

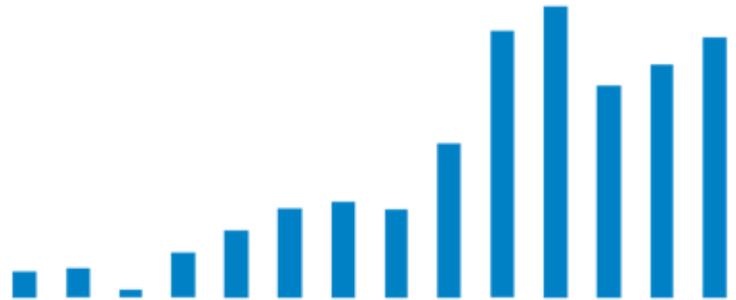
# INsight

News from Notre Dame's **Department of Psychology**

## *External Research Funding Reaches New Heights*

Since the mid-1990s, external research funding awarded to faculty in Notre Dame's Department of Psychology has exhibited remarkable growth. In the last 13 years, Psychology faculty have secured more external grant dollars than in the previous year 10 times, reaching an all-time high in 2003–04. The 2006–07 total of roughly \$4.5 million represents an increase of 975% from 1993–94.

"We have hovered around \$4 million a year for the past five years," says Professor Cindy Bergeman, the Department's chairperson. During this period, the average annual success rate for Psychology faculty grant applications has been just above 50%, and nearly 60% of the faculty currently receive external support for their research.



"Our goal is to increase systematically the percentage of faculty with external funding to 75% and consistently bring in over \$5 million per year," Bergeman says. Together with several co-investigators from the Department, she recently received a \$1 million grant from the National Institute on Aging in support of a four-year project.

The table above tracks the Department's impressive funding trajectory in recent years.

## *Carlson Takes Spatial Cognition in a Different Direction*



At one time or another, we've all been lost and sought out a relative, friend, or gas station attendant for directions. But while "Take Cleveland west and turn on Lilac, just before the bank" seems simple enough, there's a lot that goes into that advice.

Associate Professor Laura Carlson says spatial cognition—the way we represent and remember objects and their locations—is intricately tied to other cognitive processes, like attention, memory, and language.

"If you're walking on a path and there's a landmark right in front of you, it's pretty easy to say 'Proceed until you get to the fountain.' But if there's a landmark that would be sort of diagonally to you instead, that's a more difficult relation to

*continued on page 2*

## Spatial Cognition *(continued from page 1)*

describe... So I may forego that landmark altogether because the other one is much easier to express."

One way Carlson, who is assisted in her lab by both graduate and undergraduate students, studies spatial cognition is by doing experiments where participants are asked to describe an object's location on a computer screen, in a photo, or on a table.

Say the object is a set of keys, and it's placed on a black table with several black objects as well as a red stapler, the idea being that the stapler stands out much like a notable landmark would. In what Carlson describes as a baseline configuration, the keys are set close to this "landmark," typically leading people to describe their location relative to it, as in "The keys are in front of the stapler."

But what happens when the keys are moved closer to one of the black objects?

"It turns out that participants pick [the black object] overwhelmingly," Carlson says. Further, when the keys are diagonal to both the stapler and another object, the stapler is not selected significantly more often. This pattern of data suggests that reference objects are chosen more for their proximity to items of interest than their defining physical characteristics.

Carlson also explores this process through more natural interactions, having one of her students call out "Can you tell me where my keys are?" and seeing how the participant, who thinks the experiment hasn't started, responds. The results have been consistent with the more-controlled experimental tasks, even when the experimenter uses the stapler before leaving the room, thereby drawing the participant's attention to it.

"All the claims in the literature are that you pick a landmark that is really



*Carlson discusses an experiment in her lab.*

easy to find, or it's presumed that the person you're speaking to knows where it is and can find it," Carlson says, making her results "somewhat surprising."

The next step is to see if these findings translate to a larger environment. In a related experiment, participants fill out packets where they give directions from one campus spot to another. They're also asked to rate the frequency with which they use certain buildings and how easy several landmarks, such as Notre Dame Stadium, are to imagine visually. Carlson plans to look at how often buildings participants pay the most attention to (i.e., those they visit most) and the ones that are particularly notable (the easiest to imagine) show up in their directions.

"If you want to generalize from [the lab] data," Carlson says, "the prediction would be that participants will figure out a path first based on spatial relations that are easy to express, then they will pick out landmarks that fall along the path."

This represents a relatively new line of Carlson's research on spatial cognition, most of which has focused on how we understand spatial terms. It's been theorized that when we process a term like "left," which specifies direction relative to something else, we ignore distance. Similarly, the argument goes,

with a term like "near," which conveys distance, we don't consider direction.

"I think that that's wrong," Carlson says. "If you think about what the purpose of one of these spatial descriptions is, it's to help someone find an object," meaning that both direction and distance are critical.

Using simple diagrams, she has been able to show that when people are asked to verify a statement such as "A is left of B," their response times get faster if the distance

between the two letters stays the same on consecutive trials. In contrast, when the distance changes, participants respond more slowly on a subsequent trial. Tests where distance is constant throughout but direction is manipulated have yielded similar results for terms such as "near."

However, when participants aren't asked to pay attention to the letters' relationship to each other but only identify that "A and B are in the picture," she has found that keeping their relationship the same across trials doesn't lead to shorter response times.

Carlson says the implication is that when we're describing an object's location, we simultaneously encode its direction and distance from a reference object because both pieces of information are relevant to the efficient completion of the task. If, on the other hand, location doesn't matter, we don't process distance and direction, so it makes no difference whether they stay the same.

This summer, Carlson, who was recently named associate chair of the Department, presented her research on this topic in the Netherlands at the Max Planck Institute for Psycholinguistics and the Dutch Endo-Neuro-Psycho Meeting.

## Instant Insight: News and Notes From Around the Department

The Department is home to faculty and doctoral programs in cognitive, counseling, developmental, and quantitative psychology. Here's a quick look at recent highlights in each area.

### Cognitive

- Associate Professor Kathleen Eberhard and colleagues at Indiana University, Arizona State University, and Stanford University were awarded a five-year, \$2.5 million MURI grant from the Department of Defense for their work in human-robot interaction. This research will be used toward creating more natural language interactions between humans and robots working together under time pressure.
- Over the past two years, Associate Professor Brad Gibson has spearheaded collaborations between Notre Dame and South Bend's Madison Center to construct a new ADHD clinic in the city. The clinic opened at the end of August, with Gibson serving as its senior research scientist.
- With the help of a University grant, Associate Professor Chuck Crowell, Research Assistant Professor Michael Villano, and Postdoctoral Research Associate Michael Mangini have established the eMotion & eCognition Lab. The lab studies cognitive and affective phenomena as revealed by dynamic facial expressions and other motor activity as well as how such phenomena can be modeled using artificial cognitive systems.

### Counseling

- After a thorough evaluation, the American Psychological Association (APA) once again gave full accreditation to the Counseling Program. Having earned the distinction for the maximum seven years, the program has been continuously accredited by the APA since 1972. Over the next few years, it will be pursuing similar certification for its newly developed clinical program.
- In a study published in *The Counseling Psychologist*, the program ranked 11th nationally in research productivity as measured by faculty publications in core counseling psychology journals.
- The performance of Counseling's Ph.D. recipients on the national licensing exam—the Examination for Professional Practice in Psychology—recently placed fifth among the 83 counseling programs reported.

- Professor Thomas Merluzzi helped organize "Faith and Health: An Interdisciplinary Conference on the Dynamics of Religious Coping," which was held at Notre Dame last December. The conference brought together scholars in the social sciences, medicine, and theology from across the country and around the world in order to develop integrative scholarship in faith and health.

### Developmental

- Associate Professor Darcia Narváez, executive director of Notre Dame's Center for Ethical Education, received a Spencer Foundation grant for her current book project, *The Science of Virtue: Ethical Expertise for Morally-Engaged Citizenship*.
- Nicole McNeil, an assistant professor who joined the faculty last fall, received a four-year grant from the U.S. Department of Education's Institute of Education Sciences. The grant is in support of her project "Arithmetic Practice That Promotes Conceptual Understanding and Computational Fluency." McNeil published an article related to this research in the May issue of *Developmental Psychology*.
- Graduate student Chrystyna Kouros was awarded a 2007 Elizabeth Munsterberg Koppitz travel stipend from the American Psychological Foundation. "This is a highly competitive award, and it is a great honor for the Department," says Associate Professor Julianne Turner, the Developmental Program's director.

### Quantitative

- Gitta Lubke, John Cardinal O'Hara, C.S.C., Assistant Professor of Psychology, received an R21 grant from the National Institute on Aging to explore advanced statistical methods for assessing differential development over time. The methods she's studying can be applied to data in areas such as mental and physical health, stress, and social support and might help to clarify the interrelations among these factors.
- Lubke also recently won the Cattell Award for Early Career Contributions in Multivariate Research. The Department now has three recipients of this prestigious honor on its faculty, more than any other psychology department in the country.
- Last year, Joe Rausch—the winner of a Shaheen Graduate School Award as Notre Dame's top graduating doctoral degree recipient in the social sciences—earned his Ph.D. and accepted a faculty position in the University of Minnesota's Department of Psychology.

## The Power of Perception: Do You See What I See?

Assistant Professor Alexandra Corning chooses a hypothetical office exchange, but she could have just as easily picked friends watching television or strangers waiting to be seated at a restaurant.

“Two coworkers leave a meeting,” she says. “They stop afterwards in the hallway to exchange reflections about it. One says that he is stunned by the racist behavior of another coworker; the other is surprised at this, having witnessed absolutely no hints of racist bias.”

They sat through the same meeting, saw the same show, dealt with the same restaurant staff. So why the difference of opinion?

“Our contemporary social norms, marked by more gentility than in prior days, mean that prejudiced views come out sort of sideways, versus directly...” Corning says. “Potentially discriminatory behavior is ambiguous, subtle, or nuanced. This makes any snapshot of such behavior wide open to interpretation by observers.”

In describing her research, she stresses that it focuses on uncovering the factors that lead people to perceive behavior as discriminatory, not discerning whether discrimination actually took place. Even so, developing a method to draw out how such perceptions are formed was a challenge, one that intrigued her.

“A supervisor, coworker, or even a friend,” Corning says, “is unlikely to concede, for example... ‘Well, the fact of the matter is, I didn’t see a need to give her more consideration for a promotion, and this is because I am unrelentingly sexist.’”

She and the graduate students in her lab, who are her most frequent collaborators and coauthors, have carefully crafted sets of written scenarios, some of which are ambiguous with regard to the presence of discrimination. Research participants read them and are then asked questions, often by the lab’s undergraduate members, about the scenarios and also about themselves.



*Corning (third from left) meets with members of her research team.*

“We tell them, and we too truly believe,” Corning says, “there are no ‘right’ or ‘wrong’ perceptions.”

Previous work in this area has suggested that observers use their own stereotypes of who the typical sexist or racist is as they attempt to discern whether discrimination has taken place, findings Corning’s research supports.

“But on top of this,” she says, “we’ve found that everyday conditions can influence such perceptions. When people are asked to make such judgments in either a noisy environment

or when under a time pressure, they are even more likely to seize on easy-to-use cues such as sex and race and to draw these conclusions [of discrimination].”

Corning hopes her research will not only add to the scientific understanding of social perception but also benefit people in their daily lives, especially in professional settings. Being sensitive to how someone might perceive an action or remark within a hectic office environment could prevent misunderstandings and promote better workplace relationships.

## Post-Doc Becomes Newest Member of Quantitative F

If psychology’s mission is to explore the ways we think and behave, then people like Guangjian Zhang are the ones developing cutting-edge tools to ensure that mission meets with success.

Kind of like Q in a James Bond movie.

“Many interesting psychological questions require sophisticated quantitative techniques,” says Zhang, an assistant professor who joined the Department’s quantitative faculty this fall. “As our field advances, we psychologists ask increasingly complex questions. Quantitative psychologists are in high demand for developing appropriate techniques for these questions.”

Zhang first studied clinical and social psychology, receiving degrees from

Tianjin Medical University and Beijing University in China. It wasn’t until he went to Ohio State University, where he earned both an M.S. in statistics and a Ph.D. in psychology, that he shifted his focus to quantitative psychology. He came to Notre Dame in 2006–07 as a postdoctoral fellow.

“The quantitative program at Notre Dame is one of the top programs in the country,” Zhang says. “Its faculty members are well-recognized and respected in the field. I am collaborating with them on several ongoing projects. The psychology department as a whole is a congenial place.”

One of the faculty members he has been working with is Ke-Hai Yuan,

## Parenting Adolescents: Gondoli Looks at How Moms Stay in the Know

To paraphrase a proverb, it may take a village to raise a child, but there's no guarantee that everyone in that village will see eye-to-eye on parenting, especially when it comes to adolescents. Just ask Associate Professor Dawn Gondoli.



In 2001, she received a grant from the National Institute

of Mental Health to complete a five-year study of moms and their first-born children as the kids progressed from fourth to eighth grade.

"A theme in the parenting literature is that parenting doesn't change much," she says. "However, I believed that if one made use of more cutting-edge techniques...one might see fairly substantial patterns of change."

An area Gondoli planned to focus on was maternal knowledge—mothers' awareness of their children's activities, whereabouts, acquaintances, and behaviors when not at home—which she says has been consistently

associated with positive outcomes for kids and the parent-child relationship.

Around the same time, Swedish researchers began publishing studies indicating that firm parenting might not be the best way for moms to stay informed and that they should instead focus on building warm relationships with their children, a claim that caused some controversy.

"The Swedish folks saying that control wasn't important for knowledge seemed to many like an attack on authoritative parenting, or a recommendation for permissiveness, something which American parenting researchers do not endorse," Gondoli says.

It was in this climate that she and her team initiated their study. She started with 181 mother-child pairs, and 162 completed the full five years. Once a year, they would come to her lab, where they would fill out surveys separately and be videotaped together while discussing issues that had recently caused conflict between them.

Using advanced statistical methods, Gondoli found that maternal knowledge usually exhibited "a modest but significant decrease" as kids went through

adolescence. She calls this a "normative" change that doesn't tend to have an adverse effect on mother or child.

"It is important to document just how knowledge may change during the transition to adolescence," she says, "and we seem to be the only researchers in the country and internationally who have data that can describe this over this particular period."

As for whether being strict maintains maternal knowledge?

"Our results are actually more consistent with the Swedish researchers," Gondoli says. "We have found that mothers' warmth toward their children and the emotional cohesion and closeness of the mother-child relationship is a much more important predictor than is mothers' firm control."

But while her study doesn't make a strong case for strict parenting, Gondoli doesn't feel it points to a hands-off, "kids-will-be-kids" approach, either.

"This might reflect my training as an American parenting researcher, but I find it hard to dismiss control entirely," she says, noting that the way her team measured control was "a bit extreme." Most of the moms who had healthy relationships with their kids were quite firm even if they weren't considered "strict," making it difficult statistically to isolate the effect of control.

"Also, just because control didn't emerge as consistently important as warmth," Gondoli says, "that does not mean that a history of structure, limits, supervision, and hierarchy in the family isn't important to later knowledge."

Gondoli has coauthored several papers based on this research with current and former graduate students Darya Bonds, Amber Grundy, Elizabeth Blodgett Salafia, and Melissa Sturge-Apple. One was recently published in the *Journal of Family Psychology*, and two others have appeared in *Parenting: Science and Practice*.

## Faculty

O'Neill Associate Professor of Psychology and a past recipient of the prestigious James McKeen Cattell Fund Fellowship.

"We are fortunate to hire Guangjian," Yuan says. "His joining us will strengthen our efforts to train our quantitative students. His research will bridge the research interests of our current faculty."

Zhang specializes in factor analysis, structural equation modeling, and models for longitudinal data. For his dissertation, he used a computer-intensive procedure known as the "bootstrap" to analyze data gathered from respondents who fill out the same questionnaire multiple times, such as in a longitudinal study, a situation where he says usual statistical methods fail.

He recently received the Distinguished Dissertation Award from Division 5 of the American Psychological Association.

This semester, Zhang is teaching a graduate-level methodology class. Though he isn't showing his students how to make gadgets for 007, he does have a clear idea of what he wants to accomplish in the classroom.

"As a teacher, my primary goal is to provide graduate students with methodology trainings so they can design and analyze complex studies using state-of-the-art techniques. I hope that my class will be both illuminating and entertaining."

## Undergraduate Research Leads Verney to Graduate School

The Department of Psychology has one of the most extensive undergraduate research programs at Notre Dame, with over 220 students involved in faculty labs last year alone.

To see the impact of this hands-on approach to learning, you need look no further than 2007 graduate Alissa Verney,

winner of the John F. Santos Award for Distinctive Achievement in Psychology, the Department's highest undergraduate honor.

"It was honestly through my research experience that my gratitude to Notre Dame itself grew the most," says Verney, who worked with Professor Cindy Bergeman, the Department's chairperson. "Everyone involved in Dr. Bergeman's lab gave me incredible support."

Growing up, Verney was always intrigued by why people think and act the way they do. That interest continued to develop through high school and motivated her to take an introductory course in psychology during her first semester at Notre Dame.

"I left psychology class continuing to wonder about the topics discussed," she says, "and I was excited at the thought of a career spent immersed in such issues."

For her senior honors thesis, Verney studied perceptions of emotion control in older adults. She says that the more people perceive they control their emotions, the better they handle stress. Taking that as her starting point, she tested the Perceived Control of Internal States Scale (PCOISS), a measure developed by Julie Pallant of Swinburne University of Technology. Verney found the PCOISS to be reliable, with respondents who registered a strong belief in their ability to control their emotions also exhibiting high degrees of life satisfaction, positive affect, self-esteem, optimism, and mood clarity.

She credits Bergeman, as well as graduate students Stacey Scott and Mignon Montpetit and postdoctoral fellow Brendan Baird, with guiding her as she completed her thesis.

"My research experience at Notre Dame was wonderful, and through it I realized research in psychology was the right path for me."

This fall, Verney started the Department's doctoral program in developmental psychology. She isn't the only one who's excited about her continuing her studies at Notre Dame.

"Alissa is clearly motivated and devoted to scholarship," Bergeman says. "She has made important contributions to multiple projects and is a very engaged and contributing member of the lab. In fact, I think of her as the graduate student that she has already become."

### Incoming Graduate Students, Fall 2007

#### Cognitive

##### Sabine Krawietz

M.A., University of West Florida (2007)

B.A., University of West Florida (2004)

##### Margaret McNerney

B.A., University of California, Davis (2003)

#### Counseling

##### Ann Flies

B.A., University of Notre Dame (2007)

##### Jeremy Montemarano

B.A., University of Notre Dame (2002)

##### Goal Auzeen Saedi

B.A., Portland State University (2007)

#### Developmental

##### Lori Petersen

B.A., Indiana University Bloomington (2007)

##### Alissa Verney

B.A., University of Notre Dame (2007)

#### Quantitative

##### Chun-Ting Lee

B.S., National Taiwan University (2003)

## Graduate Student Wins Research Award

Carolyn Heitzmann, a graduate student in the Department's Counseling Program, recently received the Student Research Award from the health section of the Society of Counseling Psychology, a division of the American Psychological Association. Selected from a national pool of candidates, she was honored for a paper based on a project she completed during her first year at Notre Dame.

In the paper, she discusses that for people who have cancer, support from others, such as family, friends, or more formalized providers, may not always be beneficial.

"My research suggests there might be an 'optimal match' of social support for cancer patients," says Heitzmann, who earned her undergraduate degree from Penn State University. "Patients who need support and don't receive it fare more poorly than those who need it and receive it. Conversely, patients who do not need support but do receive it fare more poorly than those who do not need support and don't receive it... [T]here was a clear interaction between actual social support and physical debilitation."

As part of the Department's Laboratory for Psycho-oncology Research, Heitzmann teams with Professor Thomas Merluzzi and others to study the psychological aspects of coping with cancer. Merluzzi is one of the creators of the Cancer Behavior Inventory, a questionnaire designed to measure the self-efficacy, or confidence, that patients have in their coping abilities.

"Over the course of the last several years, we have collaborated with other psychologists, physicians, and medical professionals and have been in contact with hundreds of cancer patients," Heitzmann says. "My interest in psycho-oncology research continues to grow with each project and with each contact

in the community and in the field."

Under the guidance of Merluzzi, Heitzmann is also looking at health disparities among different ethnic groups and issues related to the measurement of psychological data. The opportunity to work with him was one of several deciding factors when it came time to choose a Ph.D. program.

"It was clear from my contact with others in the field and faculty in the Department that there was a strong emphasis on research at Notre Dame," Heitzmann says. "I was also aware of the fact that the program had both counseling and clinical faculty on staff and that I would get good training in both science and practice."

## Passing the Torch: Pope-Davis Succeeds Linney as VP and Associate Provost



Professor Don Pope-Davis was recently elected vice president and associate provost by Notre Dame's Board of Trustees. Formerly the dean of the Graduate School, he succeeds Jean Ann Linney, also a professor of psychology, who accepted an appointment as dean of the School of Social and Behavioral Sciences at the University of Alabama at Birmingham.

In his new position, Pope-Davis is responsible for leading and managing the Provost's Office's involvement in the faculty recruitment and hiring process, tenure and promotions procedures, mentoring programs for faculty, and the creation and administration of new programs to help prepare faculty leaders to carry out administrative tasks.

Coordinator of the University's Multicultural Research Institute, Pope-Davis specializes in multicultural psychology, counseling, and education. Specifically, he is interested in cultural and racial identity development as well as cultural competency training, development, and assessment. Other areas of research include multicultural supervision in professional psychology, development of multicultural measures for assessing environments and supervision, issues of mental health of people of color, and cross-cultural communications.

Pope-Davis is the coauthor of three books, most recently the *Handbook of Multicultural Competencies in Counseling and Psychology*. He has published extensively in journals and books in the field and is a research fellow of the American Psychological Association.

# INsight

inside this issue:



- *Taking Spatial Cognition in a Different Direction*

p. 1

- *Research Funding Reaches New Heights* p. 1
- *Instant Insight: News and Notes From Around the Department* p. 3
- *The Power of Perception* p. 4
- *Post-Doc Becomes Newest Member of Quantitative Faculty* p. 4
- *Parenting Adolescents* p. 5
- *Research Leads Verney to Graduate School* p. 6
- *Graduate Student Wins Research Award* p. 7
- *Pope-Davis Succeeds Linney as VP and Associate Provost* p. 7

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