Kathy Ayala, Chinmayee Balachandra, Lindsey Brewin, Margaret Hayes,
Alicia Hernandez, Codee Hoecker, Matthew Kang, Courtney Kenyon, Jacob Krug, Tamara
Leuchinger, Matthew Mayes, Ixchel Morfin, Jeffrey Morgan, Byron Rosenthal, Gabriella Shab,
Chinmay Surpur, Danny Toomey, Hannah Wenzel](#)

Exceptional Academic Performance

To graduating seniors who have achieved a 3.9 or higher GPA in upper division major coursework of at least 36 units

[Sarah Allen-Sutter, Allison Auten, Lindsey Brewin, Noa Dukler, Clarissa Gooze, Piper Harris,
Matthew Kang, Courtney Kenyon, Michelle Koo, Jacob Krug, Tamara Luechinger, Kathryn
Marti, Nina Masjedi, Matthew Mayes, Ixchel Morfin, Aria Phan, Ruby Preciado, Billy Shaffer,
Jessica Sturgill, David Wu, Sheerin Zarinafsar](#)

The Department Celebrates the 2019 PhD Student Award Winners

Richard E. Mayer Award for Outstanding Research in Psychology
Katy Walter

Charles G. McClintock Graduate Fellowship in Social Psychology
Jason Anderson

The Harry J. Carlisle Memorial Award for Neuroscience and Behavior
Mari Purpura

Graduate Division Dissertation Fellowship
Jocelyn Parong & Peri Gunalp

National Science Foundation Graduate Research Fellowship
Vinnie Wu
Shuying Yu (Honorable Mention)

Eugene Cota Robles University Fellowship
Shuying Yu

Ph.D. Awardees
Alex Boone, Allison Shapiro, Jason Anderson, Yuliy Tsank, Katie
Bainbridge

Alumni Spotlight

Deborah Bettencourt is Vice President of Customer Experience and Corporate Administration at Sientra

Bio Deborah Bettencourt graduated from UCSB in 1989 with a B.A. in Psychology. She has nearly 25 years of corporate operations experience in the medical device industry. In 2007, she joined Sientra, a medical aesthetics company. She oversees Sientra's corporate operations to include global human resources, facilities, and customer experience.



What drew you to a degree in Psychology?

My high school offered a psychology course as an elective. My teacher was an enthusiastic educator and really emphasized how important critical thinking skills would benefit us in whatever we chose. That clicked for me. I also wanted to attend a UC and play water polo. UCSB was the perfect match.

Are there any classes or professors in particular that you remember?

Three years ago, I was introduced to Dr. Vanessa Woods as she was reaching out to UCSB alums. Shortly thereafter, I had the pleasure of meeting Dr. Woods and Dr. Diane Mackie for lunch to talk about a new event they were planning – Engage. How serendipitous it was to have lunch with Dr. Mackie, the chair of the department! Thirty years prior, I took one of my first UCSB psychology classes from her.

How does psychology influence your work?

My psychology degree is really my foundation. Having the knowledge of how people behave and interact to create positive experiences are critical in the corporate world.

What do you think psychological scientists could learn from the world of customer experience?

I don't think it is necessarily "learning from." Collaboration and partnerships are key.

Do you have advice for Gaucho psych majors and recent graduates as they contemplate life after graduation?

Always be prepared to tell your story when you navigate your professional career. Your linkedin profile is great, but it doesn't tell who you are and the value would bring to an organization. 🧠

Research In Action

PBS students gain hands-on research experience in the classroom and in the community



Top, Left | Undergraduate students in Psychology 120L share their research findings with the PBS community during a lively 'Poster Day'.



Left | Graduate students in the Jacobs Lab share insights about the mind and brain with members of the Santa Barbara community at MOXI: The Wolf Museum of Exploration + Innovation.

New Faculty Spotlight

Ikuko Smith, Ph.D. joined the department as an Assistant Professor in 2019.

Tell us about your research. Describe a project that exemplifies your approach to science.

My main research interest lies with understanding the fundamental ways in which our brain processes information. I use the word “fundamental” here because unlike other organs like heart, kidneys, or even pancreas whose functional principles are fairly well understood, the brain still remains a black box at large. We know the cellular makeup of the brain as an organ; there are neurons, glia, astrocytes, oligodendrocytes, microglia to name the main players. We also have fairly good ideas about the functional partitioning of the brain regions that support different functions like vision, olfaction, hearing, learning and memory, generating motor output etc, but when it comes to how exactly these functions are executed on a single cell level, we still have a lot to learn.



Ikuko Smith, Ph.D.

Many of the intrinsic properties of a neuron have been revealed through decades of in vitro work using reduced preps like brain slices and cultured neurons, and yet, we are still in the early stage of observing the direct links between some of the neuronal properties and the animals' perception and behaviors. My lab aims to study the basic function of a single neuron in a behaviorally-relevant context, connecting the neuronal function with the quantifiable behavioral outcome. I feel lucky to be working in this era of modern science filled with newly developed tools that are beginning to allow us to have access to an individual neuron in an intact animal during active perception and behavior.

Using the state-of-the-art technology of two-photon imaging combined with electrophysiology, we are learning how different compartments of the dendrites on a single neuron respond when an animal is given a sensory stimulus. What these kinds of information can tell us about the neurons and the brain as a whole is that there is a lot more signal processing going on compared to the traditional view of a neuron simply summing inputs together and firing action potentials when the threshold is reached. Rather, there is a lot more situational decision-making taking place to decide how the inputs

should be summed. Some small inputs may be ignored under a certain condition, but in another condition, the same small inputs may be electrically amplified within the dendrites to have more “vote” on the fate of the neuronal output. This concept of nonlinearity in the dendritic function, in theory, significantly expands the computational power of a single neuron, with each portion of the dendrites working like a mini computer, rather than a simple cable.

Your academic history includes a DVM degree at Hokkaido University in Japan to a Ph.D. in physiology at UCLA to postdoctoral work at UCL and UNC. What are a few lessons in science that you took from each place—and what’s one goal you have for your research at UCSB?

In the vet school at Hokkaido University, I learned the power of behavioral observation when it comes to reaching the correct diagnoses. Animals can’t speak and often times they don’t communicate how they feel or what’s causing them pain or discomfort in a straight forward way. But if you really pay attention to their behavior, develop an initial theory, change the angle of your observation according to that theory, and so forth, you can narrow down your diagnoses and run targeted tests. It may sound overly dramatic, but by putting yourself in their shoes, you can see and notice things more effectively. Some people like Temple Grandin have a special knack for it, but anyone can benefit from the power of keen observations. This is also the time when I started taking interests in neuroethology and wanted to learn more about the neural circuits that drive different animal behaviors, which led me to apply for a graduate school at UCLA.

I chose the UCLA graduate program in integrated physiology because UCLA was one of the schools with the largest number of neuroethologists. I learned to combine two seemingly distant scientific disciplines together, molecular biology and behavioral biology, studying singing-driven regulation of gene expression in the brain of a songbird. I was fascinated by the fact that by quantifying the birds’ singing behavior, you can observe a clear correlation between the behavior and the neuronal gene expression levels in a very specific part of their brain. I hope to apply this power of quantification of animal behaviors to the research I am setting up in my lab at UCSB.

UCL is where I received some rigorous training in electrophysiology, which gave me the chance to learn the language of the neurons that is electrical signals. Unlike rather clear-cut mechanisms I had learned in molecular biology, electrical activities of the neurons were fascinating in that they were so fluid moment-to-moment and even though they were confined by the laws of physics, the neuronal responses to a given stimulus varied quite a bit. I was fascinated by this variability.

At UNC, I learned more about the visual processing in the mouse cortex and became convinced that it was a perfect model for me to pursue my research interest in studying signal integration on a cellular level in a behaviorally-relevant manner. This was also the time that I started dreaming about how I would run my own research program. It was so much fun to think about science and the academic career in general from a more independent point of view.

The ultimate goal for my research at UCSB is to contribute something conceptually new to our understanding of “how the brain works”. I am fascinated by the ability of the brain to make sense of

the visual world. This ability sometimes can create interesting phenomena that we experience such as optical illusions and multistable perceptions. I think the answers to these perceptual tricks lie within the malleability of the neural circuitries within the brain, and learning more about the functional contributions of the dendrites to input integration can provide insights into these unique visual experiences.

You are one of the few scientists in the world capable of measuring electrical activity from dendrites in real time. What has this technique revealed about the brain?

When we started directly measuring electrical activity from the dendrites in the mouse visual cortex during presentation of a visual stimulus, we learned that the segment of the dendrite we were recording from responded to a very specific feature of the stimulus by locally generating electrical spikes. For example, individual neurons in the visual cortex are known to specifically respond to a certain orientation angle of black and white gratings. Traditionally, it was thought that this “tuning” to a specific feature of the visual stimulus arises at the level of the cell body where all the inputs are simply summed together. However, our findings indicated that already at the level of the dendrite before the signal reaches the cell body, some of the inputs carrying information about the stimulus features are “favored” by the means of electrical amplifications. This was an important finding as it meant that each piece of the dendrites acted as a small computational unit. The human brain is often compared to the man-made supercomputers like IBM’s Watson and Google’s DeepMind. With just 100 billion neurons as computational units per brain, our current understanding is that the efficiency of our brain surpasses that of any of the supercomputers pound-for-pound (or computational unit-for-unit). However, what if, instead of individual neurons, we counted individual pieces of dendrites as a computational unit? It would change the total number of computational units in the human brain and may tip the scale a little to bring it within more comparable range with the supercomputers. Suffice it to say that this is all still within the realm of speculations, but it is certainly an interesting theoretical exercise to think about.

What experiences outside of academic research have shaped your research?

I think my interests in neuroethology have roots in my days as a vet student back in Hokkaido. Veterinary medicine approach is that of comparative physiology. You learn both general principles of physiology that are shared among a broad range of species as well as unique species-specific physiology which often times come with fascinating evolutionary backgrounds. I loved learning about both of these things. It is kind of like playing a photomosaic jigsaw puzzle where hundreds and thousands of smaller images are blended to create a larger picture. The principle of neuroethology is the same way. By studying exaggerated species-specific behaviors and the underlying neural circuitries, we can learn about the fundamental features of the nervous system that can be applied to many different species, including us humans. When I study the role of dendrites in visual processing the mouse cortex, I am looking to piece together that larger picture, that general principle. Ψ

New Faculty Spotlight

Ron Keiflin, Ph.D. joined the department as an Assistant Professor in 2019.

Ron, tell us about your research.

The main goal for my lab is to determine how organisms learn about rewards (when and where to find them? what action is required?) and how this acquired knowledge guides decision-making and ultimately organizes behavior. Our approach is largely multidisciplinary and integrates experimental psychology, computational neuroscience, and neurophysiology. We design theoretically-driven behavioral tasks in rodents that capture specific computational processes. We then use neurophysiological tools to monitor and manipulate brain activity in behaving rats. This approach allows us to expose the neural basis of essential computations involved in reward function.



Ron Keiflin, Ph.D.

For instance, at the heart of most associative learning theories lies the concept of prediction error—the idea that we learn from our mistakes. This implies that our brain computes a prediction error (the mismatch between predictions and reality) and uses this error signal to update our beliefs and models of the world. The idea that prediction errors drive learning is a highly influential concept in psychology, but for a long time, there was no firm biological evidence for these error-correcting teaching signals. By leveraging the power of optogenetics, we were able to demonstrate the causal role of dopamine neurons in mediating such error-driven learning. Specifically, we showed that a brief activation of rats' dopamine neurons while the rats were consuming an expected reward was sufficient to mimic a prediction error and “forced” rats to learn about redundant stimuli that they would otherwise ignore.

This result generates many more questions: How do surges of dopamine modulate ongoing computations in specific brain regions to promote learning? How do drugs of abuse durably alter dopamine circuits and dopamine-enabled computations, and what are the consequences on behavior? My lab is actively tackling these questions.

Your academic history includes undergraduate and graduate degrees in neuroscience in France to postdoctoral work at UCSF and Johns Hopkins. What is one lesson on science that you took from each place you've been at—and what's one goal you have for your research at UCSB?

My passion for behavioral neuroscience really took hold at the University of Strasbourg, France, under the mentoring of Philippe Oberling. He's the one who introduced me the world of animal learning and cognition, and he's the one who convinced me to pursue a PhD in Neuroscience. For graduate school, I joined the lab of Martine Cador in Bordeaux, France, to study the mechanisms of drug relapse in animal models. The University of Bordeaux was—and still is—a hotbed for the study of drug addiction. For instance, on the same floor, Serge Ahmed was conducting his groundbreaking work on choice between drugs of abuse and natural rewards; and he was extremely generous with his time and advice. Being immersed in this intellectually stimulating environment encouraged me to keep track of the “big picture” as I was learning the nuts and bolts of behavioral pharmacology.

For my post-doc I wanted to take a temporary step back from the topic of addiction. I believed that in order to understand (and treat) addiction, we first had to understand precisely how “natural” rewards impact behavior. That's when I joined the lab of Patricia Janak (at UCSF first, and then at Hopkins) to investigate the neurobiology of reward learning and reward selection. Patricia stood out as an outstanding adviser: she gave me the training, support and freedom those pursue these goals. She also showed me that it is possible to be a successful scientist while maintaining a harmonious work-life balance. At Hopkins, I also had the opportunity to interact with Peter Holland—a giant in the field of animal learning and memory—who introduced me to the richness and beautiful complexities of associative learning.

I realize that at every step of my career, I benefited from great mentors and colleagues. My goal is to pay it forward here at UCSB.

What experiences outside of academic research have shaped your research most and how?

Like so many people, I witnessed loved ones struggle with substance abuse and mental disorders. I know it sounds cliché, but this is what piqued my interest in psychology and brain sciences at a young age. I wanted to understand how these smart and loving people could behave in such self-destructive ways. By extension, I wanted to understand why any of us behave the way we do. In many ways, these are the questions I am still trying to answer today. I hope that by understanding the neurobiological basis of normal and pathological behavior, we can reduce the stigma of mental disorders and offer insight for treatments.

What are some of your non-academic hobbies, interests, or pursuits?

Well... I have a 4-year-old son, so my hobbies and pursuits are basically his hobbies and pursuits. Right now, we are really into dinosaurs. 🦖

New Faculty Spotlight

Nicole Albada, Ph.D. joined the department as an Assistant Teaching Professor in 2019.

Nicole, tell us about your research interests.

I am an autobiographical memory researcher, which means that I am interested in people's memories about their personal past. So, memories that a person might have about their graduation day, their wedding day, or about the day that they didn't get that job. I am not (necessarily) interested in the mechanisms that allow humans to remember autobiographical experiences, but instead explore *why* humans remember so much of their life. What function might it serve someone to recall, for example, their 10th birthday party at their 50th? Does remembering help them consider who they are (serving a self-continuity function), bond them with others who might have been there throughout their life (serving a social-bonding function), or help them to consider how they might get to their 90th birthday (serving the function of directing behavior). I am curious about adult life phase and cultural differences in these functions of autobiographical memory that I and colleagues have identified, and the links between remembering the personal past and present-day psychosocial wellbeing outcomes.



Nicole Albada, Ph.D.

In most of my studies, I use a mixed-methods approach. This means that I collect quantitative data about people's memories for their personal past, such as asking them to rate their memories for various qualities, like how vivid their memory for an experience might be or how often they might think about an event in an effort to remember who they are. But, I also collect people's actual autobiographical memory narratives, or their stories about their life, and content code these narratives for a variety of themes. As an example, I am currently working with an undergraduate student on a project where autobiographical memory narratives from individuals ranging in age from 18 to 80 have been content coded for the theme of redemption, or the extent to which a person might remember a negative experience but describe it in a redeeming way by considering the silver lining of that experience (like learning a lesson or gaining an insight). We are exploring the

extent to which people spontaneously include redemption in their autobiographical narratives or only include it after being cued to do so, and the links to psychological wellbeing.

You've developed a new PBS course titled Adult Development and Aging. Can you tell us more about the course and your motivation for developing it?

Usually when I tell people that I am a developmental psychologist, they presume that I am interested in child development. There is a perception that individuals reach adolescence or early young adulthood and development just stops. However, my focus in developmental psychology has always been on the second half of life, from adulthood to the end of life, with a particular emphasis on the psychology of aging.

I developed the Adult Development and Aging course because university students, who may have little daily exposure to older adults, tend to think that the term "development" means growth and is thus not applicable to old age. There are perceptions that most of the changes that occur as people age are not growth-related, but are decline-oriented – decline in memory ability, decline in physical abilities, health, etc. But, this is far from the full picture. Thus, one of my hopes for students taking this course is for them to learn that development in adulthood – which is a long phase of life for most people (over 50 years) - is multidimensional and multidirectional. This means that there are gains, losses and continuities that occur as adults age. This often surprises students, and it breaks through the myths and stereotypes that students might hold. It also gets students to think about their own aging process – I think.

Another motivation for developing the course is that I hope to make students more marketable upon graduation. In the year 2030 – just over 10 years from now - people over the age of 65 are projected to outnumber children for the first time in US history. This is a trend mirrored around the world. So, there are lots of jobs out there that, without even realizing it, will require students to know a little something about the aging process. I hope to provide them in just this one class with that little bit of knowledge. A deeper understanding of the aging process would require a multidisciplinary minor in gerontology or aging studies at UCSB... perhaps one day?

What experiences outside of academic research have shaped your scholarly interests most and how?

There have been a few. One reason I was drawn to the psychology of aging is because I was fortunate to grow up around the corner from almost all of my grandparents and great grandparents in Key West. (Well, everyone in Key West is around the corner – it's only 3 miles by 5 miles long.) One of my great grandmothers lived with us when I was a child; my mother took care of her. My grandmother is currently 96 and doing relatively well. My great grandfather remarried in his late 80s and drove until he was in his 90s. As a child, I was surrounded by older adults and relished in it, even asking to visit my great grandfather's senior home (probably for the attention I would get from all the residents). So, when my undergraduate Introduction to Psychology teacher at the University

of Florida mentioned, in passing during our developmental section of the course, “gerontology” – a field I had never heard of before – I knew I had found my direction.

More recently, the most impactful experience on my scholarship was living and working (at the University of the West Indies) in the Caribbean, in Trinidad and Tobago, for over 10 years. Living in another culture for such a long period of time reshaped how I approach my research and my interactions with students. I am now cognizant of the influence of culture on almost all aspects of an individual’s life and attempt to collect data in a way that represents well that influence: measuring cultural values, ensuring that measures are valid in a culture before using them there, and including multiple cultures in my research whenever I can. Also, in Trinidad, I was the foreigner and I belonged to a minority group. So, I think I gained an appreciation of the stresses, challenges, and perhaps insecurities that come with that role. I try to use this experience to interact more compassionately with students here at UCSB that also feel these stressors.

What are some of your non-academic hobbies, interests, or pursuits?

We, as a family, spend a lot of time at the beach: my husband and our son are both avid surfers. I am not. I am an avid observer, but enjoy my quite time walking on the beach with our dog. Actually, I have not been in the water past my ankles since moving to Santa Barbara – it is way too cold! I enjoy hiking and yearly vacations to snowboard as a family. I practice yoga and love to sing. I was in choir in high school, and as a student at the University of Florida, even sang in a band – well, I was the backup singer. 🎵

Dan Conroy-Beam awarded NSF Career Award

Asst. Professor Dan Conroy-Beam was awarded the prestigious **National Science Foundation CAREER Award** for his project “CAREER: Using Computer Simulations to Understand Mate Choice.” Dan uses an evolutionary perspective to understand how mate preferences are linked to actual mating outcomes. He is interested in how mate preferences are integrated with one another computationally in order to make mating decisions. Dan's work combines agent-based modeling of mate choice evolution with studies of real couples to compare and explore candidate algorithms for how people select their mating strategies, evaluate potential mates, and regulate their relationships.



Dan Conroy-Beam, Ph.D.

Congratulations, Ph.D. Class of 2019!



Psychological and Brain Sciences Ph.D. Graduates

Alexander Boone (Hegarty Lab), Allison Shapiro (Grafton Lab), Jason Anderson (Gable Lab), Yuliy Tsank (Eckstein Lab), Katie Bainbridge (Mayer Lab)



Party Over Policy

When it comes to climate change, Democrats and Republicans are generally in agreement – they just don't realize it



Just how far apart are Republicans and Democrats when it comes to views on climate change? Not all that far, as it turns out. They're just too party-focused to notice. That's according to scientists from UC Santa Barbara and the University of Colorado Boulder in new research just published in the journal *Perspectives on Psychological Science*. Surveying 2,000 adults, the research team found that, across party lines, there is general agreement that climate change is

real, that it is caused by human activity and that something should be done to mitigate it.

The study further reveals that people are more likely to support the same climate policy proposal when they think that their own political party supports it — and that both Democrats and Republicans overestimate how much their peers oppose the ideas of the other party.

"Democratic and Republican citizens alike evaluate a carbon tax or cap and trade policy based on who proposed it — above and beyond their thoughts on the details of the policy, or on whether it is consistent with their beliefs about the importance of climate change," said Professor **David Sherman**, senior author on the paper. "They do this despite stating themselves that policy considerations should be more important than partisanship."

Added lead author **Leaf Van Boven**, a psychology and neuroscience professor at CU Boulder, "We found that people routinely place party over policy and disagree for the sake of disagreeing." For their project, Sherman, Van Boven and **Phil Ehret**, who just completed his Ph.D. in social psychology at UCSB, set out to explore the psychological reasons that — despite warnings about economic, social and humanitarian impacts of climate change — U.S. lawmakers have yet to enact a national policy.

Previous studies and conventional wisdom suggested this was primarily because most Republicans are skeptical of climate change. So the researchers conducted two studies in 2014 and 2016 with diverse national panels of over 2,000 U.S. adults, asking: Is climate change happening? Does it pose a risk to humans? Is human activity responsible? And can reducing greenhouse gas emissions reduce climate change?

Sixty-six percent of Republicans, 74 percent of Independents and 90 percent of Democrats said they believed in human-caused climate change and the utility of reducing greenhouse gases. “Just before the presidential election when most Republicans were voting for Trump, who characterized climate change as a ‘hoax,’ they nevertheless expressed a belief in climate change,” noted Van Boven.

In the 2014 study, the researchers showed participants one of two proposed policies. One was a cap-and-trade policy that historically has been championed by Democrats. The other was a revenue-neutral carbon tax based on policies recently advocated by Republicans. Participants were told that 95 percent of Republicans and 10 percent of Democrats supported the policy, or vice versa. Regardless of the content, Democrats supported policies from Democrats more strongly, and Republicans supported policies from Republicans more strongly.

The researchers also interviewed four retired members of Congress who have worked on environmental issues: Mickey Edwards (R-Okla.), Robert Inglis (R-S.C.), David Skaggs (D-Colo.) and Tim Wirth (D-Colo.). All four reported that as climate change became closely associated with Democrats, Republican disagreement increased.

“If you were interested in supporting climate change, that meant you were interested in supporting Al Gore,” Wirth told the researchers. In his interview, Edwards said, “Nobody wants to be an outlier — nobody.” This distrust of the other side, combined with a false assumption that the two parties sharply disagree has made it difficult for good, bipartisan ideas to gain traction, according to the researchers.

“One of the foundational insights of social psychology is the under-appreciated influence of social norms and that actions are determined more by perceptions of norms than the actual norms,” Sherman said. “It is crucially important for lawmakers and voters alike to be informed about what others actually think about environmental issues such as climate change.

“There are many reasons the media focuses on differences between partisans,” he added, “but our work shows why it is important to highlight this strong consensus as well as the even stronger consensus that citizens should evaluate policies on their details and impact and ability to address problems, and not based on which party proposes them.”

Molecules that Restructure the Mind

Postdoctoral researcher Caitlin Taylor wins the 2019 Harvey L. Karp Discovery Award



Imagine a molecule powerful enough to reconfigure your mind and body — a molecule that makes your bones and muscles grow, makes your organs behave differently and alters your mind and your mood.

Such is the power of sex hormones — estrogen, progesterone and testosterone. These naturally occurring chemicals are used by the human body to

reorganize itself at various stages of life — puberty, pregnancy and menopause. Until recently, however, little scientific research has been done on hormones' effects on the human brain.

Enter **Emily Jacobs**, assistant professor in the Department of Psychological & Brain Sciences and **Caitlin Taylor**, a postdoctoral researcher in the Jacobs Lab. The Jacobs Lab studies the impact of sex hormones on the human brain, including the menopausal transition when ovarian hormone production declines, and the impact of oral contraceptives (OC), better known as "the Pill."

In support of her postdoctoral research in the Jacobs Lab, Taylor received UCSB's 2019 Harvey L. Karp Discovery Award. Made possible by business leader and entrepreneur Harvey Karp, the award recognizes exceptional postdoctoral scientists and provides seed funding to support their innovative research.

"Over 100 million women worldwide are using the Pill," said Taylor, a junior fellow at UC Santa Barbara's SAGE Center for the Study of the Mind. "They have been consuming estrogen and progesterone daily, potentially for decades. These are incredibly powerful neuromodulators, playing huge roles in how the brain functions. But until recently, no one was asking what happens to the brain when we mess with these hormones by taking the Pill."

Jacobs and Taylor are now building the [University of California Women's Brain Initiative](https://www.news.ucsb.edu/2019/019532/molecules-restructure-mind), the largest brain imaging database dedicated to advancing women's health. The database leverages the activity of the broader UC neuroimaging community, allowing researchers across campuses to pool data into a central repository. UC Santa Barbara and UC Berkeley have already signed on. Now, any time a person gets a brain scan at either institution, their brain imaging data, as well as detailed information about that person's OC use (among other medical and reproductive health data), is entered into the database. They are now building the infrastructure necessary to expand to all 8 UC campuses with a research-dedicated Brain Imaging Center. This will further escalate the sample size they can draw upon – ~10,000 unique participants annually – to ask questions at the intersection of the brain and behavior. The initiative is poised to provide an unprecedented amount of data to answer overlooked questions of critical importance to women's health.

"There are so many factors that we need to look at," Taylor said. "Which OC, when did the person start it, how long have they used it, how long have they been off it? To be able to really understand the effects on the brain, we need a larger number of participants than any one lab could possibly recruit. If the University of California works together on this, we can answer this and other long-overlooked questions about hormones and the brain."

"Caitlin is the perfect choice for the Karp Discovery award," said Bridget Queenan, a research scientist at the SAGE Center. "She's attacking a fundamental and completely neglected question about human physiology — what are hormones doing to the brains of men and women over their lifespan? And she's also changing the way in which cognitive neuroscience is conducted. She's pulling together people from across the UC system to answer difficult important questions that no one could answer individually. Her research program has the potential to revolutionize not only our understanding of human health, behavior and aging, but the way we go about conducting research on the brain in general."

SAGE Center Director Michael Gazzaniga said, "Anyone who meets Caitlin knows she's something special. She's got this great scientific question. But she's also got the ability to get people together and get things going. Caitlin is already a leader in the cognitive neuroscience community here at UCSB. I've no doubt that, with this award, she will become a leader across the whole UC system." Prior to the UC Women's Brain Initiative, scientists didn't have adequate data for determining the impact of oral contraceptives on the brain. "Now with the Karp award, we can build a UC-wide team to answer this and a thousand other questions about the brain no one has been able to approach yet," said Taylor.

This project is also supported by a 2019 Hellman Fellowship and a 2019 UC Santa Barbara Academic Senate grant awarded to Jacobs.

Class Notes

Learn what your fellow PBS Gauchos are up to...

ARABO BEIKI, 2009, B.A., Psychology. A few years after my tenure as a Gaucho, I continued my educational career at Pepperdine University where I obtained my MBA. After brief stints with the NBA's Sacramento Kings and LA Clippers, I transitioned to General Manager of Washos, a mobile car detailing start-up in Los Angeles. My wife and I are always open to expanding our social and professional networks, so don't be shy!

CAROLYN TAORMINA BOYCE, 1990, B.A., Psychology. After graduating from UCSB, I earned my M.A. in School Psychology from SFSU in 1993 and I've been enjoying a career as a School Psychologist in Northern California for the past 24 years. I live in San Rafael with my husband and our two daughters.

MAURICIO BUCHNER, 2002, B.S. Biopsychology. I found my passion working with children at the Devereux Foundation while attending UCSB. A few years after leaving Santa Barbara, I went back to school and earned my master's degree in education. I have now been working as a school psychologist in the Sacramento area for the past 11 years. I married one of my graduate school classmates and we have two wonderful daughters together.

KRISTI CLARK graduated with a B.S. in Biopsychology in 1990. Post-graduation I did some bench work for Dr. Harry Carlisle (UCSB). After a brief stint in pharmaceutical sales, I went back to research. In 2009, I moved to Europe for two years to start an office for my employer. In 2012, I started a company, Agility Clinical, with four colleagues and we focused on Rare Disorders (mostly pediatrics). In 2017, Precision for Medicine Group acquired Agility Clinical and we focus on biomarker/genomic driven clinical trials to bring treatments to patients that need it most. My daughter currently attends UCSB.

LYSANDRA COOK, 1991, B.A., Psychology. After graduation I received my multiple subject and learning handicap credential as well as my MEd in Special Education at UCSB. I married my Gaucho sweetheart (Bryan Cook, 1990) and we are now both professors in the Curriculum Instruction and Special Education Department at the University of Virginia.

CATHERINE CORBIN, 2009, B.A., Psychology. After getting an MA in Education and Social Policy and working at a social policy research firm for a few years thereafter, I entered a Ph.D. program in Educational Psychology and Applied Developmental Science at the University of Virginia. I am entering my last year, preparing my dissertation, and looking for a post-doc. I live in Charlottesville with my partner, and we look forward to getting a dog soon!

CHRISTOPHER FLYNN, 2008, B.A., Psychology. A former intern for UC Santa Barbara's men's soccer team, Flynn entered the sports industry after graduation. After managing teams at Sporting Kansas City and Georgia Tech, Flynn returned to California for the Oakland Athletics in 2017 and currently serves as a sales manager. Recognized by Major League Soccer on multiple occasions for his sales efforts, Flynn was a manager on the 2013 MLS Ticket Sales Team of the Year. With the Oakland Athletics, he's been instrumental in creating The CORE, the innovative first-of-its-kind sports business development program. He lives in Patterson, California, with his wife and three children.



DARLENE FOGAL, B.A., 1975, Psychology. After graduating from UCSB I worked with persons with disabilities, obtained my Masters in Art Therapy (ATR-BC), became certified in Hypnotherapy, and worked as a Vocational Rehabilitation Counselor. In the past 10 years I have been semi-retired. I am traveling, finishing up an art studio, taking webinars to get back into doing my own art work, playing with my grandson, and enjoying life. Have many goals yet I hope to accomplish!

CARL JANEWAY, B.A., 1981, Psychology. I completed a BSN working over 25 years as a Registered Nurse. I trained in trauma nursing in a level 2 trauma center affiliated with UCLA. I retired and live in San Luis Obispo enjoying my 3 grandchildren and 2 children (one of whom is an '06 UCSB grad).

KAMI LEONARD, 2000, B.A., Psychology. I taught overseas in Africa before returning to grad school. Got licensed as a LMFT in 2012 and have a beautiful private practice in Woodland Hills, CA. I specialize in anxiety disorders and family therapy, and also enjoy working with pastors to help counsel people in the church.

SOPHIA LITSEY, 2015, B.A. Psychology and English. I got a job as an HR Generalist with a Continuing Care Retirement Community called Vi

at their San Diego location. I also walked in my graduation ceremony at University of Southern California for my MS in HR Management degree.

JAMES LIVINGSTON, 1971, Ph.D., Psychology. First posting was to Livingston College(!) of Rutgers, the State University of New Jersey. Using the skills developed at UCSB, I built a computer-controlled lab for gathering human response-time data to various stimulus presentations, funded by a NSF grant. The time spent completing that, and administering it in support of the research of my colleagues, may have made a contribution to my moving into the computer industry; I enjoyed 40+ years as a system software engineer in various roles, and I am now an Adjunct Faculty Instructor, teaching beginning Computer Science courses at Bellevue College in Bellevue, WA. I have two daughters, four granddaughters, a wonderful wife of 53 years, and we all live within a few miles of each other in Sammamish, WA.

MONICA LUONG. B.S., Biopsychology, 2016. I took two years off working, studying, preparing and applying to optometry school. I just completed my first year at Arizona College of Optometry. I'm so happy to be on track towards what I've always dreamed of!

JIM O'HANLON (B.A. Psychology, 1961; Ph.D. Biological Sciences, 1970) continues to work as Staff Psychopharmacologist for the Tri-Counties Regional Center, headquartered in Santa Barbara. He and Leacy just celebrated their 59th anniversary and live Solvang where they enjoy frequent visits from 5 children and 11 grandchildren.

BOB PRESTON, 1979, B.A., Experimental Psychology. I've utilized my psychology studies at UCSB by combining it with an MBA with a marketing concentration from UC Irvine. I've had a successful business career as a technology Chief Marketing Officer in Silicon Valley and now own a successful Real Estate and property management company in Del Mar, CA.

SEMA QUADIR, 2015, B.S., Biopsychology & Pharmacology. I worked at CLAS during my year off as an organic chemistry tutor and then came to Boston University for graduate school. I just finished my third year of my

Pharmacology PhD program studying neurobiological mechanisms of addiction (something I initially started as an undergrad in Dr. Szumlinski's lab).

SHELBY SWANSON (Norton) graduated in 2013 with B.A. in Sociology, minor in Applied Psychology. I obtained a Masters in Psychology immediately after finishing UCSB. As of this past March, I am now a Licensed Marriage and Family Therapist. I am still living in Santa Barbara and am grateful for everything UCSB gave to me!

HOBEN THOMAS, B.A. 1958. I remember Altus, Beaver, Gottsdanker, and McClintock who at that time was a fresh PhD just out of Michigan as I recall. Emeritus professor at Penn State, University Park, still doing math models stuff, and splitting time between State College, PA and New Bern, NC.

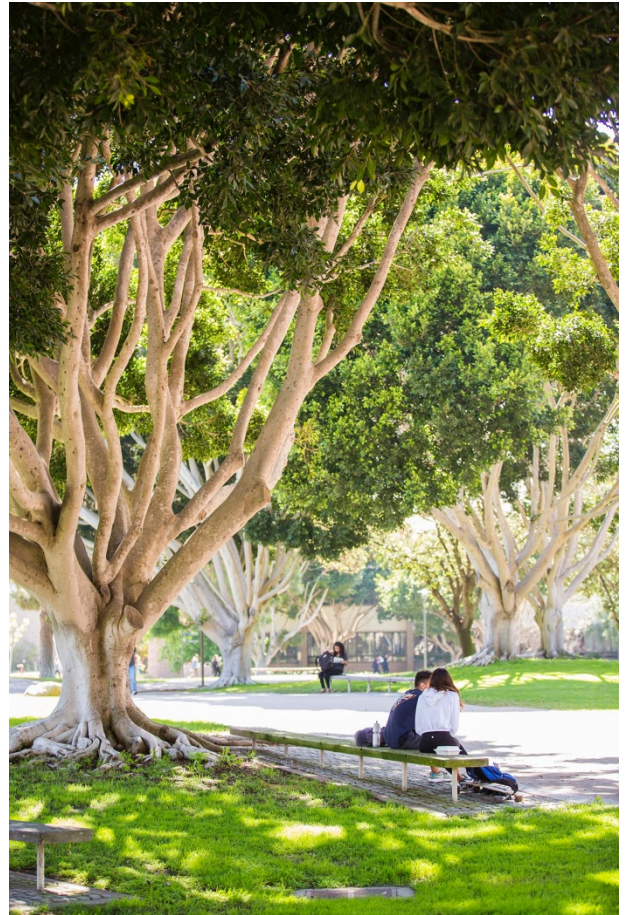
JOANNA TRINH, 2015, B.A., Psychology. After graduating UCSB, I went abroad to my master's in research psychology. Currently, I'm a recruiter in the Bay Area.

TIFFANY WERNER, 2007, B.A., Psychology. Immediately after graduation I attended the U.S. Air Force Officer Training School and earned a commission as a 2Lt. Now I am a Major, married to another Major, living all over the world with two beautiful sons.

ROBERTO REFINETTI, 1987, Ph.D., Psychology. I am currently the chair of the department of psychology at Boise State University, in Idaho. After leaving UCSB and before coming to Idaho, I held positions at the University of Sao Paulo (in Brazil), the University of Illinois, the University of Virginia, the College of William & Mary, and the University of South Carolina. My daughter, who was born in Santa Barbara when I lived there, is now a lawyer and lives in Texas with her husband.

MARY E SOLIS, B.A. 1978 Psychology UCSB, received her MSW in Social Work from UC Berkeley in 1981, became a licensed clinical social worker in 1984, received the Oncology Social Worker of the Year in 2004, and a Lifetime Achievement Award-NASW, local chapter 2018. She retired in 2018 after 34 years as an oncology social worker for the local Cancer Center. The Cancer Center created a Social Work Endowment Fund in her honor upon retirement.

HEATHER WONG, 1998, B.A., Psychology. After graduating from UCSB I pursued a Psy.D. in clinical psychology. My career has focused around providing mental health services to the university population. I had the opportunity to train at the UMass Amherst and Harvard University college counseling centers and am currently a staff psychologist at Brown University. I live in Rhode Island with my husband (also a psychologist) and three year old daughter Ling.



We'd love to hear from you!

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