The State of the Department

William S. Gray Professor and Department Chair Amanda Woodward highlights some of the department's most important news— from new faculty hires to graduate student and faculty accomplishments to new research collaborations. Full Story»

Can Bedtime Learning Change Kids' Attitudes Toward Math?

Susan Levine and Sian Beilock have been collaborating on the Bedtime Learning Together (BLT) project to evaluate whether parent-child interaction around fun and interesting math problems results in positive changes in children's math learning and attitudes. Full Story»

Wisdom Research at Chicago

An interdisciplinary group of scientists and scholars at Chicago, led by Howard Nusbaum in the Department of Psychology, have begun collaborating on a set of projects that use a range of methods from textual analysis to cognitive neuroscience to understand wisdom. Full Story»

The Department Welcomes Three New Faculty

This year the Department of Psychology hired three new junior faculty. We look forward to seeing their research programs develop and create new opportunities for interdisciplinary collaborations. Full Story»

Team Science: Graduate Student Collaborations at Chicago

Graduate student research is taken in exciting new directions as a result of collaboration across labs and across areas. By forming research teams, graduate students are pursuing innovative ways to research a more complex set of questions. Full Story»
Alumni Gifts Create New Opportunities for the Department

Several gifts to the Psychology Department have allowed us to continue to offer an alumni lecture series as well as offer new undergraduate funding opportunities for conference travel and summer research. Full Story»

Support the Department

Gifts from alumni and friends provide vital support to our department, ensuring that our faculty and students can advance their research.

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Greetings from Chicago! The past year has been a busy one for faculty and students in the Psychology Department. I’m happy to have the opportunity to give you a taste of what we’ve been doing.

A major focus this year has been recruiting excellent new faculty colleagues. We undertook a large-scale faculty search and succeeded in bringing three outstanding assistant professors to the department. Jenifer Kubota, a social psychologist, and Marc Berman, a cognitive neuroscientist, joined us this year. Alex Shaw, whose work spans developmental and social psychology, will join the department in July. You can learn more about Jeni, Marc and Alex, and their innovative programs of research in this newsletter. In addition, we are very fortunate to have Sarah Gaither, a social and developmental psychologist, join us this year via the prestigious Provost’s Career Enhancement Postdoctoral Fellowship.

In late-breaking news, we have also had success in recruiting outstanding senior faculty. We recently learned that Edward Awh and Edward Vogel, both leaders in the cognitive neuroscience of attention, will be joining the department in the coming year. Awh and Vogel will add to the Department’s strength in cognitive neuroscience and enrich our connections to the University’s new Neuroscience Institute. We look forward to welcoming them to Chicago.

Collaboration is at the core of our department. Innovative collaborations are the fuel for many of our scientific discoveries. In this newsletter, we highlight two examples of fruitful faculty collaborations: Susan Levine and Sian Beilock have developed a multi-faceted collaboration that investigates mathematics and science learning and the factors that can impede as well as support children’s learning, and Howard Nusbaum has brought together an interdisciplinary team spanning the Department and the University to bring multiple perspectives to bear in understanding wisdom and the conditions and experiences that support wise decisions. Doctoral students play a critical role in making collaborative research possible, and so we also highlight three student-led collaborations – just three examples of the groundbreaking research in which our students are engaged.

The achievements and efforts of many members of the Department received recognition this year. Carlos Cardenas-Iniguez, a third-year doctoral student, was awarded the Jane Morton and Henry C. Murphy Award in acknowledgement of his excellent work supporting diversity on campus. Anne Henly, Senior Lecturer and Director of the Undergraduate Research Initiative in Psychology, was awarded a Quantrell Award for Excellence in Undergraduate Teaching, a fitting acknowledgement of her contributions as master teacher and mentor. Among the faculty, John Cacioppo was appointed to the President’s Committee on the National Medal of Science, Jean Decety was awarded the IPSEN Foundation’s Neuropsychology Award, Sian Beilock was elected to the American Academy of Kinesiology, and I was elected to the American Academy of Arts and Sciences. With a lovely symmetry, the Association for Psychological Science recognized a junior and a senior member of the
Department: Daniel Casasanto received the Janet Taylor Spence Award for Transformational Early Career Contributions and Susan Goldin-Meadow received the William James Award for a Lifetime Achievement in Basic Research.

College students are a vital part of our department community. This year, over a hundred students were part of our laboratory research teams, and a number of students were able to carry out independent research projects. Nineteen graduating seniors completed honors theses, each involving an independent laboratory project, paper, and Honors Day presentation. Their theses spanned every corner of the field of psychological sciences—neuroscience, social psychology, cognitive and developmental psychology, and many projects involved collaborations outside of our department, for example with groups in the medical school, SSA, CHDV, and the business school—truly underscoring both the interdisciplinary nature of the research in the department and the creative energy of our students.

We hear from College alumni that the opportunity to engage in independent research is among the most important and memorable aspects of their time at Chicago. These opportunities receive critical support from friends of the department. We are extremely grateful to Earl and Barbara Franklin for their generous, continuing support of summer research opportunities for undergraduate students, and to Norman Anderson who has provided new support to allow undergraduate students to present their experimental work at scientific meetings.

This year we welcomed Dale Barr back to give the Starkey Duncan Alumni Lecture. In addition to giving a great research talk, he brought home the ways in which his experiences at Chicago continue to influence his thinking. Maintaining connections to alumni and friends is important to us, and I hope that this newsletter does a bit to strengthen the ties.

Best wishes for a happy holiday season and a wonderful new year,

Amanda Woodward
William S. Gray Professor and Chair
Can Bedtime Learning Change Kids’ Attitudes Toward Math?

For the past year and a half, Drs. Susan Levine and Sian Beilock have been collaborating on the Bedtime Learning Together (BLT) project, funded by the Overdeck Family Foundation. Graduate students Talia Berkowitz and Marjorie Schaeffer are working on the project along with Beilock and Levine. This project aims to evaluate whether parent-child interaction around fun and interesting math problems results in positive changes in children’s’ math learning and math attitudes compared to a reading control group.

During the Fall of 2013, over 600 families with children entering 1st grade signed up to participate in the study. Each family was given an iPad mini with the Bedtime Learning Together app preloaded on it. Parents were asked to read the nightly passages and work through the math or reading questions with their children at least 4 times a week throughout the school year. The project calls for following children throughout the first five years of elementary school. During year two of the project, an additional 270 families with children in pre-Kindergarten and Kindergarten will be recruited to join the study as part of a second cohort.

This is not the first major collaboration between the Beilock and Levine labs. The two PIs also collaborate on a Department of Education (Institute for Education Sciences) study looking at the relationship between elementary school teachers’ math anxiety, parents’ math anxiety and student learning across the school year. This research is showing that parents, particularly those high in math anxiety, need support to effectively help their children with their math homework. In many ways the BLT project is an extension of this work, incorporating measures from parents in addition to teacher and student measures. The BLT project also works with younger students than included in the IES study to examine the possible emergence of math anxiety very early in schooling.

Prior research in Susan Levine’s lab has shown that early number talk is crucial for the development of later math skills. Prior work in Sian Beilock’s lab has documented the deleterious effects of math anxiety on performance. By combining their expertise, the researchers are currently focused on finding ways to help parents reduce their math anxiety and more effectively support their children’s math learning. The hope is that by providing a script for even the most math anxious parents to talk comfortably with their children about number and spatial concepts, children will show more positive math attitudes, more interest in math, and greater math learning.
Wisdom is a quality of human nature that has been discussed extensively throughout history, perhaps most notably by Aristotle. In modern times, however, there has been little public discourse about wisdom or its importance in human enterprise, and even less scientific study of wisdom. However, an interdisciplinary group of scientists and scholars at the University of Chicago, led by Prof. Howard Nusbaum (pictured left) in the Department of Psychology have begun to change that, collaborating on a set of projects that use a range of methods from textual analysis to cognitive neuroscience to understand wisdom.

Wise decisions and action go beyond being smart, clever, or knowledgeable—being wise requires the quality of prudent judgment. Aristotle defined wisdom as practical decisions that lead to human flourishing, grounding wisdom in a more prosocial notion of human well-being in terms of seeking the highest human good. On this view, wisdom integrates cognitive, affective, and social information, and typically includes aspects of pro-social consideration, emotional homeostasis, reflection/self-understanding, value relativism, and tolerance.

The Chicago Wisdom Research Project is now in its third year of studying wisdom. In its current form, the focus of the research is on understanding where wisdom comes from and the role of experience in its development. People often believe wisdom comes with age; an idea that may be due to examples that come readily to mind either from personal experience or from popular culture. Currently, the Chicago Wisdom Research Project supports six different research areas that examine the role of expertise and experience in practical wisdom.

Across these areas studies are examining how experience and expertise affect empathy, insight and cognitive creativity, decision biases, and overall measures of wisdom. The kinds of experiences and expertise examined range from training in medical school to the use of a second language, to different kinds of language use, to practices such as meditation and ballet. In essence, these projects seek to understand how different aspects of wisdom such as prosociality and decision processing are changed by specific types of experiences.

The results of these studies have been varied and often surprising. Work by psychology professor Boaz Keysar and graduate student Sayuri Hayakawa has shown that people who are using their second language are less biased in economic decisions, show more cognitive creativity, and, in collaboration with Albert Costa at Pampeu Fabra in Barcelona, Spain, have found them to be more utilitarian. This suggests that people are wiser in a second language than their first. A research project led by economics faculty Ali Hortacsu and John List, College alumnus Lester Tong, and economics graduate students Karen Ye and Asai Kentaro has shown that experience in
EBay trading reduces economic decision biases by reducing loss aversion, as indicated by reductions in activity in brain regions related to negative affect. A study by music professor Berthold Hoeckner and postdoctoral researcher Patrick Williams with psychology graduate students Carly Kontra and Heather Harden has shown that increased meditation and ballet experience increase measured wisdom whereas other kinds of experiences do not. And research by psychology professor Howard Nusbaum on the role of sleep in developing insight, carried out in collaboration with colleagues Hao Zhang and Qinglin Zhang at Southwest University in Chongqing, has demonstrated that sleep increases the effectiveness of incubation thereby promoting insight.

This research represents the first attempt to study wisdom systematically from a variety of directions and disciplines, examining how different aspects of wisdom develop and how they are related. Although scholars have thought about wisdom throughout human history, the scientific study of wisdom is relatively young. Research at the University of Chicago on wisdom and its nature and development is the first organized approach to studying wisdom using modern scientific methods. The early results of this research have already begun to illuminate ways in which different kinds of experience can lead to increasing practical wisdom.
The Department Welcomes Three New Faculty

The Department of Psychology welcomed three new assistant professors this year. Marc Berman, Jennifer Kubota, and Alex Shaw all bring exciting lines of research to the Department.

Jennifer Kubota comes to the University of Chicago from New York University where she completed a postdoctoral fellowship in social neuroscience after receiving her PhD from the University of Colorado, Boulder. The aims of Kubota’s research are to explore the origins of prejudice and characterize reliable prejudice interventions. To achieve this goal, Kubota explores how our emotions, cognitions, and motivations influence our thoughts, feelings, and actions towards members of other social groups. Her work has advanced theory on how the brain processes race and how this influences intergroup relations. Kubota’s research is interdisciplinary, utilizing both innovate neuroscience (e.g. fMRI and EEG) and behavioral research methods (reaction time and self-report). For example, her research combines classic behavioral economic paradigms and computational tools to model intergroup decision-making. This approach allows researchers to better understand why and when discrimination occurs in everyday interactions and, importantly, provides insight into the mechanisms of prejudice and prejudice reduction. To explore the real-world consequences of these psychological and neurological intergroup processes, Kubota’s Social Justice Neuroscience and Psychology Lab conducts research both basic and applied research within the community. Ultimately, Kubota strives to translate empirical evidence into formulations that can shape and inform equality-based public policies.

Marc Berman comes to us from the University of South Carolina where he was an Assistant Professor of Psychology and Cognitive Neuroscience. He completed his postdoctoral training at the University of Toronto’s Rotman Research Institute after receiving his Ph.D. from the University of Michigan in psychology, specializing in cognition and cognitive neuroscience, and industrial and operations engineering. Berman, named a Rising Star by the American Psychological Society (APS) in 2013, joined the faculty this summer and is the director of the Environmental Neuroscience Lab. In his research, Berman looks at the relationship between individual psychological processing and environmental factors. He utilizes brain imaging, computational neuroscience and statistical models to quantify the person, the environment and their interactions. Some of the findings from Berman’s lab include showing that brief interactions with natural environments (such as a walk in a park) can improve memory and attention by 20%. In addition, he and his collaborators have shown that more efficient brain networks are linked to enhanced self-control throughout the lifespan. At the University of Chicago he hopes to advance this work to uncover the physical low-level features of nature (such as color and...
spatial properties) that lead to these improvements as well as other manipulations that may make the brain more efficient thereby improving self-control and other motivational factors. With a better understanding and quantification of the relationships between the human mind and the environment he hopes to aid in the design physical environments in ways that will optimize human mental health, physical health and overall well-being.

Alex Shaw will begin his appointment in the Department in Summer 2015 after completing a postdoctoral fellowship at the University of Chicago's Booth School of Business. He received his PhD in developmental psychology from Yale University. Alex researches how children and adults navigate the complex social world by maintaining their own and tracking other people's reputations—the behavioral strategies that people deploy to manipulate their public image, and counter-strategies that others use to see through such self-promotion.

His research to date has been primarily focused on why people have a concern with fairness, a desire for people to be paid equally for doing equal work. In this research line, Shaw has demonstrated that adults will waste resources in the name of fairness and that children will even throw resources in the trash in order to be fair. He argues that these results suggest that fairness is not really about creating an optimal distribution of resources, but instead that fairness concerns are really focused on avoiding the appearance of partiality—favoring someone based on a non-socially agreed upon rule. In favor of this hypothesis, Shaw demonstrates that adults and children will create unequal work for equal pay if they can do so using an impartial procedure. He hypothesizes that people are concerned about fairness because they see open displays of favoritism as threatening behaviors that can be used to form new alliances or engender undesirable subsequent favoritism.

Shaw's investigations draw on theories from philosophy and behavioral economics as well as developmental, social, and evolutionary psychology to investigate the ways in which people modify their behavior to change how others see them. Shaw also has research on children’s developing intuitions about intellectual property, morality, resource conflict, gossip, and alliances (friendships).
Collaborations across labs and across areas have taken graduate student research exciting new directions. By forming research teams, Miriam Novack and Eliza Congdon, Geoff Brookshire and Stephen Gray, and Zoe Liberman and Samantha Fan, have been able to pursue innovative ways to research a more complex set of questions.

Eliza Congdon (pictured left) and Miriam Novack (pictured right) are fifth year graduate students in the Department who have been collaborating on research projects since they met as first year students. Drawing on expertise from their advisors, Dr. Susan Goldin-Meadow and Dr. Susan Levine, many of Eliza and Miriam’s collaborations focus on how watching and producing gesture supports math learning and spatial thinking. Their first collaborative project compared the role of using action and gesture to teach children math. The results, published in *Psychological Science* earlier this year, showed that gesturing during a math lesson supported generalization while producing actions on objects, limited learning. This study inspired multiple follow-up projects, including an eye tracking study funded by a Norman H. Anderson research grant here at the University of Chicago and a functional magnetic resonance imaging (fMRI) study in collaboration with researchers at Indiana University. The follow-up projects aim to examine the neural and behavioral mechanisms of learning through gesture. Eliza and Miriam are also interested in the development of gesture production in early childhood. This past July, they presented a talk at the International Conference on Gesture Studies in San Diego relating individual differences in rates of gesture production to spatial thinking outcomes later in childhood. Others have also been involved in several of these collaborations including post-doctoral scholar, Elizabeth Wakefield, and fourth year graduate student, Dominic Gibson.

Geoff Brookshire (pictured left) and Stephen Gray (pictured right), graduate students who work with Daniel Casasanto and David Gallo, respectively, are collaborating on a project using transcranial direct current stimulation (tDCS) to explore the neural activity involved in memory monitoring. tDCS is a technology that increases the excitability of a targeted brain area by applying a direct current through the scalp. The goal of the project is to determine the differential contributions of left and right dorsolateral prefrontal cortex (dLPFC) to diagnostic and disqualifying monitoring processes, both of which help us screen our memory for accuracy and prevent memory distortion. Previous fMRI work in the Gallo lab has demonstrated the importance of both left and right dLPFC to these processes. According to preliminary results from Geoff and Stephen’s experiment, using tDCS to boost excitability in left dLPFC leads to improved performance in episodic memory tasks sensitive to diagnostic monitoring. In the next year, the project will expand to include older adult participants in hope to extend the use of tDCS to alleviate some of the
memory monitoring deficits associated with the natural aging process. A Norman H. Anderson research grant helped to make this project possible.

Graduate students Samantha Fan (pictured left) and Zoe Liberman (pictured right) are collaborating with Katherine Kinzler, Amanda Woodward, and Boaz Keysar on a project that investigates how the bilingual experience influences early social cognition. In their first study, they found that bilingual children demonstrate enhanced perspective taking, suggesting that early exposure to diverse linguistic environments may aid communicative abilities. Future work will examine how these socio-communicative advantages develop across the lifespan starting in infancy throughout adulthood. This project developed out of Zoe and Samantha’s shared interests across developmental and cognitive psychology laboratories. Merging methodologies and expertise has allowed the research team to use existing paradigms to create an innovative program of research.
Alumni Gifts Create New Opportunities for the Department

Undergraduate and graduate student research in the Department of Psychology continues to flourish thanks to gifts from generous donors. Our 2013 Earl R. Franklin summer research fellows have completed fascinating research projects and are now pursuing exciting opportunities after graduation. The 2014 Franklin Fellows are well on their way to completing their honors projects this year. Norman H. Anderson's support for undergraduate conference participation as well as graduate conference travel and research have resulted in a large number of innovative projects this year. Finally, we were thrilled to be able to invite one our PhD alumni, Dale Barr, back to campus this past October to deliver the second annual Starkey Duncan Alumni Lecture.

Earl R. Franklin Fellows

Earl R. Franklin, an alumnus of the College, established a fellowship in 2006 that awards students in the Departments of Psychology and Comparative Human Development merit based funding to conduct summer research. Mr. and Mrs. Franklin had the opportunity to visit the Summer 2013 fellows at a lunch this past April and learn about their honors projects and post-graduation plans. The 2013 Psychology Franklin Fellows include a Fulbright Scholar, Emily Gerdin, who will spend next year in Israel investigating how growing up in an area of
heightened religious conflict influences how children develop beliefs about social categories; Natalie Stepien, who just started a PhD program in Vision Science at the University of California at Berkeley; Brent Rappaport, who is now working at the National Institute of Health studying childhood anxiety with Dr. Daniel Pine thanks to a Postbaccalaureate Intramural Research Training Award; and Anders Hogstrom, who is attending a clinical PhD Program at the University of Connecticut.

The Psychology Department selected four new Franklin fellows for 2014. Sophie Holtzmann is working with Boaz Keysar and PhD student, Sayuri Hayakawa, to study how using an acquired language can make a difference in decision making. Nick Rekenthaler is doing research with Katherine Kinzler, Boaz Keysar, and Amanda Woodward to investigate the social communicative advantages associated with being bilingual. Leah Malamut’s project with Brian Prendergast will investigate the effects of acute immune stress on reproduction in female Siberian hamsters. Finally, Kiehlor Mack is working with Anne Henly and postdoctoral scholar Allison Trude, to investigate how using metaphorical language may influence various cognitive and social-psychological processes, particularly those involved in creativity and perspective taking.

Hanavi-Montgomery Summer Fellowship

In 2011, Lisa Montgomery and Ron Hanavi made a generous gift to the Infant Learning and Development Lab to support summer research projects related to child development. The Hanavi-Montgomery Summer Fellowship awards a summer research stipend to one undergraduate each year to support a student’s research in an area of interest without having the additional burden of needing to find additional summer employment. This year, the Hanavi-Montgomery Summer Fellowship supported Nathan Vasquez, a third-year student in the College majoring in psychology and minoring in statistics. Vasquez is interested in young children’s social reasoning and learning from others.

Norman H. Anderson Awards

For the fourth year, the Department of Psychology awarded Norman H. Anderson funds for domestic conference travel and research-related expenses. Due to an additional gift by Norman H. Anderson to support undergraduate conference travel, funds were also awarded to undergraduates to present their research at conferences this past academic year. Thirty-seven awards were made to graduate students and three to undergraduates. We are happy to see these awards fostering graduate student collaborations and allowing them the opportunity to explore new lines of research.

Some of the research projects this past year included a study on differential mechanisms of false recollection, a study on the physiological and psychological correlates of both competition and performance under pressure, research on children’s resource allocation decisions, and a look at the effect of religious priming on moral judgment. Conferences where students presented their research included: the Society for Personality and Social Psychology, the Society for Social Neuroscience, the Boston University Conference on Language Development, Cognitive Development Society, and Psychonomics to name a few.

Starkey Duncan Alumni Lecture

This past Fall marks the second annual Starkey Duncan
Alumni Lecture. A generous gift from the Duncan family made it possible for us to invite Dale Barr, who received his PhD from the Department in 1999 and is now a lecturer at the University of Glasgow, to give a talk. In his talk, entitled *Conventionality and optimality in spoken language processing*, Dr. Barr discussed how people recover speakers’ intended meanings during spoken language comprehension by focusing on references, or rather through a combination of knowledge about linguistic conventions with situation-specific references related to communicative context. A video of this lecture can be viewed online.