### **NEWS FROM THE OHIO STATE DEPARTMENT OF**

# PSYCHOLOGY

























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WELCOME to the Department of Psychology annual newsletter!
As the new(ish) chair of the department, it is an honor for me to provide a few introductory comments. First, a big thank you to our former chair, John Bruno, who led us through three very successful

years, culminating in our external review process September 2019, just prior to his well-earned retirement on Oct. 1.

I'm no newcomer to Ohio State, having been a faculty member in this department since January 1995. As a 25-year veteran, I've seen many changes in leadership, institutional policies and technology. What hasn't changed during that time is the excellence of our faculty, staff and students. Department rankings have sustained an upward trajectory over the years, with the most recent 2019 Shanghai rating (a reputable approach, based primarily on research productivity and visibility) placing our department in the top 2.5% of psychology departments worldwide. This is a remarkable feat, largely due to the cutting-edge research being conducted in our labs, in addition to the visibility of our faculty as national and world leaders in psychological science and neuroscience, serving as editors and editorial board members of prominent scientific journals, as well as on grant review panels for the NIH and NSF.

The broad influence of the department is evident across the university, as most faculty in the department conduct interdisciplinary research with faculty from other departments and colleges, including neuroscience, linguistics, economics and communication, as well as the The Ohio State University Wexner Medical Center and the Fisher College of Business. Three of our faculty have been recently appointed directors of critical interdisciplinary research centers and research groups, facilitating seminal research and training in: (1) neuroimaging, at the Center for Cognitive and Behavioral Brain Imaging (Ruchika Prakash, director), (2) cognitive science, at the Center for Cognitive and Brain Science (Andy Leber, director), and (3) decision science, at the Decision Sciences Collaborative (Ian Krajbich, director).

Our doctoral program also is thriving. Within our highly rated graduate program (top 10% of psychology programs nationally, according to 2017 U.S. News and World Report), we are currently training approximately 160 students in one of eight tracks (behavioral neuroscience, clinical, cognitive, decision science, developmental, intellectual and developmental disabilities, quantitative, and social). Our graduate students routinely receive highly competitive fellowships from the Graduate School, and the department now guarantees five years of funding to all doctoral students entering our programs. The department is also in the process of initiating a new doctoral training program in cognitive neuroscience (which will result in a total of nine tracks within the department), reflecting our critical mass of faculty conducting interdisciplinary research and training in the science of the human mind and brain function.

In our undergraduate program, we have approximately 1,800 majors, making us the third largest major at Ohio State. Of those, approximately 150 students are in the Honors Program. We are constantly exploring innovative approaches to instruction in psychology, and we are currently in the process of re-evaluating our curriculum to ensure our graduates continue to receive the best training available. Bachelor's degree recipients from this department have had great success employing their knowledge of psychological science in a wide range of career paths. For a snapshot of some of the varied paths taken, see the link from the undergraduate advising website at **go.osu.edu/with-my-psych-degree**.

This newsletter will give you a taste of the wide array of innovative research and teaching conducted in the department today. If you want to learn more about any of the exciting work occurring in the department, please feel free to explore our website at *psychology.osu.edu* or plan a visit to campus in the near future!

## DEPARTMENT NEWS -

#### **NEW GRADUATE PROGRAM**

The Department of Psychology is excited to offer a new graduate program in cognitive neuroscience. This crossarea training program is geared toward students who study the human mind and brain from a variety of perspectives, with a special emphasis on receiving top-notch training in neuroimaging methods and analysis. Faculty and students in the program have research interests spanning a multitude of areas, including visual perception and cognition; memory and learning; computational cognitive neuroscience; neuroeconomics; social cognitive neuroscience; clinical cognitive neuroscience and developmental cognitive neuroscience. The goal of the program is to bring together students from all of these areas to offer both breadth and depth of training in the practical and theoretical aspects of cognitive neuroscience so they can produce exciting new research and graduate from our program with the tools to be successful modern cognitive neuroscientists.

Prospective graduate students will be able to apply starting this fall for matriculation in fall 2020.

### **FACULTY NEWS AND HONORS**

>> Faculty members Jennifer Crocker and Russell Fazio were honored as fellows of the American Association for the Advancement of Science (AAAS). This is one of the most prestigious honors given to U.S. researchers who have made exceptional efforts to advance science. Fellows are selected by their academic peers.

**Crocker**, an Ohio Eminent Scholar and professor of psychology, was recognized for cutting-edge research continually pushing social psychology forward (from covariation judgments to stereotypes to stigma to self-esteem to compassion) and for her extensive professional leadership.

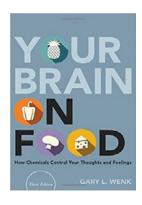
**Fazio**, Harold E. Burtt Chair in Psychology and professor of psychology, was honored for outstanding research and theorizing about the multiple processes by which attitudes form and then influence attention, categorization, judgment and behavior.

>> Duane Wegener concluded his run as the president of the Midwestern Psychological Association (MPA) from 2018-2019 at an MPA conference in April.

### **GRANTS AND PUBLICATIONS**

>> A collaborative National Institutes of Health (NIH) grant between associate professor of psychology Julie Golomb and College of Engineering professor Aleix Martinez and was funded.

- >> A collaborative National Science Foundation (NSF) grant between **Golomb** and associate professor of psychology **Andrew Leber** was funded.
- >> Doctoral students Susan Havercamp and Jesse Strickler received a CCTS grant for "Evaluating an Informed Consent Process Designed to Improve Inclusion of Adults with Intellectual Disability in Research."





>> Gary Wenk published the third edition of his book, Your Brain on Food: How Chemicals Control Your Thoughts and Feelings.

- >> Professor Luc Lecavalier's "Measuring Sleep Problems in Children with Autism Spectrum Disorder" received \$703,340 over four years from the National Institute of Child Health and Human Development.
- >> Benedetta Leuner's and Kathryn Lenz's work on using animal models to study neo-immune mechanisms of postpartum depression received a grant from the National Institute of Mental Health.
- >> Professor Roger Ratcliff had the fourth most frequently downloaded article published in APA Journals in 2018. His work addresses sleep deprivation and memory.
- >> The Ohio State University Critical Difference for Women Grant (\$650) went to student **Gabrielle Tiede** for "Convergent validity of eye-tracking for outcome measurement in treatment studies for children with autism." The award is for women seeking advanced education and enhanced professional lives at Ohio State.
- >> NIH R21 Early Career Research Award (\$468,000 over three years) went to **Katherine Walton**, assistant professor, for "Measurement of Social Communication Outcomes in Young Children with Autism Spectrum Disorder." Walton also received the Eugene Washington PCORI Engagement Award (\$238,676 over two years) for "Rethinking Stakeholder Roles in Early Autism Spectrum Condition Interventions: Moving from Participants to Engaged Collaborators."

#### **NOTABLE OUTREACH**

- >> Liz Kirby hosted a high school outreach event this past spring. She worked with a group of seven undergraduate students, one psychology graduate student and one postdoc to develop a one-hour interactive presentation about stem cells. They presented at a Metro High School biology course.
- >> Last November, assistant professor of psychology and economics lan Krajbich hosted an outreach event at Ohio State, "The Neuroscience of Self Control." The event featured three talks given by faculty centering on what neuroscience can tell us about self-control. The event was funded by the National Science Foundation, the Ohio State Decision Sciences Collaborative and the Department of Psychology. In October, Krajbich also ran a pre-conference workshop on "Choice Process Data" prior to the Economic Science Association meeting in Antigua, Guatemala. The workshop aimed to bridge psychology and economics by focusing on process data and models, applied to economic decision making. Both events were funded from Krajbich's National Science Foundation CAREER grant.
- >> For the second year, Ohio State hosted the Ohio Psychology Teaching Conference, a conference for teachers of psychology at every level in Ohio, including high school, community college and four-year baccalaureate colleges. Melissa Beers is a co-chair and conference organizer. The conference was funded in part by grants from APA's education directorate and the Society for the Teaching of Psychology. Approximately 50 teachers of psychology attended from more than 30 different institutions. Ohio State faculty Ruchika Prakash, Barbara Andersen and Brad Bushman presented their current research along with implications for teaching undergraduate courses. Participants toured research laboratories, including the Center for Cognitive and Behavioral Brain Imaging and Andy Leber's Cognitive Control Laboratory. Learn more at focusonpsych.org.
- >> We were thrilled to participate in the **2019 COSI Science**Festival last May. Hundreds of individuals and organizations from across the state displayed their work to the community, including a number of affiliated labs and staff within Ohio State's Psychology Department. Check out event photos and more at *go.osu.edu/cosi-festival-2019*.

#### AWARDS/HONORS



JENNIFER CHEAVENS, associate professor, received The Vaillant Award for Contributions to Positive Clinical Psychology from the International Positive Psychology Association. The award was presented at the sixth World Congress on Positive Psychology in Melbourne, Australia. This award recognizes distinguished contributions in the application of positive psychology in the clinical realm including, but not limited to, designing, delivery of, training in and evaluation of positive psychology assessments and interventions.

**JIAGENG CHEN**, graduate student in the Golomb Lab, won an OPAM travel award.

KRISTIN DELL'ARMO, graduate student, received the Department of Psychology Teaching Excellence for Graduate Students award; BRIANA BROWNLOW received the Graduate Associate Teaching Award (GATA) — a major honor, as only 10 winners were named from the entire university.

**RUSSELL FAZIO**, professor, will receive the Distinguished Scientist Award at the Society of Experimental Social Psychology (SESP) this fall.

JULIE GOLOMB received the American Psychological Association Distinguished Scientific Award for Early Career Contribution to Psychology (2019), Robert L. Fantz Memorial Award for Young Investigators (American Psychological Association, 2018), Federation of Associations in Behavioral and Brain Sciences Early Career Impact Award (2018).

**LUC LECAVALIER** received the Joan N. Huber Faculty Fellowship Award.

(Continued on next page)

### **AWARDS/HONORS CONTINUED...**



ALISA PAULSEN received both a regional and national award from NACADA: The Global Community for Academic Advising. She received their 2019 Award for Outstanding Administrator. This national honor is part of an extremely selective and extensive process bestowed to administrators for distinguished work within their departments.

In October 2018, SCOTT SCHNELLE,
JUNMIN WANG, HAIJUN SU and RICHARD
JAGACINSKI received the Andrew P. Sage
Best Transactions Paper Award from the IEEE
Systems, Man and Cybernetics Society for
their paper, "A personalizable driver-steering
model capable of predicting driver behaviors
in vehicle collision avoidance maneuvers,"
published in IEEE Transactions on HumanMachine Systems, 47, 625-635, 2017.

**PAUL SCOTTI**, graduate student in Golomb and Leber Labs, won a NSF Graduate Research Fellowship.

SPRING ALUMNUS AWARDS: details/photos available at *go.osu.edu/psych-alumnus-awards-sp19*.

## ALUMNI NEWS







# Sports psychologist explores what happens when sports end

What happens when the stadium lights flicker out? When the stands empty? When the final whistle blows?

What happens after a studentathlete plays their last game and hangs up their jersey for good?

For Ohio State sports psychologist and former Buckeye football player Steve Graef '04, it was a seamless transition from athletics to post-college life. Graef was a preferred walk-on coming out of Lake High School in Canton



and saw little playing time for the Buckeyes, so it was fairly easy for him to move on from the game.

For some student-athletes, however, it isn't so simple.

Graef recently moderated a panel of speakers consisting of several former Buckeyes — including men's basketball player Greg Oden, football player Joshua Perry and synchronized swimmer Monica Velazquez-Stiak — during "When Sports End," an event hosted by the College of Arts and Sciences' Sports and Society Initiative. Other featured speakers throughout the event include Chris Knoester, associate professor of sociology, Ohio State lead sports psychologist Jennifer Carter and former Buckeye football player Malik Barrow.

"It's not all puppy dogs and rainbows retiring from sports," Graef said.

"It can be difficult, but it can also be one of the best things ever because you have an opportunity to open the door and begin writing a new chapter. It's really about that kind of balanced, fair assessment of both the struggles and the strivings associated with retirement."

Graef's experience as a studentathlete helps him understand and appreciate the culture of athletics and the unique demands student-athletes can face. He also credits his time in the classroom for helping shape his career.

"Ohio State certainly served as a strong foundation for me to start my psychology training and career."

"My psychology degree at Ohio State was paramount, as too were other opportunities like psychology club, a psychology peer-mentoring program, research opportunities with faculty and receiving instruction from topnotch and well-respected educators," he said. "Ohio State certainly served as a strong foundation for me to start my psychology training and career."

Both Oden and Perry recently retired from professional sports after injuries derailed promising careers. Oden guided Ohio State to the 2007 national championship game and was drafted No. 1 overall by the NBA's Portland Trail Blazers. Injuries sustained to his knees, however, forced him off the court, and he retired from the NBA in 2014. Perry played linebacker for Ohio State for four seasons from 2012 to 2015. He helped the Buckeyes win a national title in 2015 and was a fourth-round draft pick by the NFL's San Diego Chargers. He retired in July of 2018 after suffering his sixth concussion.

After their playing days ended, Oden and Perry turned their focus to other career paths. Oden returned to Ohio State and graduated spring 2019 with a bachelor of science in sport industry. Perry, who earned his degree in consumer and family financial services, is founder and CEO of the nonprofit Joshua Perry Family Foundation.

Both are examples of athletes who, after their careers ended prematurely, were able to move forward.

"It doesn't have to be a terrible process," Graef said. "Though, for a lot of folks, it can also be a bit bittersweet. Though they are excited to move on from the sport, there's also a bit of hesitancy and sadness with leaving that familiarity and your teammates."

Examining how athletes cope with the end of their athletic careers is just a part of the larger field of sports psychology. Student-athletes navigate athletic commitments, responsibilities and pressures while at the same time adjusting to college life. Graef, who earned his PhD in counseling psychology from the University of Akron, helps them juggle those aspects.

"It's about increasing awareness and getting a slightly different side of what athletes, and even high-performers in general, experience," he said. "There's a little bit more underneath the strength and the nimbleness — there's a real person who's trying to navigate and figure out this life just like all of us."



### 2018 RECIPIENT

### **SALLY ROGERS**

Sally Rogers received her PhD from Ohio State in 1975. She specializes in developmental and treatment research in autism and other developmental

disorders. Rogers is an internationally-recognized expert in working with children with developmental disabilities and their families, especially young children with autism. She studies early developmental processes, including imitation, social-communicative behavior, development of motor skills, language and social interaction patterns. Her clinical research investigates cognitive, behavioral, social, emotional and adaptive functioning; early intervention for children with autism; developing treatment and educational interventions for persons with autism of all ages, and social skills groups for adults with autism.

Source: go.osu.edu/aucd-itac-srogers

"Rogers is a giant in the field of developmental disabilities research. Not only has her work impacted countless families over decades, it has redefined how our society views and treats young children with autism spectrum disorder." – Luc Lecavalier

### 2019 RECIPIENT

### KEITH WIDAMAN



Keith Widaman is a Distinguished Professor of Education in the Graduate School of Education at the University of California, Riverside. He received his PhD from Ohio State, majoring in developmental psychology and minoring in quantitative psychology. His substantive interests relate to child and developmental psychology, intelligence, intellectual disabilities, processes and individual differences in cognition (e.g., numerical cognition and arithmetic) and gene X environment interactions in determining developmental outcomes. His methodological research has focused on factor modeling and application issues, psychometrics and psychological assessment methods.

"I have always felt that I obtained a first-rate graduate education at Ohio State, that my tenure in graduate school provided a solid foundation for launching my career. The faculty were exacting, and the classes were tough. The crop of graduate students was also very strong, with quite a number who have gone on to make major contributions to our field, and I learn a lot from them as we all strove to increase our knowledge and skill in our field. At the [alumnus] reception on April 23, your announcing of various awards for members of the department clearly indicated that the quality of the department has, if anything, improved since my time in graduate school. When I speak with others about graduate school, I have always had only laudatory things to say about the Ohio State Department of Psychology – I am sure you know that you have a very strong department, and I am proud to have graduated from it."

# DISTINGUISHED PROFESSORS

### **BARBARA ANDERSEN**

Barbara Andersen is an Arts and Sciences Distinguished Professor of Psychology who is also an affiliated faculty within the College of Public Health and College of Medicine.

### Tell us about your work as PI and some achievements of which you are proud?

As PI (NCI), my early contributions provided the first studies of gynecologic cancer survivorship and raised attention to the issue of sexual dysfunction in cancer patients.

I formulated the Biobehavioral Model of Cancer Stress and Disease Course, which was the first comprehensive model of psychological, behavioral and biological factors and their potential role in disease progression. A randomized clinical trial (RCT), the Stress and Immunity Breast Cancer Project (SIBCP) was designed to test the hypothesis that patients receiving a psychological (biobehavioral) intervention designed to reduce stress and enhance quality of life would show improved disease outcomes compared to patients who received usual care. Robust, durable gains were achieved across all primary and secondary outcomes, including reduced risk of breast cancer recurrence and reduced risk of breast cancer death following recurrence.

In follow-up, as PI (ACS, NCI), efforts focused on understanding the circumstances that place patients at risk for distress and quality of life disruption and tests of the generalizability of the biobehavioral intervention. First, we provided the only controlled, prospective biobehavioral studies of recurrence. This work led to the trial testing of a BBI-tailored intervention. Second, study of the impact of depressive symptoms and the relationship of depressive symptoms to physiological and inflammatory responses led to the development and testing of a BBI/cognitive behavioral intervention for patients with major depressive disorder.

### What is some of your notable recent work?

Most recently as PI (NCI), our group has both developed and provided empirical support for psychological interventions for cancer patients and took steps for their dissemination and implementation. We have trained 170+ mental health providers from diverse clinical settings. Our efforts are conceptually driven and have provided empirical support for our methods of dissemination education, implementation support, high and sustained levels of biobehavioral intervention usage, and shown positive patient reported outcomes when providers use evidence-based (BBI) treatment.

#### What are your current areas of research?

My ongoing research examines biobehavioral aspects of chronic lymphocytic leukemia and stage IV non-small cell lung cancer.



"We have trained 170+ mental health providers from diverse clinical settings. Our efforts are conceptually driven and have provided empirical support for our methods..."

# DISTINGUISHED CONTINUED...





Mark Pitt is an Arts and Sciences Distinguished Professor of Psychology. He holds a master's of science and PhD in cognitive psychology from Yale University.

#### Tell us about your latest work and research.

I work in two fields, which occasionally intersect in the lab, language understanding and computational modeling.

How does your brain translate the sounds coming out of a speaker's mouth into recognizable words? It is an effortless task for the brain (no schooling required!), yet scientists struggle to understand how it is accomplished. It gets even more complicated when you consider verbal communication often takes place in the presence of other sounds. How is your brain able to filter out other noises and conversations (e.g., in a coffee shop) and listen only to the one of interest? Current projects in the lab explores this question, examining how your ability to focus attention (or ignore distracting sounds) aids your ability to understand what a speaker is saying. This ability is particularly important when listening in a noisy environment.

My research in computational modeling is done with a longtime close collaborator, Jay Myung. Psychologists conduct experiments to learn about brain and behavior. Experiments can be difficult to conduct because it is difficult to design an experiment. Myung and I develop and apply machine-learning methods to assist researchers make these decisions. These methods can make the experiment "smarter" and more efficient (taking less time), and enable the researcher to draw firmer conclusions from the experiment. As an example, application of our methods in a test that measures impulsive behavior (e.g., drug addiction, gambling) makes it more precise and requires less than two minutes to administer.

### How does it feel to receive the recognition of Distinguished Professor at Ohio State?

I am honored to be recognized by my colleagues. I was quite surprised.

### What do you wish more people understood about the research you conduct?

It is really difficult to measure what is going on in the brain because we cannot directly peer into it and observe its inner workings, like peering into an engine and seeing how all of the parts work together to create combustion.

### BRIANA BROWNLOW AND MYSHELLIA CARTER

Two psychology students — an undergrad and a PhD candidate — are learning firsthand the benefits of mentorship.

Briana Brownlow, a fourth-year PhD candidate in clinical psychology at Ohio State, is president of the university's Black Graduate and Professional Student Caucus (BGPSC), a graduate student organization whose mission promotes and develops academic, cultural, social and service programs that support Ohio State students and members of the larger Columbus community, with a special emphasis on the black community and black graduate and professional students.

As president of the BGPSC, Brownlow created and introduced a new initiative — The BGPSC Mentoring Program — where black graduate and professional students have been paired with black undergraduates who share similar academic and career interests.

Myshellia Carter, a fourth-year undergraduate student, is Brownlow's mentee.

"I have made an incredible connection to my mentor. She embodies everything that I see myself being in the future. I truly feel empowered after every interaction with her..."

"I have made an incredible connection to my mentor," said Carter, who plans to graduate in spring 2020, is a member of Psi Chi, is a Diversity and Inclusion Young Scholars Ambassador and this summer worked in Kentucky with a youth camp. "She embodies everything that I see myself being in the future. I truly feel empowered after every interaction with her, and the sisterly relationship we have created is extremely authentic. She has taken the time to create a space of transparency, where we are able to be our authentic selves. This type of environment has fostered personal and professional growth."

As part of Brownlow's focus on mentorship, she has also partnered with the Columbus



**Urban League Young Professionals** (CULYP) to provide mentors for students interested in entering the workforce. CULYP, a network of young professionals supporting and empowering African Americans and disenfranchised groups through economic, educational and social progress, is already off to a strong start, with 70 black undergraduates, 60 graduate/professional students and 15 CULYP members participating in the 2018-2019 school year. Participants in the program include members from various student organizations, including the Black Law Student Association, Black MBA Association, National Organization for the Professional Advancement of Black Chemists and Chemical Engineers at The Ohio State University, Black Student Association, African Youth League, the African American Heritage Festival, and Society of Sisters.

The program also includes two networking events over the academic year where all mentors and mentees come together to meet one another, the first which occurred in September.

Brownlow raised over \$14,000 for the mentoring program through funding and sponsorships from the Office of Diversity and Inclusion; Office of Student Life; Graduate School; Multicultural Center; Department of

Psychology; Fisher College of Business; College of Medicine: College of Public Health; College of Education and Human Ecology and the Department of English. These funds supported four scholarships awarded to undergraduate participants in the mentoring program in April 2019. These funds will also provide scholarships for graduate entry exam prep (GRE, MCAT, LSAT, etc.) for undergraduate participants through this program. Additionally, the Graduate School has agreed to provide application fee waivers in the fall of 2019 for participants in the mentoring program who are applying to graduate school at Ohio State. Based on Brownlow's work with mentoring, she received the College of Arts and Sciences' Graduate Student Award for Distinguished Service for excellence in mentoring.

Brownlow's research interests focus on examining how experiences with racism, discrimination and other forms of psychological stress specific to the experience of black Americans "get under the skin" and impacts both their physical and mental health. She is additionally interested in how people of color and other marginalized groups must regulate their emotions in the face of these unique challenges and the potential consequences of these emotion regulatory strategies as they may relate to broader health disparities.

Brownlow teaches undergraduate psychology courses at Ohio State, such as Introduction to Psychology (PSYCH 1100) and (soon) Abnormal Psychology. She also taught the Young Scholars Program Summer Bridge Experience – Introduction to Psychology in summer 2018. The Young Scholars Program provides comprehensive collegiate support services for students funded by the Young Scholars scholarship for academically talented, first-generation students with high financial need. This includes the Summer Bridge Experience, an intensive three-week pre-college experience. Students are provided with a simulated collegiate experience focusing on select foundational topics from Introduction to Psychology, study skills, wellness and personal development. She recently was one of 10 selected for the 2019 Graduate Associate Teaching Award, Ohio State's highest recognition of the exceptional teaching provided by graduate students.





### CAROLINE COLEMAN: UNDERGRADUATE STUDENT

Caroline Coleman, originally from the Washington, D.C., area, wanted to explore a new part of the country and saw Ohio State (and Columbus) as a perfect blend between big city and college town. Before arriving at Ohio State, she knew psychology was the major for her, and her passion for the field has only increased after taking coursework in Psychology and the Law, Positive Psychology and Abnormal Psychology Analysis.

During her time here, Caroline completed two internships: one with the Homicide Cold Case Unit and the other with the National Center for Missing and Exploited Children. She also spent nearly three months in Spain last summer living with a host family and studying at La Universidad de Salamanca.

"One of my life goals is to become completely fluent in Spanish," she said. "I definitely believe this experience was a significant step in attaining that goal."

In summer 2019, she completed an internship with the United States Probation Office and assisted federal probation officers in developing individualized case plans for each client. Through her experience, she discovered that probation is a great balance between law and social work. The federal probation system does an incredible job at helping offenders reintegrate into the community and escape the "offender" label and stigma by offering numerous re-entry programs and utilizing community resources.

For the last two years, she has also worked as a student safety services officer for The Ohio State University Department of Public Safety.

After graduation, Caroline plans to work in the federal law enforcement/criminal justice realm with a focus on rehabilitation and corrections. Her advice to other psychology major students: "Even if you are unsure of what career path you want to take, choose courses that seem to interest you. Get involved and make connections; your professors can be great resources!"

"Even if you are unsure of what career path you want to take, choose courses that seem to interest you. Get involved and make connections; your professors can be great resources!"

## FEATURED FACULTY AND RESEARCH





Zeynep Saygin is an assistant professor of psychology and is affiliated faculty with the Center for Cognitive and Behavioral Brain Imaging. She leads the Saygin Cognitive Neuroscience Lab within the Department of Psychology, and she earned her PhD in systems neuroscience from the Massachusetts Institute of Technology.

### Tell us about your TedTalk. What was it about?

The goal of my talk was to foster enthusiasm about longitudinal neuroimaging and predictive modeling to the Ohio State community and to the public-at-large. Everyone at some point in their life has wondered how they became the person that they are today — and if you are a parent, you have probably wondered who your child will become and how everything you do or say around them may influence them. This is the classic nature versus nurture debate, and although we are far from a concrete answer, we now have the neurobiological tools to start hacking away at this debate. We as scientists now have the ability to use noninvasive brain imaging to make individualized predictions about how a child will develop and predict who they will become by scanning the brains of infants longitudinally as they develop. The field of developmental cognitive neuroscience has come a long way, and I am optimistic that longitudinal, predictive research into how an individual child develops will further pave the way for individualized neuroscience, medicine and education.

For example, in my lab's work, we have scanned children before they can read and were able to predict where the reading areas in their brains will emerge two years later after they can read. Our current research suggests that these neural markers may even be present in neonates, a week out of the womb. We also used brain imaging to predict whether a child will have reading difficulty and will likely develop dyslexia; importantly, this can be achieved even before a child learns to read at all, long before a teacher or parent could identify dyslexia. Studying the developing human brain and making individual-subject predictions has both scientific and practical importance. For basic science, using cutting-edge knowledge in cognitive neuroscience to predict developmental milestones in each child will establish where we are as a field in understanding the relationship between brain and behavior. Without accurately making these predictions, we cannot say that we understand the brain. Furthermore, our inaccuracies at making these predictions can tell us how we can improve as a field. This work also provides a way to test nature

versus nurture debates and what would happen to a typically developing brain if there are certain changes in experience. This research also has practical importance and broad clinical and educational applications: Predicting disorders before they are apparent or before the relevant skill can even be measured (as in the case of reading) can allow us to develop specific interventions before a child starts having trouble. Interventions, remediation and targeted practice can improve the quality of life or perhaps even prevent the development of certain disorders.



### What impact has this had on your work and research?

My lab uses longitudinal neuroimaging to measure brain activity and connectivity across time and uses computational modeling to predict behavioral measures and developmental milestones in each individual child. My hope with the talk was to reach a wider audience, emphasize the importance of this work and engage the general public so they can become inspired to join the field or participate in this type of research, and understand the implications of this research.

### What is the experience like to give a talk such as this to a widespread audience? Has it influenced you and your work in any way going forward?

It was intense, but I really enjoy teaching and communicating my research. And I had lots of support from my lab, family, friends, colleagues and my TEDx coaches. Preparing for such a talk allowed me to focus and compress my research into a digestible summary and better convey how the general public would be affected by it.

Watch Saygin's TedTalk at go.osu.edu/who-child-become-zsaygin.

### BENEDETTA LEUNER



# Study suggests a new way to think about the brain's link to postpartum depression

# Research in animals shows brain's immune system is activated by stress during pregnancy

#### From news.osu.edu

Chronic stress during pregnancy triggers an immune response in the brain that has potential to alter brain functions in ways that could contribute to postpartum depression, new research in animals suggests.

The study is the first to show evidence of this gestational stress response in the brain, which is unexpected because the immune system in both the body and the brain is suppressed during a normal pregnancy.

The Ohio State University researchers who made the discovery have been studying the brain biology behind postpartum depression for several years, creating depressive symptoms in pregnant rats by exposing them to chronic stress. Chronic stress during pregnancy is a common predictor of postpartum depression, which is characterized by extreme sadness, anxiety and exhaustion that can interfere with a mother's ability to care for herself or her baby.

Stress is known to lead to inflammation, which prompts an immune response to protect against inflammation's harmful effects. Based on what they already know about compromised brain signaling in rats stressed during pregnancy, the scientists suspect the immune cells in the brain responding to stress may be involved. If that's the case, the immune changes may create circumstances in the brain that increase susceptibility to depression. In unstressed pregnant rats, the normal suppression of the immune system in the body and the brain remained intact



throughout pregnancy. In contrast, stressed rats showed evidence of neuroinflammation. The study also showed that the stressed rats' immune response in the rest of their bodies was not active.

"That suggests there's this disconnect between what's happening in the body and what's happening in the brain," said Benedetta Leuner, associate professor of psychology at Ohio State and lead author of the study. She speculated that the signaling changes her lab has seen before in the brain and this immune response are happening in parallel, and may be directly related.

Leuner presented the findings Oct. 19, 2019, at the Society for Neuroscience meeting in Chicago.

In this work, rats are exposed to unpredictable and varied stressful events throughout their pregnancies, a practice that adds a component of psychological stress but does not harm the health of the mother or her offspring.

In the stressed animals, the researchers found numerous proinflammatory compounds that indicated there was an increase in the number and activity levels of the primary immune cells in the brain called microglia. Their findings also suggested the microglia were affecting brain cells in the process. Leuner's lab previously determined in rats that chronic stress



during pregnancy prevented motherhood-related increases in dendritic spines, which are hair-like growths on brain cells that are used to exchange information with other neurons. These same rats behaved in ways similar to what is seen in human moms with postpartum depression: They had less physical interaction with their babies and showed depressive-like symptoms.

Leuner and colleagues now plan to see whether the brain immune cells activated during gestational stress are responsible for the dendritic spine elimination. They suspect that microglia might be clearing away synaptic material on dendrites.

Leuner has partnered on this research with Kathryn Lenz, assistant professor of psychology, whose work explores the role of the immune system in brain development.

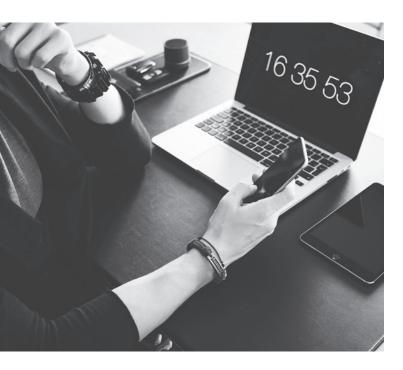
Though pregnancy was known to suppress the body's immune system, Lenz and Leuner showed in a previous study that the same suppression of the immune system happens in the brain during pregnancy – the number of microglia in the brain decreases.

"By layering gestational stress onto a normal pregnancy, we're finding this normal immunosuppression that should happen during pregnancy doesn't occur, and in fact there's evidence of inflammatory signaling in the brain that could be bad for dendritic spines and synapses," Lenz said. "But we've also found changes in the microglia's appetite. Every characteristic we've looked at in these cells has changed as a result of this stress."

The researchers are now trying to visualize microglia while they're performing their cleanup to see if they are eating synaptic material. They are also manipulating inflammatory changes in the brain to see if that reverses postpartum depression-like behavior in rats.

"We've seen the depressive-like symptoms and neural changes in terms of dendritic spines and synapses, and now we have neuroimmune changes suggesting that those microglia could be contributing to the neural changes – which we think ultimately underlie the behaviors," Leuner said.

The research was supported by the National Institutes of Health. Ohio State current and former students Caitlin Goodpaster, Nicholas Deems and Rachel Gilfarb also worked on the study.





### Distractions distort what's real, study suggests

Excerpt from news.osu.edu

A new study suggests that distractions – those pesky interruptions that pull us away from our goals – might change our perception of what's real, making us believe we saw something different from what we actually saw.

Even more troubling, the study suggests people might not realize their perception has changed – to the contrary, they might feel great confidence in what they think they saw.

"We wanted to find out what happens if you're trying to pay attention to one thing and something else interferes," said Julie Golomb, senior author and associate professor of psychology. "Our visual environment contains way too many things for us to process in a given moment, so how do we reconcile those pressures?"

The results, published in the *Journal of Experimental Psychology: Human Perception and Performance*, indicate that, sometimes, we don't.

The study was co-authored by Andrew Leber, an associate professor of psychology, and Jiageng Chen, lead author and graduate student researcher at Ohio State's Vision and Cognitive Neuroscience Laboratory.

Read more about this work at go.osu.edu/distractions-reality-check.



### Warning to adults: Children notice everything

Excerpt from news.osu.edu

Adults are really good at paying attention only to what you tell them to – but children don't ignore anything.

That difference can actually help children do better than adults in some learning situations, a new study suggests.

Researchers surprised adults and 4- and 5-year-old children participating in the study by making information that was irrelevant at the beginning of the experiment suddenly important for a task they had to complete.

"Adults had a hard time readjusting because they didn't learn the information they thought wouldn't be important," said Vladimir Sloutsky, co-author of the study and professor of psychology.

"Children, on the other hand, recovered quickly to the new circumstances because they weren't ignoring anything."

"Children, on the other hand, recovered quickly to the new circumstances because they weren't ignoring anything. I'm sure a lot of parents will recognize that tendency of children to notice everything, even when you wish they wouldn't."

Sloutsky conducted the study with Nathaniel Blanco, a postdoctoral researcher in psychology at Ohio State. Their research was published online in the journal *Developmental Psychology* and will appear in a future print edition.

The research was supported by grants from the National Institutes of Health.

Read more about this research at go.osu.edu/always-watching.





### **WEARY SYMPOSIUM 2019**

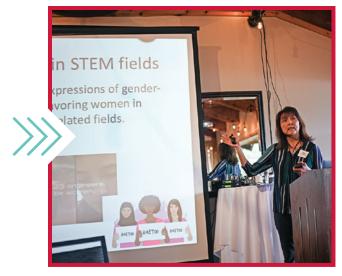
On June 18-19, the Department of Psychology hosted the Weary Symposium on Diversity and Social Identity.

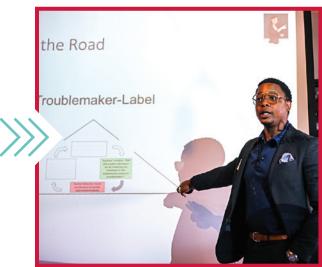
Over 100 scholars from 33 universities attended the conference to present research, data blitzes and posters on research examining diversity, social identity, intergroup relations and discrimination.

Distinguished speakers included alumni of the Ohio State social psychology program, Claude Steele and Denise Sekaquaptewa, as well as several top psychologists studying diversity and social identity such as Jennifer Richeson, Hilary Bergsieker, Mary Murphy, Sylvia Perry and Jason Okonofua.

The Weary Symposium is named after Gifford Weary, former department chair, in recognition of her continued leadership and support for the social area.

For additional photos and details, visit psychology.osu.edu/news/weary-symposium.





# IMPACT OF GIVING



Motivated gratitude.

Those two words do not capture everything about Gifford "Giff" Weary and her nearly 40-year relationship with The Ohio State University, but her efforts to give back come with high expectations.

Put another way: She doesn't like second place and is willing to do what is needed to be the best and get the best from others.

"I want to see Ohio State go absolutely as far as it can go. We need to invest time as well as money," Giff says. "It's a lot harder to stay No. 1 than to become No. 1."

Giff, her husband David J. Angelo and The Weary Family Foundation endowed the Robert K. and Dale J. Weary Chair in social psychology and are generous supporters of the Department of Psychology, where she began working in 1978.

"Ohio State had the top program and I wanted to be at the top program," she says, adding that new academic leaders in the 1980s took her department and the university to new heights. "There was an eye on excellence in everything we did. Excellence and elevating the profile of the institution. There was an intellectual vibrancy that sustained me and inspired what I was doing."

Giff, David and the foundation endowed the chair because they want to ensure a program that has been the best for 50 years continues at that level nationally and internationally.

"It's a hub discipline; look and you can see the branches all over campus. We need to elevate and keep it strong, so it can raise other disciplines," she says.

Giff serves on the Foundation Board of Directors – currently chairing the leadership and nominating committee – because she knows the critical importance of development dollars in sustaining and elevating academic programs.

"It's not easy to stay No. 1 and you can't do it with state dollars alone," she says. "Development dollars really make a difference and they will only become more important down the road. If I can help the Foundation Board connect with Ohio State in ways it hasn't before and accomplish its mission, then that's time well spent."



Her focus on being the best starts with students. She wants to see a diverse group that focuses on "big world problems." To make that happen, she encourages undergraduates to find their passions and dig deeply into areas that they love and can sustain them for 50 years.

"We're creating citizens here and part of citizenship is giving back. The opportunities I've been given – and they are being given – come out of a lot of work, time and money. We need to create a culture of giving back."

### "We need to create a culture of giving back."

Core academic disciplines, including social psychology, must be top destinations for scientists, students and policy makers. "We need to identify those and keep them at the top," Giff says.

"I believe in the power of education to change lives. We need to embrace a culture of lifelong learning...and improve the quality of life for people. It just doesn't stop," she says.

Giff also has no plans of stopping. It's about motivated gratitude.

"Giving of time is the greatest gift. None of us have enough of it," she says. "I have had a life and a career I never dreamed I would have."



### SUPPORT THE DEPARTMENT

The faculty, staff and students in the Department of Psychology are committed to attracting, retaining and educating the best and brightest students. Our collective mission is to make the next generation of psychology graduates the very best it can be.

### But we can't do that alone.

You can help to support psychology's teaching, research and outreach efforts with a tax-deductible gift to a fund that will help us fulfill that mission. Your gift makes a tangible difference in the lives of undergraduate and graduate students and scientists who are building on the past to change the future.

We are proud of the work we do in the Department of Psychology, and we invite you to help us make it better.

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We thank you for your support of the Department of Psychology at Ohio State. If you wish to make a donation to enhance our work and create opportunities for our students, please consider directing your contribution to one of the highlighted funds listed below. Please note that this is only a selection of featured funds. There are many other opportunities to give. Please visit our website for additional information

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Support for female graduate students with financial need in the Psychology Department.

For a full list of funds and ways you can give to support the department, visit psychology.osu.edu/alumni/support

To make your gift online, visit *giveto.osu.edu* and search for the desired fund name or number.

Questions? Please call **614-292-2141** or email **ascadvancement@osu.edu**.



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