INSIDE:
CHANGEMAKER OF THE YEAR
Ryan Stoll brings home the hardware

FOUNDERS’ DAY FACULTY RESEARCHER AWARD
Nancy Gonzales is recognized for breakthrough research

GAME CHANGERS, INNOVATORS & AWARD WINNERS
Welcome!

Welcome to the Department of Psychology at ASU! Operating at the intersection of the mind, brain, and behavior, psychology explores many of the world's most complex issues and fascinating questions. Our exceptional faculty of internationally recognized researchers and teachers, working with our students, investigates many of the mysteries and challenges of human behavior.

Our award-winning researchers and teachers offer amazing opportunities to both undergraduate and graduate students, through coursework, research, and community-based experiences. We teach our students fundamental scientific methods—Psychology is a STEM discipline—help them develop their critical thinking and communication skills, and provide them opportunities to translate research knowledge into practical impact. We prepare our students not just for careers in Psychology but also in any field that relies on understanding human behavior—including business, health care, education, law, and media. It's no surprise that the Psychology major at the Tempe campus is one of the most popular at ASU.

Whether you are interested in mental health, how the brain works, social relationships, cognitive processes, developmental and change processes, or quantitative methods for understanding behavior, the ASU Department of Psychology in Tempe provides unique opportunities to explore what it is to be human. We welcome you to join us!

Steven Neuberg, Ph.D.
Foundation Professor and Chair
Department of Psychology
Since arriving on the ASU campus in 1971 as a new assistant professor, Robert Cialdini has been giving to the Department of Psychology—through his ground-breaking research, compelling teaching and mentoring, and generous service to the broader community.

Now, 47 years later, the Regents’ Professor Emeritus of Psychology and Marketing continues to give. Along with his wife, Bobette Gorden, he has created the Robert B. Cialdini Leap Forward Fund, which provides $500,000 to elevate the department’s research, application, teaching, and outreach missions.

“The Leap Forward funds recognize that the starting point for research accomplishments at ASU is way up high,” Cialdini said. “We thought it would be beneficial to provide resources to allow a leap to the next level.”

The department’s early investments are diverse and include seed-funding for a cutting-edge faculty research project on positive emotions in marriage, an intervention to help students with alcohol infractions, summer opportunities for students to gain experience in the department’s research labs, computing infrastructure for enhancing big data analyses, technology for facilitating brain imaging research and opportunities for doctoral students to get specialized training over the summers.

“Not too long ago, we made a conscious decision not to make any big lifestyle changes in retirement and to instead help causes we believe in,” Gorden said. “We believe in the people who make up the ASU Department of Psychology. It is all about the people, and we believe the department will be a good shepherd of these funds.”
“This donation is so much like Bob and Bobette,” said Foundation Professor and Department of Psychology Chair, Steven Neuberg. “They’ve contributed greatly to the department in the past and are helping to lead us into the future. We’re very grateful—for the forward-looking opportunities provided by their gift, and for the trust they have in us to be creative, effective stewards of it.”

An empty desk

Cialdini’s path to a storied career at ASU and as an internationally renowned author began with an empty desk at the University of Wisconsin – Milwaukee. He studied psychology in college but focused on animal behavior. His first publication in a peer-reviewed journal was in Science: the study was on earthworm pheromones. Cialdini said he was planning to go to graduate school to become an ethologist.

“But, I had a mad crush on Marilyn Repinski,” he said. “She was taking a social psychology course and there was an empty desk next to her. At that point in our relationship, we wanted to be together all of the time, so I sat in the desk and took the course.”

By the end of the semester, Cialdini said he was more enamored with social psychology than with Marilyn.

“That is saying a lot because he really liked Marilyn,” Gorden said.

Cialdini told his social psychology professor that he made a mistake by planning to study animal behavior in graduate school and that he wanted to study human behavior. At the time, one graduate program was still accepting applications. Cialdini applied to the University of North Carolina in Chapel Hill and was accepted. After earning his doctorate from UNC, he completed post-doctoral studies at Columbia University before joining the ASU Department of Psychology.

“What if there hadn’t been an empty desk?” Cialdini asked. “I found my passion by a fortuitous accident.”

Cialdini credits the supportive culture at ASU with allowing him to pursue his passion of studying human behavior.

“ASU is home and has been my home for 35 years,” Cialdini said. “I am grateful to the university and department for giving me the support and freedoms to really accomplish some of my goals.”

In 1984, Cialdini published “Influence: the Psychology of Persuasion,” which has sold over 3 million copies and has been translated into more than 30 languages. He recently wrote a new book, “Pre-suasion: a Revolutionary Way to Influence and Persuade.” Together with Gorden, Cialdini now runs the company Influence at Work, and he is revising “Influence” for an upcoming sixth edition.

“My ASU colleague Wilhelmina Wosinska told me that my book ‘Influence’ has been taught for so long in Poland that her students think I am dead,” Cialdini said. “I have to update the book to disabuse the Polish students of my demise.”

Video: Thank you Bob and Bobette - From All of us here at ASU Department of Psychology
The legal drinking age in the United States might be 21 years, but teenagers and pre-teens drink over 10 percent of all alcohol consumed in the country.

Adolescents who experiment with drugs including alcohol are more likely to develop lifelong substance abuse problems, but researchers in Arizona State University’s Department of Psychology have created a highly-effective program to decrease alcohol use in teenagers. Just spending 18 hours in the program produced protective effects against teenage alcohol misuse that were long-lasting.

“We found that just helping middle school students and their parents engage in school and with each other more effectively protected those students from problem alcohol use five years later, when they were seniors in high school,” said Nancy Gonzales, Foundation Professor of psychology and associate dean of faculty at ASU. She is lead author on the study about the program, which was published in the March 21 issue of JAMA Psychiatry.

“Adolescence is a critical period for the development of addiction disorders,” Gonzales said, “and kids who start drinking before age 14 have a significantly higher risk of going on to develop problem drinking.”

The Bridges/Puentes program
The researchers recruited seventh graders and their parents to participate in the program, called Bridges in English and Puentes in Spanish, from Title 1 schools with large populations of Mexican-American students. Compared to other adolescent groups, Latino teenagers have an increased risk of alcohol abuse.

Families were assigned to the intervention, which consisted of nine interactive workshops, or they were assigned to a control group and completed a workshop. The interactive sessions were led by teachers who had been trained by the ASU researchers. Each session taught
Reducing alcohol abuse

parents and students a skill, such as good listening practices or strategies for talking about difficult topics, and had them practice as a family.

For example, the first session of the program had the students brainstorm about their futures by focusing on future images of themselves. The parents learned about listening and communication skills. When the families reunited at the end of the session, parents listened to their child’s thoughts about their future and then discussed how they could work together to achieve future goals. Throughout the program, parents also learned how to motivate and support their children’s development and grit, and students practiced skills for self-control and dealing with life challenges.

In seventh grade and in their senior year, participating students answered questions from the Youth Risk Behavior Survey developed by the Centers for Disease Control and Prevention and the Diagnostic Interview Schedule for Children developed by the National Institute of Mental Health. To analyze the data, the researchers divided the Bridges/Puentes and control participants into two groups: those who reported any alcohol use in seventh grade and those who reported no alcohol use as seventh graders. All participants were 15 years or younger in seventh grade.

Reduced alcohol use in at-risk teenagers

The effect of the Bridges/Puentes program on the students who reported alcohol use as seventh graders was striking. As seniors, these teenagers reported less drinking during the previous year and fewer times when they were drunk compared to the teenagers who participated in the control condition and reported alcohol use in seventh grade. Importantly, the Bridges/Puentes participants were 2.5 times less likely to meet the criteria for alcohol use disorder, which can be a precursor to lifelong substance abuse disorders.

“The Bridges/Puentes program had a developmental snowball effect on the participants and was protective against alcohol abuse five years later,” Gonzales said.

The reduction in alcohol use in seniors who started experimenting early is important because even small reductions in adolescent drinking and rates of alcohol use disorder can have a cascade effect on other public health problems like alcoholism and substance abuse disorders, risky sexual behavior and other health problems.

The Bridges/Puentes program was geared towards middle schools with a high Mexican-American enrollment, but the program is a universal evidence-
based intervention. Any family at the school was allowed to participate, and the researchers found protective effects for all participants.

“We found many effects from this universal intervention,” Gonzales said. “This study reports alcohol use, but we found positive effects on grades, behavior at school, rates of high school graduation and family conflict.”

**Scaling the Bridges/Puentes program**

With funding from the National Institute on Drug Abuse, the ASU researchers are now working to streamline the Bridges/Puentes program down from 9 sessions with the goal of scaling it for use in middle schools throughout the country.

“Middle school is an optimal time for families, schools and teenagers to come together around a common goal of promoting student success,” Gonzales said, “and in the process, they will reduce problems like drug abuse.”

At ASU, Jenn-Yun Tien, research professor of psychology, Larry Dumka, associate professor with the Sanford School, and Ann Mauricio, assistant research professor of psychology, also contributed to the study.

---

**Nancy Gonzales**  
ASU Foundation Professor and Associate Dean of Faculty, College of Liberal Arts and Sciences

Nancy Gonzales is recognized for her ability to explore and explain when, how and why some students are more successful in their educational endeavors than others, and what society might do to help. In tandem with large teams of undergraduate and graduate students, postdoctoral scholars and research scientists, Gonzales’ work views culture in a broad and multi-dimension fashion.

Her research examines culturally informed models of family and youth resilience in low-income communities and has contributed important insights into the cultural strengths, challenges, and positive development of Mexican Americans living in the Southwest. Gonzales’ research is complemented by a scholarly record filled with external funding — including highly prized National Institutes of Health and National Science Foundation support — and a long list of publications during her 20-year professional career.
Entrepreneurs see the world in a different light, capitalizing on opportunity and balancing incredible risk with the chance of a massive reward.

Ryan Stoll, a doctoral candidate in clinical psychology in Arizona State University’s Department of Psychology, is no different as an entrepreneur. His reward is much greater than just money, though: he aims to forever change lives through better education.

Stoll is the co-creator and founder of the COMPASS for Courage project and is a student in the Courage Lab, which is led by Armando Pina, associate professor of psychology.

COMPASS for Courage is a social and emotional learning curriculum for elementary schools targeted to students struggling with anxiety or stress. The curriculum teaches students practical strategies to manage worries, build problem-solving skills, increase self-confidence and improve relationship-building skills.

“As I was progressing through the psychology PhD program, I realized ways I could leverage my skills and experiences to help overcome some pretty significant challenges,” Stoll said. “Collectively, psychology has hundreds of evidence-based programs that can help improve the well-being of children, adolescents, families and communities. One of the main challenges we psychologists face is how to offer these programs to the people who can benefit the most in ways that are feasible, sustainable and scalable.”
Stoll has been involved his entire life in creative endeavors, from designing logos, to wedding photography, videos and graphic design. The new challenge of delivering evidence-based programs to the community required the kind of creativity not often associated with academia but with the start-up world. The answer became very clear to Stoll: bring the start-up world to mental health intervention and education.

“There are many similarities between mental health intervention science and start-ups: we are creating new solutions to existing problems with limited funds, resources and time,” Stoll said.

“We can learn a lot from how successful start-ups operate, create products and scale them to millions of customers in a relatively short amount of time — typically on minimal budgets.”

Like many innovators, Stoll does it all: product design and development, market research, program evaluation and marketing. His nontraditional educational background — he started out as a photography major and worked at UPS in management — helped build a broad skill set and platform to launch his ideas, and all he needed was a spark.

That spark came in the form of winning the ASU Changemaker challenge and both the Edson Student Entrepreneur Initiative and the Pakis Social Entrepreneurship Challenge at ASU’s Demo Day. These ASU-funded contests provided both the validation and resources needed to make his vision come to life.

“My experiences with Demo Day and all the resources ASU has to offer for student entrepreneurs has really solidified the direction COMPASS is going and where I want to take my career,” Stoll said.

Stoll found that pursuing a nontraditional route during graduate school was welcomed at ASU. He had complete support from his graduate mentors, the clinical psychology faculty and the psychology department while working on COMPASS for Courage.

“I’ve also been fortunate to be supported by grants and fellowships that have enabled me to pursue this route,” Stoll added. “At the same time, I’ve been sharpening my research skills and applying the knowledge I’ve learned from my entrepreneurial journey to the work we are doing in the department.”

For Stoll, being an entrepreneur is more of a mindset change than anything else.

“Being an entrepreneur is about being adaptable and collaborative, being willing to go right when everyone else is going left, seeing problems as opportunities for change and seeing solutions to problems as one way, not the only way,” he said. “It’s actually very similar to my role as a scientist — just with different tools and approaches.”
Left: Colleen Sullivan (Finalist)
“The Multidimensional Nature of Social Support in Contributing to Adjustment Following Spousal Loss”
Watch Colleen talk about her thesis

Above: Justin Palmer (Winner)
“An Evaluation of the Cognitive Effects of a Short Term and a Long Term Ovarian Hormone Deprivation in a Transgenic Mouse Model of Alzheimer’s Disease: Addressing the Critical Window”
Watch Justin talk about his thesis

Above: Anaelle Ganese (Finalist)
“Understanding Emotion Dynamics and Observed Cooperation and Conflict in the Sibling Relationship”
Watch Anaelle talk about her thesis
Each semester, the College of Liberal Arts and Sciences at Arizona State University recognizes one student per department as a Dean’s Medalist. The award is based on academic performance but also for being a great example of what you can accomplish when you find your true passion and go all in. Ariana Ruof, a senior in the Department of Psychology, received the prestigious honor for the fall 2017 semester.

Ruof graduated with both a bachelor’s of science in psychology, and a bachelor’s of science in family and human development and she worked in two research labs, the Arizona Twin Project and the Social Addictions Impulse Lab (SAIL lab).

As the lab manager of the SAIL lab, Ruof studied impaired control as it related to alcohol use in college students and members of the community. The goal of her research project was to better understand impulsivity, stress and other behaviors related to alcohol use.

While in the ASU Department of Psychology, Ruof has earned many other awards, including the New American University President’s Scholarship and the Zita M. Johnson Child Study Scholarship. On top of that, she founded the Psychology Engagement Team and helped create Mental Health Awareness Week at ASU, for which she received a Cooley Leadership and Service grant.

“Ariana demonstrates natural leadership skills and a sense of service. She can organize a small army of people to mobilize toward a common goal in a short period of time. Ariana Ruof is truly an exemplary student overall and truly worthy of the Dean's Medal,” said the nomination committee from the Department of Psychology.

All of her success has not gone to her head, thanks in part to her family. When Ruof left for ASU, her parents made the choice to help improve the lives of children who were less fortunate and became foster parents.

“Along with my research experience, interacting with foster children led me to be interested in the genetic and environmental influences of child development and family processes,” Ruof said.

Like her many awards, Ruof had many choices for college. She applied widely, to Stanford University, Harvard University, San Diego State University, and the University of California at San Diego but chose ASU for proximity to family and undergraduate opportunities in research.

“In the Barrett Honors College, I received a high-level education similar to what I would have had at an Ivy League school, but I was able to save a lot of money.”
Question: What was your “aha” moment, when you realized you wanted to study the field you majored in?

Answer: I don’t feel like I had a single “aha” moment that led me to my field of interest; however, there were some key moments. In high school, I had always thought I wanted to be a teacher but I also had a deep interest in science, specifically when it came to learning about the brain. My mother was the one who encouraged me to look into psychology. Working with the Boys & Girls Clubs also made me realize I was particularly interested in child development and family processes, which led me to focus on Developmental Psychology and Family and Human Development.

Q: What’s something you learned while at ASU — in the classroom or otherwise — that surprised you, that changed your perspective?

A: During the summer before my junior year, I decided to study abroad with Barrett, The Honors College in Italy for three weeks. This trip was the first time I had ever been out of the country and the first time I took a trip by myself, as I did not know any of the other students. This experience taught me a lot about other people, other cultures and my own identity. The classes I was taking and being in a foreign country were both experiences unlike anything else I had done as an undergraduate.

Q: What are your plans after graduation?

A: Before my PhD program starts in the fall, I will be working in the Social Addiction Impulse Lab (SAIL) and Arizona Twin Project (ATP). Both labs have given me part-time jobs. In SAIL, I will continue to be lab manager and in ATP I will be the iMotions coordinator and will run a coding team. In the fall, I will be starting a PhD program in Family and Human Development here at ASU with Kit Elam on projects related to genetics, child self-regulation and family processes.

Q: If someone gave you $40 million to solve one problem on our planet, what would you tackle?

A: This question is really tough because there are two things I am really passionate about. The first is eliminating the stigma surrounding mental health and giving better, more local access to more specialized mental health resources for people. I spent a lot of time as an undergraduate working towards this effort with my club, the Psychology Engagement Team. As a junior, I had spearheaded a Mental Health Awareness Week and brought the ASU Tempe campus and the Tempe community together to raise awareness for resources for various mental health disorders, such as anxiety and depression. I would probably use the money to continue efforts such as this that aim to reduce the stigma surrounding mental health.

My other passion is making sure children understand the importance of higher education and that even though they may come from an underprivileged background, they can still get a higher education to improve their lives. As a sophomore and a junior, I worked with a student organization called SPARKS and we traveled all over Arizona and southern California speaking to K-12 students at low-income schools and at Boys & Girls Clubs about how they have opportunities to gain higher education. I would also use the money to promote efforts to give educational access and opportunities to these students.
When she graduates in a few weeks, Catie Carson will have accomplished more in her four years at Arizona State University than most students across the nation. She will graduate with a double major in psychology and justice studies, and with a Human Rights certificate and minor in mandarin Chinese. Carson was named the spring 2018 Dean’s Medalist for the ASU Department of Psychology.

Carson is also a Fulbright recipient and will teach English next year in Taiwan. While working in the Memory and Attention Lab with Heather Bimonte-Nelson, professor of psychology, Carson was an author on two peer-reviewed publications, published in volume 64 of the Neurobiology of Aging and in volume 87 of Hormones and Behavior. She also completed an honors thesis with Delia Saenz, associate professor in the Center for the Study of Religion and Conflict, on the psychological disadvantages that Native American students face from being such a small minority. Additionally, she studied discrimination and societal issues in the Evolutionary Social Psychology Lab with Steven Neuberg, foundation professor and chair of the Department of Psychology.

“From the time that Catie started working in our laboratory as a high school student, it was clear she had far-reaching potential. Catie is a naturally deep and methodical critical thinker, and she has an uncanny ability to assimilate material across difficult theoretical concepts. She thinks with breadth and depth,” said Bimonte-Nelson. “These are rare skill sets and gifts for such a young scholar. No matter what her path, I have no doubt that Catie will accomplish anything she decides to do.” Carson is also the Barrett Honors College Outstanding Student of the Year, an award given annually to the highest-achieving undergraduate in Barrett, the Honors College.

“There are so many deserving students in the Barrett Honors College, and I’m sure any of them could have won,” Carson said. “I am grateful that my interests were recognized.”

Carson had an international upbringing: she lived in Arizona until her father’s job moved her family to China for three years. Carson credits living in China with giving her a board perspective about how people live and inspiring her to want to make a difference everywhere she goes.

“Catie is the kind of student who makes your heart leap with enthusiasm. She is very smart, intellectually thoughtful, curious, eager to learn and willing to challenge conventional ideas, all the while being authentically kind, caring and driven in a calmly intense way to make the world a better place,” said Steven Neuberg, foundation professor and chair of the Department of Psychology.
Carson chose to attend ASU because it afforded her the opportunity to earn a liberal arts education at a nationally recognized university and to conduct research with faculty that supported her passion of serving others. One of her primary interests outside of class is the Gammage Scholars group. The group consists of 16 Grady and Kathryn Gammage scholarship recipients who work on a variety of service projects such as renovating an elderly care facility, mentoring kids at local elementary schools and hosting a prom for veterans. The scholars group honors the legacy of the former president of Arizona State University who pledged intellectual vision and a commitment to the well-being of the broader community.

In addition, Carson is a community assistant at Vista del Sol, a residential housing complex on campus for students of Barrett, the Honors College, works as a tutor off campus and leads a campus ministry group. She also interns with AmeriCorps at ASU’s School of Social Work, where she works specifically on domestic violence, and interned over the summer with a nonprofit that focuses on autism in Tajikistan.

“It’s been an incredible pleasure to have her working in my lab and as a student in my class,” Neuberg said. “I can’t wait to see what she does in the next phase of her life… and beyond!”

Watch her story here!

Captions: Top, Steve Neuberg and Catie Carson; Middle: Catie Carson in front of Psychology North
When Thomas Dishion began his career in psychology in the 1980s, “intervention was a pipe dream.”

“We didn’t really know if you could systemically prevent negative outcomes [in people’s lives and well-being] later down the road,” he said.

Today, the Arizona State University professor is sure of it. After three-plus decades, nearly $100 million in research funding and more than 300 published papers on child and family intervention science, Dishion is a bona fide pioneer in the field. For his contributions to the understanding of child development and psychopathology, and how clinical psychology is conducted across the world, Dishion was recently named an ASU Regents’ Professor.

Thomas Dishion
“It is a great honor,” he said. “All the work I do is on a team and I’m grateful for the colleagues that I’ve had and for the support of ASU.”

He was convinced there was a science behind it and wanted to figure out how it could be used to improve the human condition.

He continued to conduct research and teach at the University of Oregon until 2011 when the lure of opportunity brought him to the Valley of the Sun.

“ASU is a major innovator and the department of psychology had a strong emphasis and positive track record in prevention science,” Dishion said. “I also like the philosophy of the New American University. I
do a lot of my work in community settings and I think universities need to be more actively involved in the community. ASU’s mission regarding social embeddedness fits well with my philosophy."

At ASU, Dishion founded the REACH Institute (Research and Education Advancing Children’s Health), a research unit within the Department of Psychology dedicated to bridging the gap between university-based research and real-world practice.

“We’re taking evidence-based practices that have shown to be effective in rigorous studies and putting them in the hands of clinicians,” he said, something that is woefully needed in the field.

“You can go to a psychologist and it’s relatively unlikely that they will be using evidence-based practices when trying to support you in overcoming your issues. Some research shows only five percent of clinicians use evidence-based practices.”

Currently, researchers at REACH are looking into effective interventions for families and students who have recently emigrated from Mexico to the U.S., to help them be successful in secondary school. Another project looks at the effectiveness of incorporating the Family Check-Up, one of the institute’s most widely disseminated programs, with the federally-funded Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

The Family Check-Up provides parent management training, teaching them positive-behavior support, healthy limit-setting and relationship-building.

Dishion also has made distinctive contributions to do with adolescent aggression in peer groups. When a type of therapy meant to reduce aggression was shown to actually increase it, Dishion wanted to know why. He found that some friendships are organized around violence, where adolescents connect by talking about hurting other people, and that talk can escalate to real violence.

Dishion called the phenomenon “coercive joining.” It uses such tactics such as fear mongering, name-calling, bullying and emotional manipulation to force others into complying with certain behaviors.

His findings related to coercive joining are especially relevant nowadays, he said, because “there is so much influence of rhetoric, and a lot of the population is beginning to talk about other groups in negative ways. That’s really socially significant and important, and we need leadership to not engage in that kind of rhetoric because it grows to violence.”

Designing an intervention for coercive joining is on Dishion’s agenda. He hopes to find peaceful ways of reducing the formation of violent groups that everyone can use.
Think of someone you trust. What is it about them that makes them trustworthy?

In general, religious people are more trusted than people who are not religious, and researchers in the Department of Psychology at Arizona State University have found explanations for why that is.

Psychology graduate students Jordan Moon and Jaimie Krems, along with psychology Professor Adam Cohen, found that the trust of religious people is not based on their beliefs but on how they live their lives. Their findings have been published in the March 28 issue of Psychological Science.

“People trust the religious more, but not for the reasons they might think,” Krems said.

The study examined the reasons why religious people are more trusted than non-religious people. The researchers thought that the trust of religious people might actually be driven by how religious people behaved, not by what they believed.

“We thought religion might serve as a cue to a specific set of behaviors that make a person trustworthy,” Moon said.

The specific set of behaviors comes from an evolutionary biology theory called life history theory. This theory can explain many human behaviors based on individual life experiences. Life history theory includes two main groups of behaviors called strategies. A “fast” life history strategy is used in an unpredictable environment and includes behaviors such as early and frequent mating, aggression and risk-taking. A “slow” life history strategy is used in a stable environment and includes behaviors such as fewer sexual partners, greater parental involvement and investment in education, and less aggression and risk-taking.
The researchers conducted three experiments. The first experiment used fictitious dating profiles that stated whether the person was religious or non-religious. The dating profiles also gave information about the person’s education and dating preferences, such as if they were interested in a committed relationship or casual encounters. Participants rated how much they trusted the person described in the dating profiles.

“Overall, the participants trusted the religious people more,” Moon said, “but we found that the trust ratings were driven by reproductive strategy, such as whether the people in the dating profiles were interested in a committed relationship or still wanted to play the field.”

The second experiment also used fictitious dating profiles, but this time all the people in the profiles were described as religious. Some of the people in the profiles had slow life history behaviors, and the others had fast life history behaviors. Participants in the experiment again rated how much they trusted the person in the fictitious dating profile. The researchers found that in this context, trust was again driven by behavior.

“This experiment explicitly manipulated the life history strategy, or behaviors, of religious people,” Krems said. “We found that religious people who were promiscuous were less trusted than religious people who expressed interest in a committed relationship.”

The final experiment examined what happened to trust ratings in a professional context instead of a dating profile. The researchers devised fictitious business-oriented social media profiles that specified if the person was a Christian who attended church regularly, was a Muslim who attended mosque regularly or was non-religious. Participant ratings showed that both Christians and Muslims were trusted more than the non-religious professionals.

“People are less interested in the specific beliefs of another person,” Moon said. “They want to know how that person is going to behave, and religion suggests what kind of person they might be.”

The researchers believe that the findings from this study could suggest ways to counteract the distrust of non-religious people, which are a growing segment of the American population.

“The psychology of religion focuses on why people believe what they believe and the effect on their lives,” Cohen said. “We think it is just as important to examine how religious people act and how that affects their lives.”

The research that brought Cohen to ASU was his work showing that religions, like cultures, contain meaningful differences. While some might worry that demonstrating religious differences might make it harder for us to get along, more recent work shows that people trust members of other religions as much as they do members of their own, and that greater religiosity promotes trust - even on the part of outgroup members.
When you meet Maryglory Moshi, a junior in the Department of Psychology at Arizona State University, you first notice a giant smile and an eagerness to help. Moshi is a self-described “people person,” who has made it her mission to help fellow students achieve their goals. She provides support in the psychology department’s advising office and is involved in the psychology advising leaders (PALs) program as a teaching assistant and student instructor. She holds weekly office hours to help students choose courses, plan career goals and set up internships. Additionally, Moshi guides incoming students and their families through new student orientation, helping them assimilate into their new home.

“Maryglory has such a positive outlook on life and really motivated our students to succeed. She brings a unique viewpoint to ASU and has been a significant leader in the Department of Psychology,” said Amy Sannes, the associate director of academic services in the Department of Psychology.

Moshi has a deep understanding of how the transition to university can be difficult; she is an international student from Tanzania working toward a double major in psychology and business data analytics. She said her days are consistently full but also engaging and challenging in ways that help her grow.

“I came to ASU after two years in an international high school in Tanzania. I was attracted to the campus because the environment was similar to home and the entrepreneurial atmosphere really allowed me to see a life in a different mindset,” Moshi said.
“ASU provided me with the support system and the structure to ask questions,” Moshi added, “and the university has really helped me to understand American culture.”

Her passion for psychology began when she was enrolled in an International Baccalaureate psychology class. She began to wonder how the brain worked and how society and culture influenced how people make decisions. After the class, Moshi was hooked. She decided to study psychology in college.

After ASU, Moshi wants to combine high fashion and consumer psychology in the future. She believes her education in big data and social behavior will be the tools she needs to get there.

“I like to push the envelope in both fashion and at school. If I see something new or interesting, I like to try it,” Moshi said. “People tend to be scared of going outside of their comfort zone, but I think that is where truly special discoveries happen.”

Question: What was your “aha” moment, when you realized you wanted to study the field you majored in?

Answer: When I was studying in Tanzania in grades 8 to 10, it was at a very traditional Tanzanian school. In grades 11 and 12, I transferred to the international school where psychology was introduced to me. That was my coming out party where I maximized every second of learning and truly found what I was interested in.

I dug into my own background and saw how specific events had an impact on my life, and studying psychology brought to light how we mask things. Now, I ask: why, why are you doing that? Or I ask: why are people acting the way that they do?

Q: What’s something you learned while at ASU — in the classroom or otherwise — that surprised you, that changed your perspective?

A: Since coming to ASU, I’ve lived the mentality of “I can do that!” and have taken on as many challenges as I can. I have traveled to 15 states, have gotten involved in fashion, studied in two majors, served as a teaching assistant and instructor with the PAL program.

Q: If someone gave you $40 million to solve one problem on our planet, what would you tackle?

A: The first thing I would do is take the money back to my country and help facilitate the field of psychology back home. Mental health is not given the attention it should be back home and part of that is from a lack of awareness. In the African context, people aren’t aware and instead attribute their mental health issues to religion or superstition. They also lack an awareness of the solutions that could be available to them.

As a result of studying psychology and focusing on personal reflection, I know that I mask lots of things. I would love to use those funds to help people who don’t understand what they are currently experiencing.
When you have free time in your schedule, what do you do? You might enjoy Arizona’s outdoor activities like hiking beautiful terrain, or when it is too hot outside, you might just find yourself reading a favorite book while enjoying the air conditioning.

Reyna Rivera, a 2017 Arizona State University alumna, sees life differently. “To decompress and relax, I spend time serving my community through volunteer work,” said Rivera, who graduated with the master’s degree in Applied Behavior Analysis (ABA) that is offered through ASU’s Department of Psychology on the Tempe campus. “It seems like a strange answer, but volunteering really helps me refocus my energy back onto my goal of helping other people. I guess I am just passionate about helping future generations.”

Students enrolled in ASU’s ABA master’s degree program graduate as Board Certified Behavior Analysts.

“Reyna and the other MS ABA program graduates represent the future of the science and practice of behavior analysis. In service of that, we wanted to develop a program of high rigor, nurturing scientific inquiry concerning socially-significant behavior,” said Adam Hahs, director of the ABA master’s degree program.

“Graduates of the MS ABA program have a BACB exam pass rate that is about 20 percent higher than the 2017 average pass rate, making them extremely competitive as they seek job placements,” Hahs said. “Dr. Don Stenhoff and I are really excited about the work we’re doing in and for the Department of Psychology at ASU. It’s a great place to be.”
What sets ASU’s program apart is the over 1,500 supervised practicum hours that are required for state licensing are already built into the intensive curriculum. Rivera credits the program for translating her passion for helping people into action.

Rivera is a licensed and board-certified behavioral analyst whose expertise includes autism spectrum disorder and children with behavioral issues. She works both in homes and in clinics.

Rivera also regularly speaks to local high school classes about autism and the benefits of Applied Behavior Analysis services. Rivera has organized back-to-school backpack drives for children in Title 1 schools, collected hygiene products for homeless students and their families, and she volunteers with her church by preparing hot meals over the holidays.

As an undergraduate student at ASU, Rivera maximized her experience, graduating with a bachelor’s in psychology in just two-and-a-half years. While working toward her degree, she was heavily involved with the Leadership Scholarship Program and served as the vice president of Children’s Hope at ASU’s West campus.

“I was drawn to psychology and ABA because I wanted to make an impact on the lives of others. I knew psychology would open the necessary doors in order for me to accomplish this goal,” Rivera said. “Being an ASU alumna means that I have a family for the rest of my life. I have a support group and a network. Although I have graduated I still always feel like an ASU Sun Devil!”

In the future, Rivera wants to introduce ABA to as many families as possible in the valley, particularly in the Hispanic and Latino communities.

“Unfortunately, many Hispanic and Latino families who have children with autism are not receiving adequate services in their native language,” she said. “I want to deliver quality ABA services to these families and recruit bilingual students to become service providers and future behavior analysts.”
Adolescence is a time when biological changes in the body happen faster than psychological changes, a mismatch that creates challenges for teenagers that can lead to problem behaviors, depression or even substance abuse.

Healthy relationships support teenagers as they mature into adults, and many scientists study the relationships teens have with their parents and friends. But though teenagers spend a lot of time thinking about, talking about and being in romantic relationships, few researchers study adolescent romantic relationships. Thao Ha, a new assistant professor in the Department of Psychology at Arizona State University, is one of the few.

"We learn as developmental psychologists that early romantic relationships carry forward into later, more committed relationships such as marriage, but this idea is just starting to be tested," Ha said. "What if the social and emotional skills necessary for happy and healthy relationships later in life are actually learned in these adolescent relationships?"

Ha studies how experiences in adolescent romantic relationships like conflict and breakups influence mental health, behaviors that promote physical health and engagement in school.

Ha leads the @HEART lab and uses techniques from developmental psychology, social psychology and cognitive neuroscience with the goal of collecting subjective and objective measures about the quality of the romantic relationship. The use of multidisciplinary methods is important, because almost all teenagers who complete surveys about their romantic relationships report being really happy, even though they might not actually be in a healthy relationship. The @HEART lab researchers observe and videotape couples as they work through a conflict, deliver surveys over a long timeframe to couples, measure levels of stress hormones in saliva
and measure electrical activity in the brains of couples.

“The most difficult part about this research is keeping up with the teenagers,” Ha said. “Recruiting is challenging because by the time participants are enrolled and scheduled for a study, they might have already broken up!”

In the lab, participating couples might argue or have conversations about jealousy while the researchers videotape the session. The researchers then use the video to identify what emotions each participant displayed, based on their facial expressions, posture and tone of voice, what they talked about, and whether they were supportive to each other.

Ha also sends participants text messages with short survey questions such as: How do you feel today? How jealous are you today? How much love do you feel today? What was the most stressful event today?

“These momentary assessments give us insight into how the relationship functions in real life,” Ha said.

Participants receive the text message survey questions about twice a week for three months. The response rate is high, even after participants are no longer in the romantic relationship. Once teenagers begin a study, Ha said they are very committed participants.

Ha’s research is basic science, but community outreach is also an important part of her work. She recently spoke at the ASU Hispanic Mother-Daughter Program, where she told the mothers, fathers, and teenagers in the audience about the significance of adolescent relationships relative to mental health and school performance and the importance of keeping lines of communication open.

Next year, Ha will collaborate with the Tucson Unified School District to study how teenagers navigate relationships in general, not just romantic relationships, and whether those with healthier relationships perform better in school.

The idea of ASU as the New American University resonates with Ha, who is the oldest child of Vietnamese refugees to the Netherlands and a first-generation college student. When she started college, Ha had no idea what academia was, and a career in science seemed beyond her reach. She credits her mentors at Radboud University Nijmegen in the Netherlands, who supported her and helped her navigate graduate school. Ha earned two master’s degrees in developmental psychology and her doctorate from the university before coming to ASU as a postdoctoral researcher in 2013. Ha first worked in the T. Denny School of Family and Social Dynamics and the Institute for Interdisciplinary Salivary Bioscience Research before joining the Department of Psychology in fall 2017.
In a famous social experiment a decade ago, a world-renowned violinist stood against a wall in a Washington, D.C., subway station and expertly played one of the most difficult pieces of music in history on a violin worth more than $3 million. Of the more than 1,000 people who walked by violinist Joshua Bell as he played that morning, only seven stopped to listen.

Why were people unable to recognize they were hearing world-famous music?

One answer is: context matters. A few days before he stood in the subway station, Bell played to a full theater in Boston, where the cheapest tickets were $100.

In a theater, people expect to see a world-famous violinist and hear excellent music. In a subway station, they do not expect Joshua Bell to be playing Johann Sebastian Bach’s “Chaconne” on his one-of-a-kind Stradivari violin.

Researchers in the Arizona State University Department of Psychology, along with collaborators from the University of Connecticut and the University of Arkansas, measured what was happening in the brain during a version of the Joshua Bell experiment. The findings from their study were published in the April 18 issue of Scientific Reports.

“We wanted to test whether having contextual information about a musical performance affected what people thought about the music,” said Göekhan Aydogan, a postdoctoral researcher in ASU’s Decision Neuroscience Lab, “And we wanted to see how the brain handled this information which was not directly related to the quality of the musical performance.”

In the experiment, participants listened to pieces of music that were just over a minute long while the researchers used functional magnetic resonance imaging (MRI) to measure brain activity. Before the music sounded, the researchers either told participants it was played by a student or a professional musician. This information gave the participants context about the music they were about to hear.

“Standard economic theory assumes that people are rational, and the contextual information need not be considered when deciding on the quality of the music,” Aydogan said.

The researchers found that participants perceived the music differently. They rated pieces they thought were played by professionals higher than those played by students. The researchers found differences in brain activity that depended on who played the music.
“We found an attentional bias effect,” Aydogan said. “Measures of neural activity were higher in the auditory cortex for the entire time people were listening to music reportedly played by a professional.”

Half of the time, when the participants thought they were listening to music played by a professional, it was actually a student. This mismatch allowed the researchers to study how people were able to change their opinions about the music.

They found that an important part of the executive control network, the dorsolateral prefrontal cortex, played a central role in overcoming the initial bias people had from the information about who was playing the music.

“We found that people were biased based on the sensory input they received — the music they heard — and based on the activity we measured in the prefrontal regions, it appears that this bias was reduced when participants engaged in deliberative thinking,” said Srekar Nagishetty Ravi, a senior in the School of Biological and Health Systems Engineering who worked as a research assistant in the Decision Neuroscience Lab.

The researchers found that the strength of the connections between the prefrontal regions and other brain regions indicated how biased people were. Participants with weaker connections to the executive control network were more susceptible to context, or the information about whether a student or professional played the music, when assessing the quality of the music.

“There is very little research on what makes art or music beautiful,” said Samuel McClure, associate professor of psychology and head of the Decision Neuroscience Lab. “There are theories that suggest what artists do is discover by chance the principles of how our brains represent visual scenes or sound, and science has yet to define these principles.”

ASU researchers are now working to test such theories.

McClure recently joined an interdisciplinary group of ASU professors, lecturers and students who are all interested in the science of music perception. The researchers named themselves “The Science of Art, Music and Brain Activity” or SAMBA for short. They meet once a week at 3:14, in honor of pi, and are planning a series of neuroimaging experiments to map how people perceive music.

The idea for the SAMBA group came from Jeffrey Atchison, a post-baccalaureate student working toward a degree in psychology. Atchison’s first degree, also from ASU, is in music. He worked as a music educator in the Phoenix area before deciding to return to ASU.

“The more I taught, the more I had questions about how students processed music and interacted with musical concepts,” Atchison said. “I decided I had to try and understand the biological and neural mechanisms underlying how we perceive music.”

Atchison recruited his former mentor Joshua Gardner, clinical associate professor of music, to join him in the study of music perception.

“Music has been around for a very long time — some flutes date to 40,000 years ago — and is everywhere,” Gardner said. “The experiments we are planning will help us understand the cognitive processes that occur when we experience music as listeners or performers, which is interesting from a curiosity and pedagogical standpoint.”

Atchison also met with Michael McBeath, professor of psychology, and McBeath publicized and promoted the group. Additional members of the interdisciplinary SAMBA group include Xin Luo, assistant professor of speech and hearing development; Vaughn Becker, associate professor in the School for the Future of Innovation in Society; Jakob Patten, lecturer in psychology, and Seth Gory, an ASU music student.
According to the Centers for Disease Control and Prevention, tobacco use is still one of the top preventable causes of death in the United States, and the research of one Arizona State University undergraduate seeks to reduce that threat.

Gabriella Cabrera-Brown, a senior in the ASU Department of Psychology and honors student through the Barrett, The Honors College, was a winner of the 2018 Student E-poster Competition at the annual meeting of the American Association for the Advancement of Science (AAAS) in Austin, Texas. Cabrera-Brown presented a poster titled "Abrupt nicotine reduction increases the essential value of nicotine and exacerbates reinstated nicotine seeking." Her poster stood out among numerous entries from universities across the country, and she won the Brain and Behavior category.

"I felt prepared, which was a good thing because I had seven judges on my panel," Cabrera-Brown said. "I communicated the importance of nicotine regulation and the global impact it can have.”

Cabrera-Brown’s name and poster title will be printed in Science magazine, and she will receive a recognition certificate and year-long subscription to the journal.

Cabrera-Brown works in the Neurobiology and Behavior Addiction Lab with Cassandra Gipson-Reichardt, assistant professor of psychology. With Gipson-Reichardt, Cabrera-Brown studies nicotine addiction and what happens when the amount of available nicotine is reduced dramatically.

On March 15, the Food and Drug Administration (FDA) mandated that the amount of nicotine in tobacco products be drastically reduced, to near zero levels. The goal of this mandate is to improve smoking quit rates by reducing the nicotine content in cigarettes, which would presumably make them less addictive for both adults trying to quit as well as young people experimenting with cigarettes.

Reducing nicotine levels might seem like a positive step toward combating smoking addiction; however, Cabrera-Brown is studying the effects of reducing nicotine levels on relapse vulnerability in Gipson-Reichardt’s lab. Importantly, abruptly reducing nicotine levels to near zero, as opposed to a more gradual reduction, may impact successful nicotine use cessation.
outcomes. The researchers want to know if an abrupt introduction of less available nicotine in tobacco products translates to lower rates of addiction, which is the goal of the FDA mandate, or if less available nicotine could actually reinforce addictive behaviors.

To answer these important questions, Cabrera-Brown used a mathematical model from behavioral economics to show that reducing the potency of nicotine actually increased the demand for it.

“We found that if you reduce the dose of nicotine, you make it much more likely that the individuals will relapse in the future,” Cabrera-Brown said. “Less nicotine increased relapse vulnerability.”

Cabrera-Brown measured the vulnerability to relapse in individuals when they consumed nicotine at high doses compared to when they consumed nicotine at lower doses. She also looked at how much the individuals valued nicotine at the high and low doses and if that affected whether or not they relapsed.

“We found that individuals consuming a lower dose of nicotine relapsed at a much higher rate. If you abruptly reduce nicotine levels for current smokers, they could have worse outcomes when trying to quit,” Cabrera-Brown said.
Arizona State University’s Danielle McNamara was named an American Educational Research Association (AERA) Fellow for 2018. McNamara is a professor in the Department of Psychology and with the Institute for the Science of Teaching and Learning.

Since 1916, the interdisciplinary AERA has promoted the scientific study of education and learning. AERA fellows are recognized as having given longstanding contributions to the field.

“Many of the students in my high school did not finish, and that always stayed with me,” she said.

McNamara holds an undergraduate degree in linguistics, a master’s degree in clinical psychology, a doctorate in cognitive psychology and worked as an English teacher in France for five years after college. McNamara credits the James S. McDonnell foundation with starting and solidifying her career in educational research. She received two grants from the foundation to apply cognitive psychology principles to education.

“Being funded by the McDonnell foundation was an excellent opportunity for me,” McNamara said. “For six years after my doctorate, I was surrounded by researchers who were applying cognitive principles to educational practice, which effectively prepared me to conduct educational research.”

Now, McNamara leads the Science of Learning and Educational Technology (SoLET) lab at ASU. The core motivation behind McNamara’s
research is changing behavior to improve education. The SoLET lab studies what features of an educational text make it challenging or accessible to students. Based on the findings from experiments in the lab, McNamara creates practical tools for use in the classroom. The tools are accessible on the internet and are free to use. The SoLET educational tools interweave linguistics, understanding languages and interpersonal interactions.

“I am not just a linguist, computer scientist, psychologist, or educational researcher,” McNamara said. “I have to be all of those things at the same time because my research combines all of those scientific disciplines.”

The educational tools McNamara has developed are widely used and are geared towards students from elementary school up until the first two years of college. The Coh-Metrix Common Core Text Readability Assessor gives teachers additional information about text difficulty, which can help them choose appropriate reading material for their students. The SoLET lab also developed iSTART, a game-based tutoring system for older students, and Writing Pal, an interactive game for high school students to improve their writing skills.

McNamara was nominated to be an AERA fellow by Gale Sinatra, professor of psychology and education at the University of Southern California.

“Danielle’s goal is to improve educational opportunities for students who would otherwise struggle,” Sinatra said. “And she has made important theoretical and practical contributions about what makes certain kinds of texts challenging for readers.”

McNamara moved to ASU in 2011, joining researchers from many disciplines who conduct educational research.
Making a difference is a shared goal among Arizona State University graduates. Many choose to pursue careers in the private sector and donate their time on the side, while others work in the nonprofit sector or for the government.

In fact, millennials increasingly value the culture of a company and careers that change the world over just working to acquire money and possessions. In a Cone Communications report, 70 percent of respondents reported they would sacrifice pay to work in an environment that fosters caring about others and facilitates an attitude of social and environmental accountability.

ASU’s Department of Psychology graduates experience first-hand what it means to change the world they live in while earning their degree. From the research done at the Children’s Museum of Phoenix, to the Child Study Lab, to the intervention work performed through the REACH Institute, or the ongoing RISE mentorship program at Red Mountain High School, the research ongoing in the psychology department directly affects the community.

One ASU alumna has taken making a difference to a new venue: Jordan Hibbs, a 2014 graduate from psychology and Barrett, the Honor’s College, serves as a Presidential Management Fellow in Washington, D.C.

The Presidential Management Fellows program is a highly selective and prestigious two-year training and development program at a U.S. government agency for U.S. citizens with a recent graduate degree. At the conclusion of the program, the fellow might be placed in a federal agency as a permanent employee. Notable alumni from the program include Oregon’s sitting U.S. Senator Jeff Merkley.
Hibbs currently works as a management and program analyst for the United States Department of Energy. Her long-term goal is to stay within the department to help the general public through policy changes. She currently works with the Office of Energy Efficiency and Renewable Energy in their Building Technologies office. Her focus is on efficiency in commercial buildings and advancing energy-efficiency solutions and technologies to help U.S. businesses save energy, time and money.

"Understanding human behavior has always been an influence in everything I've done," Hibbs said. "It was the main reason I was passionate about psychology and it is a driving factor why I applied to the fellows program. The energy technology space has a lot to do with people, in more ways than many think."

While she was an undergraduate at ASU, Hibbs also worked with Gene Brewer, associate professor of psychology, as the manager of Brewer’s Memory and Attention Control Lab.

“I recruited Jordan to manage my laboratory and contribute to my research program because she is an incredibly hard-working and intelligent young woman with all of the potential in the world. In many ways, Jordan left my laboratory in better shape than she found it," Brewer said.

Hibbs said her success at placing data in context comes from her days working with Brewer. She credits the statistical training she received there for her ability to discern trends in information and problem solve for people.

“Human behavior should always be considered for every policy or decision. The psychology department at ASU taught me the importance of understanding what people really need to thrive,” Hibbs said.
New ASU psychology professor studies how we learn language

Most of us enjoy meeting a friend for a cup of coffee and a chat, but few of us pause to think about how we learn to have a conversation.

Viridiana Benitez, a new assistant professor in the Department of Psychology at Arizona State University, thinks a lot about how people learn language, and not just because she learned a second language as a young child.

Benitez joined ASU this year and heads the Learning and Development Lab, which uses language to study how young children learn in general. Participants in Benitez’s experiments range in age from six-months-old to early elementary school ages.

Benitez is currently testing how children learn pairings between words and objects. Benitez uses unfamiliar objects and made-up words.

The Learning and Development lab is currently collecting data from families in the community, through ASU's partnership with the Children's Museum of Phoenix. In the experiment at the museum, children aged 3–5 years look at a series of pictures that show two unfamiliar objects. At the same time the two objects appear on the screen, the children also hear two words. One of the words is always the name of a pictured object. For example, the word “modi” might always be paired with a red object, the word “blicket” with a green object, or the word “dax” with a yellow object. By asking a child to point to the “modi,” the researchers can track how children connect the words and objects.

There is only one novel word per unfamiliar object in the current experiment. Next, Benitez plans to test how children map words onto objects when the objects have more than one name. Objects having more than one name is similar to what a bilingual child experiences while learning what objects are called in different languages.
Growing up bilingual

Benitez was born and raised in Texas, and her first language is Spanish. Her parents grew up in rural farming communities in Mexico, and Benitez started her education in ESL classes outside of Houston.

“Many times, I felt like I wasn’t good at English because I was bilingual,” she said. “I thought it was a negative.”

By the third grade, Benitez had placed out of the ESL classes, but it would take many more years and a newfound love of psychology for her to understand the positive aspects of growing up bilingual.

During her junior year of high school, Benitez signed up for an elective course on the basics of sociology and psychology. It was a defining moment in her life.

“I remember that I thought, ‘I want to be a psychologist,’ because I wanted to understand how people think,” she said.

Benitez describes herself as an observant, quiet person who has always been interested in people, particularly why people do what they do. As a high schooler, she was surprised that there were actually careers in what she was interested in.

“At some point, someone said that to work in psychology, you have to get a PhD. I didn’t even know what that was, but I thought, ‘I’ll do a PhD,’” Benitez, who is a first-generation college student, said. “Someone else said, to do a PhD, you have to have research experience. So, I went and looked for a research opportunity in psychology.”

Benitez figured it all out, and she started by attending a community college near her home. Two years later she transferred as a junior to the University of Houston to study psychology.

Benitez started looking into research opportunities, which she knew were necessary for a doctorate, and met a new psychology faculty member who was studying how babies and young children learned language.

“I grew up speaking two languages, but I didn’t realize what it meant to be bilingual” Benitez said. “Then I started reading cool research about what it takes to learn two languages and that can tell us how powerful the brain can be. It blew my mind.”

Finally, a psychologist in training

Benitez worked in the lab of Hanako Yoshida, an associate professor of psychology at the University of Houston. Yoshida introduced Benitez to many different ways to study psychology. She encouraged Benitez to complete an honor’s thesis and to apply widely to doctoral programs in psychology. Benitez initially thought she would stay in Houston, or at least Texas. At the urging of her mentor, she applied to the Cognitive Development Lab at Indiana University, where Yoshida herself was also an alumna. At Indiana, Benitez felt an instant connection with Linda Smith, a professor of psychology who ran the Cognitive Development Lab.

So Benitez moved to Bloomington.

She was excited and scared to move away from home, and moving to the Midwest was a culture shock.

“Houston is one of the most diverse cities in the country,” Benitez said. “In Bloomington, it felt like a different planet. I had a hard time finding avocados and tortillas in the grocery store and had to figure out places where those things were sold.”

It was one of Benitez’s passions outside of the lab that soon helped Bloomington feel more like home. While out dancing one night, Benitez met another graduate student who was from Texas and who had a parent from Mexico. She and Edward Vargas were married just over three years later in San Antonio, before they both moved to the University of Wisconsin – Madison for postdoctoral studies. Vargas joined ASU at the same time as Benitez; he is an assistant professor in the School of Transborder Studies.
On the first floor of the Children’s Museum of Phoenix, an Arizona State University scientist from the Department of Psychology sits across a table from a 2-year-old child.

The child's father stands nearby. There are four boxes on the table: red, blue, green and white. One at a time, the boxes open and the child looks at what is inside. The green, white and blue boxes are empty, and the red box holds a ball. All the boxes close, and the psychologist asks the child where the ball is. The children’s answers often surprise both researchers and parents.

William Fabricius, associate professor of psychology, and his lab study how children think about what they know and what other people know.

“It is really interesting every time to see the parents’ reactions to what their kids know and don’t know,” said Quenten Benner, a junior who conducts research in the Fabricius lab as a student volunteer.

“No one has tested children of this age in these simple search tasks. We just assumed they knew,” Fabricius said. “We think they are imitating adults hiding the object, and that may be how they learn which visual cues to use in a search.”

This study sheds light on how children learn. It also suggests when the brain’s motion and visual systems start to work together. Fabricius said the study findings could be useful for robotics and artificial intelligence limb biomechanics.

Gonzales also ran a different version of the box experiment to test what children know about the thoughts of others. The psychologist held a doll that looked into each box at the same time as the child. After the boxes closed, the psychologist asked the child where the doll thinks the
ball is. Gonzales discovered when children are about 3 1/2 to 4 years old, they can answer correctly for themselves but not for the doll.

“For a long time, developmental psychologists thought that kids understood what they know at the same time as they understood what others know,” Gonzales said. “We showed that kids learn about themselves first, before they understand what others think.”

Gonzales, Fabricius and Anne Kupfer, who directs the Child Study Lab in the psychology department, recently published this finding in Child Development.

Partnership between research and education

Experiments with young children can be difficult to do on a college campus. Developmental psychology research groups like the Fabricius lab often conduct experiments off campus, out in the community. Christopher Gonzales, a graduate student in the psychology department, suggested to Fabricius that running experiments at the museum would be an easy way to reach study participants.

“He had to convince me that this would be a great place to test kids,” Fabricius said. “Two years and over 1,000 kids later, I have to admit he was absolutely right.”

When Gonzales first contacted the museum, he said he was met with open arms. He started running experiments on folding tables with an ASU psychology department banner. The museum has since adopted the educational model of the National Living Laboratory, an organization that works to increase public access to science by placing researchers in local museums. Funds from the Living Laboratory have provided a moveable exhibit that encourages interaction between ASU scientists and museum visitors.

“We engage with families and ask them if they want to help a scientist and learn about children with hands-on activities,” Gonzales said. “We can show them a demo, or they can participate in the scientific process.”

The presence of ASU psychologists in the museum benefits both scientists and the public. The scientists have participants that represent the community. The public learns firsthand what ASU researchers are studying. Fabricius and Gonzales said that over 1,000 families have chosen to participate in experiments so far, and they have explained their research to at least twice as many families.

Experiments at the museum also benefit scientists worldwide because the lab archives data with Databrary, a video library for research on development. When parents choose to participate in an experiment, they can also agree to allow the video recordings to be used by other scientists.

To date, the Fabricius lab experiments at the museum have contributed data for two undergraduate honor’s theses. Museum experiments have also provided undergraduate research opportunities to almost two dozen students, like Benner, with the Fabricius lab.

“We have had about 12 to 24 undergrads working with us, spending 10 to 15 hours a week to help at the museum,” Gonzales said. “We go in and test on the weekends, and during the summer, we tested every day.”

The groundwork Gonzales laid at the museum will continue to link ASU scientists with the public for the foreseeable future, said Melanie Martin, early childhood specialist with the Children’s Museum of Phoenix.