

Psychological Sciences Communiqué

Spring 2014

Beversdorf Takes Interdisciplinary Approach to Autism Research

By Dennis Miller

Until recently, when health professionals were asked, “What causes autism?” their response would have been, “We don’t know.” However, research in the past decade has determined that most disorder cases are caused by an interaction of autism risk genes and environmental factors. This research may ultimately lead to evidence-based efforts to educate women on steps they can take to minimize the risk of having a child with autism. Possibilities may include taking prenatal vitamins and eating a healthy diet before and during pregnancy.

As autism is a complex interaction of genetics, the nervous system, and the environment, a researcher cannot understand the disorder from only one scientific perspective. A multidisciplinary approach that examines the disorder from a variety of disciplines and recruits the expertise of collaborators from across the campus is required. The research of Associate Professor David Beversdorf and his collaborators within and outside the MU Department of Psychological Sciences epitomizes this approach to understanding and preventing autism. Beversdorf and his colleagues study children and adults with autism, perform behavioral studies in rodent models of the disorder, and study the human and animal brain. He believes this work, “has the potential to understand what in the genome and in the brain is causing the behavioral changes in autism.

Our goal is to determine what we can do to prevent autism and minimize its impact in people with the disorder.”

While autism is a human disorder, animal research is a key tool to experimentally control the environmental and biological factors that could contribute to the disorder’s development. Beversdorf and psychology’s Associ-



David Beversdorf

ate Professor Matthew Will recently examined the effects of prenatal diet and prenatal stress on social behaviors that model autism symptoms in adult offspring mice. In the journal *Behavioral Brain Research*, they reported that mice born from mothers fed a diet rich in omega-6 polyunsaturated fatty acid (PUFA) displayed higher levels of anxiety and decreased social interaction, compared to mice born from moth-

ers fed a control diet. Their findings, if confirmed in patients, are consistent with human observations on the role of prenatal nutrition in autism prevention, and may suggest that women who are pregnant should monitor their PUFA consumption. Beversdorf and his colleagues are exploring this in a clinical population. This research has been funded by Mizzou Advantage, an ongoing initiative by the University of Missouri to foster interdisciplinary collaboration among faculty, staff, students, and external partners to address and solve real-world needs and problems. Beversdorf and Will are expanding their basic animal research through collaboration with Assistant Professor Catherine Hagan of veterinary pathology and Professor Kevin Fritsche in the Department of Animal Sciences. Their overall goal is to better understand how autism-linked genes interact with diet and stress in rodent behavioral models. As autism is defined in the animal laboratory, the findings can translate to efforts to prevent autism and manage its symptoms in humans.

Many individuals with autism experience anxiety, and there are many commonalities between autism and anxiety disorders, such as obsessive-compulsive disorder. Stress exacerbates experiences of anxiety and panic, in part through sympathetic and noradrenergic systems in the nervous system. Beversdorf and his colleagues have investigated these interactions to develop

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By Moshe Naveh-Benjamin

From the Chair

This has been a good year for our department. Our faculty members continue to excel in all respects, enhancing our standing as a major center of psychological research and teaching. Half a dozen of our faculty members are serving now as editors and associate editors in major journals in psychology, and several of our faculty members have received honors for their outstanding research and teaching. Laura King has received the prestigious MU Curators' Professorship, and Clint Stober received the Provost's Outstanding Junior Faculty Research and Creative Activity Award. Our faculty members also continue to seek and receive external support for their research, and this year several of them were awarded multi-year grant support by NSF and NIH. In addition, our NIH training grant in addition led by Ken Sher, continues to attract excellent graduate students and postdoctoral researchers. Finally, several faculty and staff have received departmental awards, including Ed Merkle who was the winner of the Max Meyer Outstanding Junior Faculty Research Award, Lisa Bauer who was the winner of the Bob Daniel Outstanding Junior Faculty Teaching Award, Julianne Ludlam who was the winner of the inaugural David G. McDonald Contributions to Undergraduate Education Award, J. Scott Saults who was the winner of the Gail Raskin Outstanding Research Staff Award, and Jill Edwards who won the MU Service Champion Award given by the Staff Advisory Council.

Ian Zimmerman, a new teaching faculty member, has joined us this year, and we are very happy to welcome him to the department. We also eagerly anticipate the arrival of two additional faculty members who will be joining our ranks this fall: Ashley

Groh, a developmental psychologist whose work emphasizes the role of children's early relationships with their parents on their social and emotional development across the lifespan; and Kirk Brown, a social psychologist who studies mindfulness, its measurement, and its neural correlates.

Our staff has also undergone some significant changes this year. Gayle Stogsdill, our business manager, has retired after 28 years of excellent service to the department, and Cindi Kelly has stepped into this important position, which will affect all of us in various ways. Also new to our department are Kristina Bradley, who is now in charge of our graduate student office, and Lisa Roseman and Andrea Lawless, who join our fiscal office and replace David Knipp, who has also retired from the department after 32 years of noteworthy service. Finally, our new system administrator, Brian Koenigsdorf, has just joined us, and we extend to him a warm welcome. Our new members join our excellent long-term staff in providing the vital organizational infrastructure that the department requires to thrive in all aspects of its operation.

On a more somber note, this year we were very saddened to lose Igor Iziumine, one of our system administrators, who died unexpectedly and will be sorely missed by all. We greatly appreciate and remember well his many years of loyal service for the department, and our thoughts have been with his family.

On the educational front, we continue to provide first-rate teaching and learning experiences to our undergraduate and graduate students. Last fall, the department started offering a bachelor of science degree in addition to the bachelor of arts, providing a more rigorous, science-intensive de-

gree program that makes psychology students both more attractive candidates for postgraduate admission and more likely to succeed once they embark on their psychology-related careers. In addition, we are increasing the choices available to our graduate students by offering a new master of arts program in applied psychometrics, which enables students to acquire in-depth knowledge of testing theory and practice, leading on to either doctoral research or employment in the educational system and the industry.

This *Communiqué* highlights interdisciplinary research conducted by our faculty, which involves researchers from other departments. The article on Page 1 describes research on autism carried out by David Beversdorf, who collaborates with other members of our department, Shawn Christ, Matt Will, and Scott Frey, as well as with other researchers at MU. Such integrative research is a good example of how collaborations between researchers from psychology and other fields can help our understanding of neuro-developmental problems and lead to evidence-based efforts to educate the public about these problems.

Our department also prides itself on our continuing efforts to embrace diversity in our research and teaching. The large number of graduate students who receive minority fellowships is testimony to that effort. The bright undergraduate students who join our departmental labs to conduct research with our faculty under the McNair Scholars Program are another fitting example. This program seeks to prepare first-generation college students and students from underrepresented minority groups for doctoral studies. Five current success stories as well as several alumni of McNair Scholars in our department are featured in this publication.

Our seventh Psychology Day on April 25, 2014, will see both graduate and honors undergraduate students present their research from the current academic year. That same day, we will also be sponsoring an award ceremony to note the accomplish-

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Beversdorf, Autism Research

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new ways to manage autism symptoms and to monitor neurodevelopment in children. Beversdorf and Associate Professor Shawn Christ in the Department of Psychological Sciences administered propranolol, a drug that blocks noradrenergic receptors in the nervous system, to adults with and without autism. As reported in the journal *Cognitive and Behavioral Neurology*, propranolol improved performance on a word fluency test in adults with autism, suggesting that altered noradrenergic systems in the brain contribute to autism symptoms and identifying a drug treatment to manage disorder symptoms.

Beversdorf, Christ, and Professor Gang (Gary) Yao in the Department of Biological Engineering also reported in the *Journal of Autism and Developmental Disorders* that children with autism

have an altered sympathetic system, as measured via the eye's response to light, compared to children without autism. This multidisciplinary research has promise to aid clinicians as a novel tool to monitor and diagnose developmental disorders such as autism. Beversdorf and Christ are continuing their work to understand the impact of stress on the behavioral functioning of individuals with autism with Miller Family Professor Scott Frey through functional magnetic resonance imaging studies in the Department of Psychological Sciences' Brain Imaging Center. The multidisciplinary research will allow the group to evaluate subtle neural changes in the brain between those with and without autism and to better understand the biological basis of the disorder.

Modern investigations into complex

human behaviors and psychological disorders, such as autism, require psychologists to consider their research questions from a variety of perspectives—genetic, biological, and behavioral. Beversdorf's research capabilities have been enhanced through his collaboration and ability to look at behavior from multiple perspectives. However, he is not the only faculty member in psychology to challenge the understanding of human behavior through a multidisciplinary approach. Faculty projects on alcoholism and drug addiction, memory across the lifespan, social cognition, and ecology also rely on expertise from and collaboration with colleagues outside of the department.

National Newsmakers

The researchers highlighted below have been publicized far and wide, on YAHOO! News, and on NPR and *ABC News*, among many others.

Professor Laura Scherer found that when physicians label common symptoms in infants, such as crying and spitting up, as "GERD," this increases parents' desire for medication even when parents are told that the medication will probably be ineffective. This story was picked up by YAHOO! News, *Health Magazine*, and *EurekaAlert!* Web sites, and by NPR.

Neurologist David Beversdorf and neuropsychologist Shawn Christ found that propranolol, a drug commonly prescribed to treat high blood pressure, anxiety, and panic, may improve the working memory abilities of individuals with autism. Their findings were published on *redorbit.com*, *ScienceDaily*, and *Futurity.org*.

Professor Laura King's research suggested that meaning in life has an im-

portant adaptive function, connecting people to the world that surrounds them, and thereby, boosting their chances of survival. Her findings were published on *ScienceDaily.com*, *EurekaAlert*, and *ScienceCodex.com*.

Assistant Professor Victoria Shaffer's study of how modifying lists of diagnostic lab tests in electronic medical software affected health professionals' decision making and which lab tests they order for patients was published in *ScienceDaily*, *EurekaAlert!*, and *Healthcare Informatics*.

Associate Professor Dennis Miller found that resveratrol, a natural compound found in colored vegetables and grapes, may minimize or block the effects of methamphetamine. The story was picked up by the *Associated Press*, *Futurity.org*, and *ScienceDaily*.

Doctoral student Joe Hilgard found that escapism, social interaction, and

rewards fuel problematic video-game use among "very casual to 'hardcore' adult gamers." News of his study was reported on *ABC News*.

It's long been wondered if there is such a thing as a "contract year effect," under which professional athletes perform better during the season before contract renewal. Undergraduate Mark White and Professor Kennon Sheldon have determined that it is real, but they caution that there is also likely to be a post-contract performance slump. This story was covered by *Fox Sports 1*, and it appeared on *Science Daily* and *Topix.com*.

McNair Scholars in Psychology

By Nicole Campione-Barr

In 1989, the University of Missouri became one of the original 14 universities funded by the U.S. Department of Education to implement the McNair Scholars Program. Named after Ronald E. McNair, a mission specialist aboard the space shuttle *Challenger* and the second African American to travel into space, the program seeks to prepare first-generation college students and students from underrepresented minority groups for doctoral programs at 154 institutions. Approximately 18 scholars are chosen annually in their junior or senior years at MU to be given the opportunity to work one-on-one with a faculty member in their chosen area of research to develop and complete a research study. This includes writing a manuscript-length report as well as a research presentation poster. Scholars present their research findings at the annual McNair Scholars Conference in April, but, most also present their research at other campus or professional conferences. In addition to the strong research training the scholars receive, the program also works closely with students on all aspects of the graduate school application and interview process, to include writing personal statements, navigating the financial aid process, and even fine-dining etiquette.

The department has five majors in the program. Juniors Katerina Rios and Chanell Washington, as well as senior Calandria Frazier, are currently conducting their research studies.

Rios is working with Curator's Professor Timothy Trull on a study of the roles of emotion dysregulation and impulsivity in predicting substance use in borderline personalities. She hopes that the experiences she is gaining through the McNair program will pave the way for her pursuit of a doctorate in clinical psychology after she graduates in May 2015.

Washington is investigating how emerging adult women perceive their relationships with their fathers and romantic partners, and how their parents' marital status (married, divorced, single, or never married) affects the association between the two along with her mentor, Nicole Campione-Barr. Her long-term goal is to complete a doctoral program in either marriage and family therapy or counseling psychology so that she may have the ability to both research and counsel families regarding the long-term implications of marital problems and divorce.

Frazier hopes to study addictive behaviors and substance abuse through a clinical psychology doctoral program. Thus, she is working this year with Curator's Professor Kenneth Sher to examine the consequences of changes in diagnostic criteria in the Diagnostic and Statistical Manual (DSM) of substance-use disorders.

McNair scholars majoring in psychology are also reaching out to related fields to more fully research their areas of interest. Senior Brandice Carpenter chose to work with Leigh Tenku, an associate professor in the

School of Social Work, to prepare for graduate school in either counseling psychology, community psychology, or social work. Her research involves a program evaluation of the MU International Center's American League of International Friendship Encounters Program. Specifically, her research investigates how this program assists in decreasing acculturated stress and increases perceived social support for international students.

December 2013 graduate Jale't Hickmon-Rosa conducted her McNair project last year with Wendy Reinke, an associate professor of school psychology in the College of Education. In her study, Hickmon-Rosa examined the association between teacher profiles (of stress, burnout, self-efficacy, confidence, and coping) and students' outcomes (academic and behavioral) and found that teachers high in stress and burnout and low in self-efficacy, confidence, and coping skills were associated with students who were lower in academic achievement and higher in disruptive behavior scores. She is currently applying to school psychology doctoral programs to continue her interests in this area.

As is evident by the topics these young scholars are researching, these women are working hard to study aspects of human behavior in order to help others live successful and well-adjusted lives. They are also breaking through barriers by making their fields more diverse in scholar membership and getting their voices heard. They also represent the best and brightest of the undergraduate majors in the Department of Psychological Sciences at MU.



Jale't
Hickmon-Rosa



Brandice
Carpenter



Calandria
Frazier



Katerina
Rios



Chanell
Washington

Tammy Brazeal
BA '91 psychology, PhD '98 clinical
psychology



As an undergraduate, Brazeal was interested in pursuing a career that would enable her to work with children as a clinical psychologist. However, psychol-

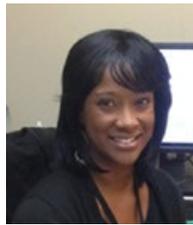
ogy has turned out to be a more diverse experience than she expected, providing her with a number of exciting opportunities. Brazeal gained valuable research experience as a McNair Scholar working on a longitudinal project studying adult children of alcoholics in Curator's Professor Kenneth Sher's laboratory. As a graduate student at MU, she was awarded the opportunity to work with Professor Debora Bell and obtained her doctorate in clinical psychology with an emphasis on child psychology.

She has since worked providing substance-abuse treatment and general mental health treatment, and as part of a multidisciplinary treatment team on an adult inpatient psychiatry unit. In 2005, she became a board-certified clinical psychologist. Brazeal is employed as a home-based primary-care clinical psychologist through the Veterans Health Care System of the Ozarks. Working with a primary-care team, she visits the homes of veterans who are unable to travel to the clinic due to serious chronic illness. She loves making home visits where she can provide clinical services to both the veterans and their caregivers. She enjoys listening to the veterans' experiences and tries to provide them with comfort and peace of mind as they navigate chronic illness and the dying process. She also provides bereavement services to family members/caregivers. In addition to her work with veterans, she supervises doctorate of psychology practicum students who are interested in behavioral health intervention.

Brazeal says that her greatest personal accomplishment is her family. She is married to MU alumnus David Brazeal, BJ '92, and they have two children, Timothy, age 17, and Jessie, age 6.

McNair Scholars Alumnae

By Lisa Bauer



Taisha Jones
BA '02 psychology and sociology

Jones' initial interest in psychology was sparked when she was nine years old and saw

a psychologist on television. As an undergraduate, she became more passionate about psychology and recognized a need for diversity within the field. As a McNair Scholar, she worked with Professor Kennon Sheldon exploring the roles of subjective well-being, autonomy, and chronological age on how individuals internalize interpersonal and civic duties. She credits the McNair Scholars Program for guiding her through the graduate school application process, teaching her about research methodology, enabling her to discuss research literature and findings with ease, providing conference presentation experience, and enhancing her overall self-confidence.

Since obtaining a clinical psychology doctorate from Saint Louis University in 2010, Jones completed an informal postdoctoral training program with a community mental health center in Arkansas. While working with rural populations, she was presented with unique issues—such as farm equipment accidents that led to PTSD or trauma symptoms—that were uncommon in urban areas. That experience enabled her to learn more about herself, including her clinical interests. Today, Jones works in the adolescent unit at Arkansas State Hospital where she conducts psychological evaluations and provides individual and group therapy. She also enjoys assisting with the supervision and training of pre-doctoral interns and psychiatry fellows and is looking forward to conducting research that incorporates her interests in spirituality and religiosity.

Tracey Latimore
BA '09 psychology,
MA '12 school
psychology

As an undergraduate, Latimore desired a career that would enable her to work with and enrich the lives of school-aged children. Latimore credits Assistant Professor Nicole Campione-Barr, the McNair Scholars Program staff, and Associate Professor Wendy Reinke for helping her realize her dream. She worked closely with Campione-Barr on her honor's thesis and McNair Scholars project examining parent-adolescent relationships, sibling ordinal status, and adolescent adjustment. With Campione-Barr's guidance and support, Latimore realized her interests in becoming a school psychologist. She is enrolled in MU's school psychology doctoral program and works part time as a graduate clinician at the MU Assessment and Consultation Clinic and as a research assistant for a randomized efficacy trial funded by the U.S. Department of Education, Institute for Education Services.

Under Wendy Reinke's mentorship, Latimore obtained her master's degree and has conducted research on violence prevention, effective classroom management, and interventions for escape-maintained behaviors. She is very interested in educational public policy and is extremely proud of being nominated by the National Association of School Psychologists (NASP) Government Professional Relations Committee to be the student leader of the NASP 2014 Graduate Student Capitol Hill Experience. This honor illustrates the importance of her research, and she hopes that one day it will influence public policy. She is applying for internships and anticipates completing her doctorate in 2015.



Latimore and NaTashua Davis, director of the McNair Scholars Program at MU.

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Keynote speaker for 2014 Psychology Day

Alumna Cindy M. Schaeffer



By Laura Scherer
This year Cindy M. Schaeffer will give the annual alumnus address at Psychology Day. Schaeffer is an associate professor in the Department of Psychiatry and

Behavioral Sciences at the Medical University of South Carolina. She began her academic career at the University of Maryland, College Park, where she obtained her bachelor's degree with a major in psychology in 1992. She then travelled to Columbia for her graduate studies in the area of child-clinical psychology, under the supervision of Charles Boudin, and earned her doctorate from MU in 2000. Schaeffer joined the Johns Hopkins School of Public Health as a postdoctoral fellow, then went on to become an assistant professor at the University of Maryland, Baltimore, where she stayed for five years before moving to her current position in South Carolina.

Schaeffer's research focuses on the development, prevention, and treat-

ment of antisocial and criminal behavior in juveniles, and has also examined the effectiveness of practical interventions aimed at improving the life outcomes of at-risk youth. One such intervention—multisystemic therapy (MST)—is particularly comprehensive, as it addresses all of the various environmental factors that impact the lives of juvenile offenders, such as their homes, families, friends, schools, teachers, and neighborhoods. Schaeffer's research has demonstrated, among other things, that this intervention is extremely effective at reducing recidivism rates of juvenile offenders and reducing mental-health symptoms for victims of childhood abuse and neglect. The scope of Schaeffer's work is impressive, spanning development, empirical testing, and implementation of these interventions. Schaeffer has written 25 peer-reviewed articles and 15 book chapters. In addition, she was recently awarded a grant from the National Institute of Mental Health to examine the potential benefits of implementing mobile technology into multisystemic therapy programs.

Of her experiences at Mizzou, Schaeffer says, "I was drawn to work with my adviser, Chuck Borduin, because of my interest in becoming

a family therapist. I'm lucky that I clicked so readily with him. I consider Chuck a kindred spirit." Soon after arriving at MU, she became an MST therapist and served in that role for three years. "Through delivering the intervention for juvenile offenders," she says, "I became increasingly interested in developing similar ecologically oriented models for other clinical conditions." Her work is driven by the goal of ensuring the wide-scale adoption of these interventions in real-world settings. Her dissertation examined long-term outcomes of youth who had received MST. MST has remained a focus of her research throughout her career as she has developed, evaluated, and disseminated new variations of the model in her role at the Family Services Research Center.

In addition to these interests and achievements, Schaeffer spends her weekends trying out new vegetarian recipes, taking hikes with her rescued Rottweiler-mix, and "serving as groupie to my husband's various rock and roll bands." She also remembers her time in Columbia fondly. "I loved my time in Columbia, and particularly enjoyed its small, yet cosmopolitan feel." When she visits Columbia, she is likely to be found having a slice at Shakespeare's, drinking a pale ale at Flatbranch, or buying jewelry from local artists at Bluestem.

McNair Alumnae

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Sara Mijares St. George **BA '07 psychology and Spanish**

St. George became interested in clinical-community psychology after enrolling in Anna Bardone-Cone's abnormal psychology class which coincided with her learning that a friend had an eating disorder. Under the direction of

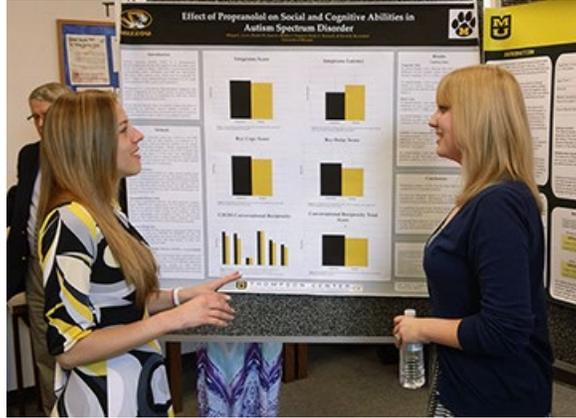
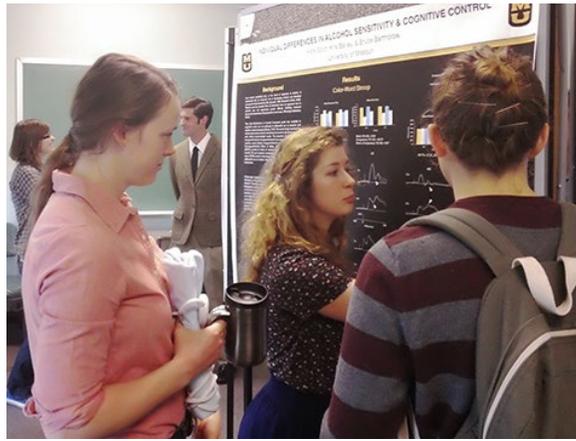
Bardone-Cone, and with the support of the McNair Scholars Program, St. George examined the differences in psychological and behavioral aspects of exercise among females with adolescent-onset eating disorders. As a graduate student at the University of South Carolina, her research has

focused primarily on youth obesity prevention in underserved, ethnic-minority populations.

In 2010, St. George was the proud recipient of an NIH F31 training grant to fund her research focusing on the development and implementation of a family-based intervention for promoting physical activity and healthy dietary behaviors in African-American adolescents and their parents. To date, St. George has published over 10 peer-reviewed journal articles and has presented her research at numerous conferences. She is currently completing her APA-accredited pre-doctoral internship as a pediatric psychology resident at the University of Miami Miller School of Medicine and anticipates obtaining her doctorate in clinical-community psychology in August. She met her husband at MU and has fond memories of her undergraduate years. When MU faces the South Carolina Gamecocks, she proudly cheers, "Go Tigers!"

At right: graduate student Kimberly Fleming and Kate Scott, senior honors student, presenting. Morgan Lewis, senior honors student, and graduate student Anna Lindell, below right.

Alan Strathman presenting awards, below.



Michael Roberts, alumnus guest speaker, and Kristin Hawley.



At left: Kayla Kilpatrick, Amanda Rose, Jessica Shearin, and Katheleen S. Hartenbach.

Below: graduate student Samantha Heintzleman, at left; senior honors student Taylor Walls; and Whitney Brown, graduate student, at right.



Alumna Kelly Bassett Greer and senior honors student Stacy Stewart.

Psych Day 2012

Communiqué is published annually by the Department of Psychological Sciences at the University of Missouri.

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The department appreciates hearing from alumni and friends. Send announcements or milestones to the address listed above.

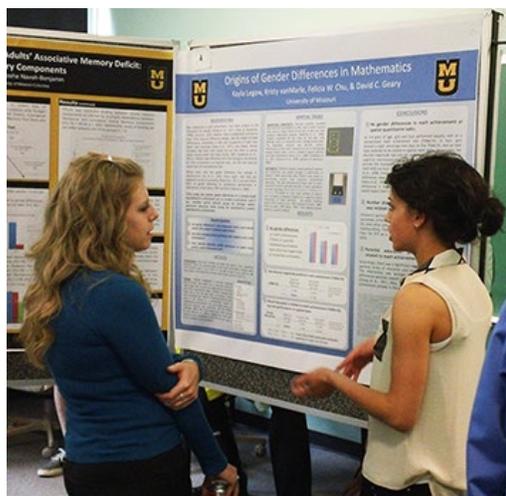
Seventh Annual Psychology Day, April 25

Cindy M. Schaeffer (see Page 6) will be the keynote speaker for Psychology Day this year. Her presentation is titled “Expanding the Evidence Base: New Directions in the Treatment of Juvenile Offending and Child Maltreatment.”

During the day, undergraduate honors students and graduate students will present findings from their research. The day will end with the traditional reception in the Student Recreation Center Aquatic Mezzanine on campus.

All alumni are invited to attend Psychology Day. For more information, or to let the department know you are coming, contact Kelly Davis at 573-884-6277 or daviskel@missouri.edu.

Want to know more? Please visit the department’s Web site at psychology.missouri.edu.



Graduate student Hayley Treloar and senior honors student Kayla Legow.

From the Chair

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ments of our students, joined by our alumni board members. Our guest speaker will be Cindy M. Schaeffer, a graduate alumna of the department in the child-clinical area, currently on the faculty at the Department of Psychiatry and Behavioral Sciences at the Medical University of South Carolina (see Page 6). We warmly invite all of you to join us for Psychology Day this year.

Let me end with a word of thanks and gratitude to all of you, alumni, students, staff, and faculty for your ongoing contributions to making our department so successful.