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APA's Capitol Hill Exhibit Showcases NSF-Funded Research

by Heather Kelly

TABLE OF CONTENTS

APA's Capitol Hill Exhibit Showcases NSF-Funded Research 1

Science Briefs: **New Directions in the Study of Children's Memory for Stressful Events** by Jodi A. Quas and Cathy Hayakawa 2

Executive Director's Column: **Gearing Up** 7

From the Science Student Council: **See YOU in August!** 9

Early Summer Advanced Training Institutes Are Popular – More To Come 10

Laboratory Animal Research News 11

Getting a Head Start for Graduate School 12

Dr. David Krantz, APA's presenter, discusses his research with Dr. Michael Holland (Office of Management and Budget) and Rep. Vern Ehlers (R-MI, Ranking Member of the House Science & Technology Committee).

Each year APA's Science Directorate co-sponsors the Coalition for National Science Funding (CNSF) Capitol Hill Exhibit and Reception, an event that showcases the broad range of research funded by the National Science Foundation (NSF). Our APA presenter at the June 2008 event was David Krantz, PhD, from Columbia University's Center for Research on Environmental Decisions. The center's interdisciplinary team is undertaking a number of research projects in the United States and around the world, both in laboratory and real-world settings, to investigate how human decision-making (by individuals, small groups and organizations) is related to adaptation to climate-related uncertainty and mitigation of climate change. APA's Science Government Relations staff coordinated the evening's presentation, which provided an opportunity for Dr. Krantz to highlight NSF's behavioral science portfolio and discuss his own team's innovative research with Members of Congress, including Reps. Vern Ehlers (R-MI), Rush Holt (D-NJ), Jim Moran (D-VA), and David Price (D-NC). ■

"Scientists' Guide to the APA Convention" now available!

The initial compilation of the popular "Scientists' Guide" is now on the Science Directorate website. More on page 8.

SCIENCE BRIEFS

New Directions in the Study of Children's Memory for Stressful Events

by Jodi A. Quas and Cathy Hayakawa, University of California, Irvine

Jodi Quas is Associate Professor in the Department of Psychology and Social Behavior at the University of California, Irvine. She received her Ph.D. in 1998 from the University of California, Davis, and completed postdoctoral training at the University of California, Berkeley. Her work focuses on memory development and children's involvement in the legal system. She has addressed important questions regarding how stress affects children's memory, children's suggestibility, consequences of testifying in court on children, and children's emerging testimonial competence. She has received numerous awards for her research, including the 2008 APA Award for Scientific Early Career Contributions in Developmental Psychology and the 2008 APF's Robert L. Fantz Memorial Award.

Cathy Hayakawa received dual B.A. degrees in Psychology and Criminology and an M.A. in Social Sciences from the University of California, Irvine. Her research interests concern the influence of family dynamics on young children's social relationships and academic achievement. She has also been collaborating on a series of studies investigating social contextual influences on children's memory development. In the fall, she will begin pursuing her Ph.D. in Child Psychology at the Institute of Child Development, University of Minnesota Twin Cities, on a Graduate School Fellowship.

The scientific study of children's memory for stressful events carries numerous theoretical and practical implications. Theoretically, knowledge concerning how stress affects memory provides insight into the role that emotions and emotional regulation play in cognitive development, and into the development of narrative and autobiographical processes. Practically, how stress affects memory is relevant to evaluating child witness credibility, children's coping with trauma, and trauma-related psychopathology (e.g., post-traumatic stress symptoms) in development. During the past two decades, numerous studies have investigated how well children remember stressful, salient personal experiences. Unfortunately, results have been mixed: Some studies suggest that stress enhances memory (Alexander, Goodman, Schaaf, Edelstein, Quas, & Shaver, 2002), whereas others suggest that stress inhibits or is unrelated to memory (Chen, Zeltzer, Craske, & Katz, 2000; Eisen, Qin, Goodman, Davis, 2002; Merritt, Ornstein, & Spicker, 1994). At least some of the inconsistencies may be due to different types of to-be-remembered events (e.g., medical procedures versus laboratory tasks) having been studied, to variations in how distress was measured (e.g., self-report, observer report), and differences in the ages of the child participants.

In a recent series of studies, we have begun controlling for these variations. We have been studying children's memory for a laboratory procedure, the Trier Social Stress Test (TSST; Kirschbaum, Strasburger, & Langkrar, 1993), an acute stressful personal experience that involves giving a speech and completing a math task in front of two unfamiliar "scientists." Because the TSST is standardized and takes place in a laboratory, we have considerable experimental control over what happens, and we can collect multiple measures of children's distress before, during, and after the TSST takes place. We can also modify specific features of the TSST (i.e., at encoding) and the memory interview (i.e., at retrieval) to vary the level of stress associated with each experience. These modifications allow us to examine how stress at encoding and retrieval each affect children's memory. Finally, our studies include children across a wide age

range, enabling us to evaluate how the associations between stress and memory vary developmentally. Next we explain, in greater detail, the rational underlying our approach.

Measuring Distress

Across stress and memory studies, "stress" has been measured using a variety of approaches. In some studies, children's self-reported distress was documented (e.g., Chen et al., 2000; Merritt et al., 1994). In others, parents or observers (e.g., nurses or researchers) rated children's distress either during an event or retrospectively (Eisen, Goodman, Qin, Davis, Crayton, 2007; Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997; Peterson, 1999; Quas, Goodman, Bidrose, Pipe, Craw, & Ablin, 1999). Still in others, distress was coded according to children's proximity to damage or threat that resulted from a negative event (e.g., Fivush, Hazzard, Sales, Sarfati, & Brown, 2003; Pynoos & Nader, 1989). Finally, in a few studies, children's physiological responses were recorded (e.g. Chen et al., 2000; Merritt et al., 1994). The different measures of distress were often unrelated or only minimally correlated statistically (e.g., Merritt et al., 1994; Quas, Hong, Alkon, & Boyce, 2000), suggesting that they were tapping into different aspects of children's responses to stressful events.

In our research, we have focused on children's physiological responses as potential predictors of memory. Given that even relatively young children can mask some expression of emotion (e.g., Cole, 1986; Davis, 1995; Quas et al, 2000), we sought to examine distress via indices that were not easily amenable to volitional control. Of importance, however, we have gone beyond collecting a single, discrete measure of physiological arousal. That is, when exposed to a stressor, multiple physiological systems (the sympathetic, parasympathetic, and hypothalamic pituitary adrenal axis [HPA]) may respond. And, although the various systems' responses may be well-coordinated at a neurological level, they are often unrelated statistically and have different implications for memory. As a result, our investigations of stress and memory have increasingly taken into account multiple types of physiological stress responses.

For example, in two initial studies, we examined the links between both sympathetic activation and parasympathetic withdrawal and children's memory (Quas, Bauer, & Boyce, 2004; Quas, Carrick, Alkon, Goldstein, & Boyce, 2006). In one of the studies (Quas et al. 2004), we also measured salivary cortisol (a marker of HPA activation). Children completed a series of laboratory challenges that ended with a brief fire alarm sounding. Shortly afterward, children were interviewed about what happened. Sympathetic and parasympathetic responses were monitored throughout the laboratory challenges, and salivary cortisol was measured before and after the event. Sympathetic activation (i.e., sympathetically driven arousal) during the laboratory challenges was associated with enhanced memory in one study. In contrast, parasympathetic withdrawal (i.e., parasympathetically driven arousal) was associated with poorer memory in both studies, with these associations being stronger in older than younger children. Finally, larger cortisol responses to the laboratory challenges were associated with enhanced memory for the alarm.

Our initial findings are consistent with theoretical interpretations concerning the physiological systems' functioning. Activation of the sympathetic system, commonly known as the "fight or flight" response, leads to increased blood flow to the cardiac and muscular systems and release of epinephrine, which together mobilize resources that enable an individual to respond to the threat. Theoretically, in order to determine how best to respond (i.e., whether to fight or take flight), attention should be directed towards the threat, and enhanced attention should improve memory. Parasympathetically driven arousal results from the parasympathetic system withdrawing its regulatory influences on target organs to divert resources required to respond to the threat, recover, and return to baseline (homeostatic functioning) afterward. Because resources must focus on internal self regulation, fewer are available to attend to and process external event information, which may reduce memory. Finally, activation of the HPA axis results in the release of glucocorticoids, the most important of which in humans is cortisol. High concentrations of glucorticoid receptors are located in brain regions involved in all aspects of memory. Insofar as HPA activation via glucocorticoid release increases activation in these brain regions, improved recall may result.

Despite our studies' results fitting with these theoretical perspectives, findings remain tentative for several important reasons. For one, our findings emerged in at most two studies. One sample was small and included a restricted age range (4- to 6-year-olds; Quas et al., 2004). At the same time, the other study suggested that age may be an important moderator of the effects of parasympathetic withdrawal on children's memory. Accordingly, research with larger samples of children across a wider age range is clearly needed. Also, in our studies, only some children exhibited increased physiological arousal to the laboratory challenges, and the magnitude of their responses was often quite small. A to-be-remembered event that reliably elicits stress responses, but is also controllable and ethical to study, is necessary to better understand how physiological stress responses relate to memory. Finally, in our initial studies, children's memory was tested shortly after the alarm took place. It is possible that children were still aroused from the laboratory challenges and alarm while being interviewed. Children's arousal during the memory interview, even if only moderate, may have affected their performance, independent of how distressing the actual to-be-remembered event was

(Nathanson & Saywitz, 2003). To test such a possibility, it is necessary to take into account both arousal at encoding and retrieval when studying children's memory and determine how each, directly and in conjunction with the other, relates to memory.

Arousal at Encoding Versus Retrieval

Findings from two separate studies indeed suggest that arousal at encoding (i.e., during a to-be-remembered event) and retrieval (i.e., during an interview) are differentially related to children's memory. In Quas et al. (2004), in addition to interviewing children about the alarm shortly after it took place, as just described, we also interviewed children two weeks later. In the latter interview, we asked children about their entire initial visit (not just the alarm). We also experimentally manipulated the interviewer's demeanor to create a more and less stressful interview context. In the high stress context, the interviewer behaved in a cold, emotionally unavailable manner. She did not maintain eye contact or smile. Nor did she provide verbal or non-verbal encouragement. In the low stress condition, the interviewer maintained a positive warm stance. She smiled, provided positive feedback, and maintained eye contact during the interview.

Children with larger autonomic stress responses (collapsed across the sympathetic and parasympathetic systems) during the laboratory challenges displayed poorer memory in the high stress interview condition, but better memory in the low stress interview condition (Figure 1). Memory performance among children with smaller autonomic stress responses, however, was unaffected by the interview condition manipulation. We speculated that children who were particularly aroused during the laboratory challenges (i.e., at encoding) were also more aroused during the high stress interview, and that the high arousal experienced during the interview then inhibited children's memory. In other words, when under stress during an interview, it may have been difficult for children to conduct a memory search regarding what happened during their previous visit. Of interest, in the low stress interview condition, children who had been highly aroused during the laboratory challenges performed as well as children who had been less aroused during the tasks. Accordingly, it was not that the highly aroused children had failed to adequately encode the original event (because they performed quite well in the low stress interview condition). Instead, in the high stress memory interview, the formerly aroused children were unable

Figure 1

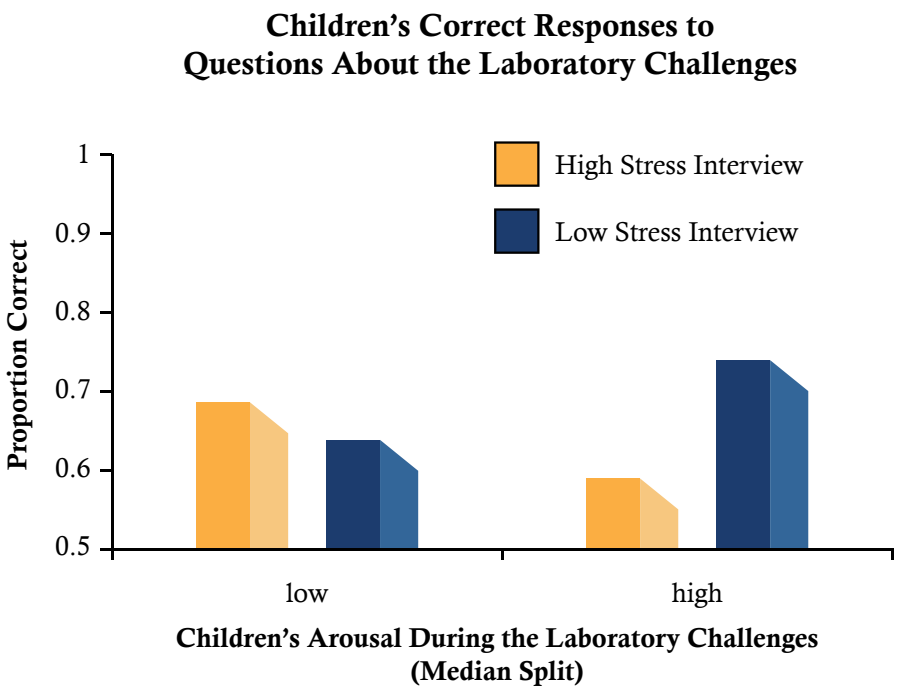
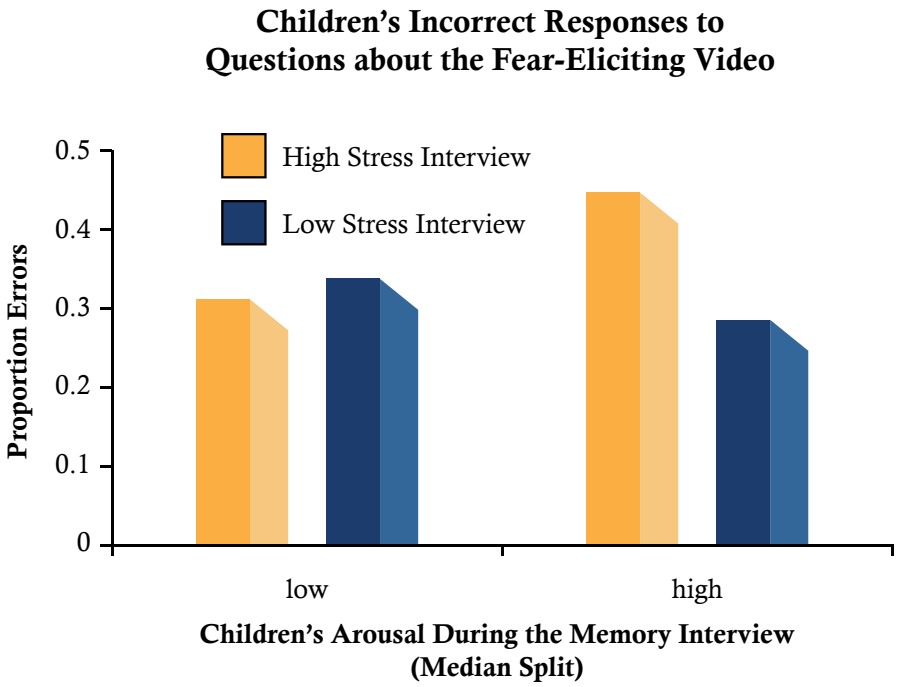


Figure 2



(or unwilling) to conduct a memory search and answer questions.

Unfortunately, we did not actually measure children's arousal during the memory interview in the study, making our interpretation regarding retrieval distress effects only tentative. However, in another study, we collected measures of arousal at both encoding and retrieval (Quas & Lench, 2007). Five- and six-year-olds came to our laboratory twice. In the first visit, they watched a fear-eliciting video. In the second visit, which took place a week later, their memory for the video was examined. During both the video and memory interview, children's heart rates were monitored (heart rate is considered a peripheral measure of autonomic arousal; increases may be caused by sympathetic activation, parasympathetic withdrawal, or both). Again, the memory interview was conducted in either a low or high stress manner. Greater arousal while watching the video (i.e., at encoding) was associated with enhanced memory, whereas greater arousal during the interview (i.e., at retrieval) was associated with poorer memory, as reflected in increased errors when the interview was conducted in the high stress manner (Figure 2). In the low stress interview condition, retrieval arousal was unrelated to children's memory.

Together, although our studies' approach and samples varied, initial findings are suggestive of several intriguing and theoretically important associations between physiological arousal and memory. Arousal at encoding, especially as driven by the sympathetic system and HPA axis, may enhance memory. In contrast, arousal at retrieval, particularly that associated with parasympathetic withdrawal and perhaps caused by a stressful interview context, may inhibit memory (or at least memory performance).

Conclusions

Despite a relatively small number of studies examining physiological responses as predictors of children's memory for stressful personal experiences, initial findings support the importance of continued research in this domain. We have launched a series of studies with such a focus in mind. In our studies, we have selected a to-be-remembered event that reliably elicits physiological stress responses (e.g., Dickerson & Kemeny, 2004; Federenko, Nagamine, Hellhammer, Wadhwa, & Wüst, 2004), specifically the Trier Social Stress Test (TSST; Kirschbaum et al., 1993). We modified the TSST to create both low and high stress conditions. During the TSST, we are collecting multiple measures of distress (e.g., physiological, behavioral, self report). We are also including children across a wide age range, given preliminary evidence from our and others' studies suggesting that the associations between stress and memory may vary developmentally (Bugental, Blue, Cortez, Fleck, & Rodriguez, 1992; Quas, Carrick, Alkon, Goldstein, Boyce, 2006; Vaandermaas, Hess, & Baker-Ward, 1993). Finally, as in our previous work, we are manipulating stress not only at encoding (during the TSST), but also during the memory interview, thus enabling us to continue to disentangle the effects of stress at encoding and retrieval on children's memory performance.

In closing, scientific research concerning children's memory for stressful events has expanded considerably in the past two decades, and numerous exciting, innovative studies have been conducted. However, the variable results remain difficult to reconcile, in part because of methodological differences across studies. Recently, research has revealed several promising new directions for continued investigations of this important topic, one of which is reflected in our program of research. The results of our ongoing studies will contribute valuable, much-needed knowledge concerning precisely how stress likely affects children's memory. Once these mechanisms are better elucidated, they can then be tested in relation to children's memory for stressful personal experiences beyond those that occur within the confines of laboratory settings. Overall, our new research, along with that of other scientists, will enable a clearer, but likely complex, answer to the critical question, "How do children remember stressful events?" ■

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Announcing the Husted Memorial Dissertation Award for Mental Illness Services Research

The American Psychological Foundation and APA's Science Directorate invite proposals for the 2008 Todd E. Husted Memorial Dissertation Award. This $2,000 award supports dissertation research on mental illness services with great potential to improve services for those with severe and persistent mental illnesses, by, for example:

- Developing interventions that prevent deterioration, homelessness, and premature deaths of those with serious mental illness.
- Improving the medication and treatment compliance of those with schizophrenia and bipolar affective disorder.
- Improving the identification, diversion, and treatment of people who enter the criminal justice system as a result of their mental illness.
- Educating professionals in the criminal justice system about the role of serious mental illnesses in the behavior of mentally ill offenders.
- Increasing access to and use of services and support for the most treatment-resistant and severely mentally ill individuals.

The application deadline is September 15, 2008. Applicants for the Husted Award must meet the same eligibility requirements as applicants for the APA Dissertation Research Awards, and application packets must be received by the Science Directorate by September 15. Applications will be reviewed by a panel of experts on serious mental illnesses. For more information, please visit: www.apa.org/science/dissinfo.html.

EXECUTIVE DIRECTOR'S COLUMN

STEVEN BRECKLER, EXECUTIVE DIRECTOR FOR SCIENCE

Gearing Up

Presidential elections create interesting and important opportunities for scientific disciplines. The campaigns bring into focus issues and concerns on the minds of citizens. They bring out the good – and the bad – in discourse, rhetoric, proposals, and plans. They create a media frenzy, elevating the attention we normally pay to social and economic issues. Yet, it is the chaos and uncertainty that provides opportunity for science.

Inevitably, the campaigns will focus on problems and challenges for which science offers insight, answers, and hope. And because the issues during this era tend to focus predominantly on societal challenges, the opportunity is there for social and behavioral science to step forward.

Consider the challenges we face, as a society, in the area of health care. Decades of investment in biomedical and behavioral health research translate into longer, healthier lives. Yet, as we look ahead we can anticipate several challenges that the next President will need to address.

A huge challenge will center on disparities in health care. Despite the tremendous advances produced by research, the truth is that those benefits are not distributed equally across the diversity of our society. Some racial and ethnic groups derive greater benefit than others. The wealthy among us have access to all the advances, the poor have access to few. Ironically, the older among us are not always the beneficiaries of advances in health care.

We know that such disparities exist. The data are unequivocal. The challenge for the next President will be to do something about it. That's where the opportunity lies for psychological science. More than any other scientific discipline I know, psychology is uniquely poised to produce insight and develop solutions for disparities in health care.

Research in social psychology, community psychology, health psychology, clinical and counseling psychology, consumer psychology, industrial and organizational psychology – it all bears on understanding and reducing the disparities. And psychology can do more than any other field in translating the basic science into interventions that work.

Another significant challenge will center on the consequences of people living longer. We aspire to longer lives that are also healthy and vital lives. The miracles of modern medicine have helped us to live longer, but they have not necessarily helped us to maintain happiness and vitality in our advancing years. It is psychology – not medicine – that offers insight and interventions to prolonging vitality in aging.

Research in cognitive psychology, human factors, geriatric psychology, along with all the other subfields I mentioned above will contribute insight and offer solutions. As the population of older Americans grows, the next President is well advised to learn from psychology how best to serve the needs of this constituency.

The challenge that concerns me the most is global climate change. Despite the naysayers and cynics, the best and brightest of the scientific community know that climate change is here. It is the result of human activity, and changing human behavior is the only sure way to modify the path we are on. The next President will surely need to take this challenge seriously, and focus significant scientific resources to it.

Although many scientific disciplines bring important insight to the table concerning climate change, the one that is most relevant and most central is psychology. After all, it is behavior that we need to change. And psychology is the science of human behavior.

The challenge for scientific psychology is to assert its relevance and make itself known to the next President. Future policy will be shaped by the White House, and the federal agencies of the executive branch will follow the President's lead. This includes the funding priorities of the National

Science Foundation, the National Institutes of Health, the Department of Energy, and the Department of Education. No matter who occupies the White House next year, psychology must be recognized as a welcomed advisor.

How do we accomplish this? Our professional societies must step up. APA is already doing this. President Alan E. Kazdin's initiatives highlighting psychology's contributions to the grand challenges of society help to call attention to what we have to offer. APA's Science Government Relations Office works these issues every day.

Yet, it takes a community to succeed. Every one of us bears some responsibility for getting psychology to the table. Rather than standing on the sidelines, wishing for things that may or may not happen, the time for action is now and the responsibility rests with you. Look for ways to make your discipline known to the next generation of leaders. Find ways of connecting the science of psychology to the challenges of society.

These are things we should be doing all the time. A Presidential election creates a special opportunity to renew our efforts. Let's gear up now, so that 2009 marks the beginning of a new era in which society turns to psychology for help and solutions. ■

Applications Invited for the 2008 APA Dissertation Research Awards

To assist science-oriented doctoral students of psychology with the costs of conducting dissertation research, the American Psychological Association Science Directorate sponsors an annual competition for funding. This award program features 30-40 grants of $1,000 each, and several larger grants of up to $5,000. Projects in any area of psychology are eligible. Funds may be requested for expenses that are directly related to the dissertation research such as participant incentives, animal care, and equipment.

Awards are provided to students whose dissertation research reflects excellence in scientific psychology. Each department of psychology may forward up to three applications per year for consideration for this award program. In order to be eligible for an award, by the application deadline students must have had their dissertation proposals approved by their dissertation committees but must not yet have received their doctoral degree. Award recipients will be listed in an upcoming issue of *Psychological Science Agenda*.

The deadline for Dissertation Research Award application packets to arrive at the Science Directorate is **September 15, 2008**. Complete information about this exciting opportunity can be found at: www.apa.org/science/dissinfo.html.

"Scientists' Guide to the APA Convention" now available!

The initial compilation of the popular "Scientists' Guide" is now on the Science Directorate website. Thanks to the many Division program chairs who provided us with highlights from their division's programming, the electronic version of our Guide is ready to review now! There will be a few tweaks here and there before the printed version is ready for distribution, but the basics are there for your use in planning your trip to Boston. Visit www.apa.org/science/conv08guide.html for the first look at the Guide.

In addition to tons of information about Division programs, the Guide features listings of Presidential programs, plenary sessions, scientific award addresses, and dozens of other sessions that will be of significant interest to the science community.

Paper copies of the Guide will be available at the Science Directorate booth at the APA Convention (APA Resources area near the Registration desk at the Convention Center).

From the Science Student Council

The Science Student Council is a group of nine graduate students who spend a couple of weekends a year with the Science staff, advising on programs and activities that would benefit graduate students in psychological science. In this column, the students will present useful information that other graduate students need to know! Visit the Science Student Council page (www.apa.org/science/apasscweb.html) to learn more about the activities of the SSC.

Back row - Suzanne Dean, Felix Thoemmes, Abby Adler, Gloria Luong, and Stanley King
Front row - Camilla Hileman, Jennifer Brielmaier, Lisa Jaremka, and Marc Berman (chair)

See YOU in August!

By Camilla Hileman

Are you a graduate student? Are you interested in research? Are you attending the APA Convention in August? If you answered "yes" to these questions, then you are in luck! The Science Student Council has designed FOUR convention sessions especially for YOU! Be sure to check out the following sessions:

What I Wish I Had Known – A Guide for Graduate Students
Friday, August 15, 10:00-10:50 am
Whether you're a first-year graduate student or a fifth-year graduate student, this session will offer helpful advice on how to avoid those grad student blues! Learn the insider tips on successfully surviving graduate school from your first research project to your first "real world" job! Think no one else has encountered the grad student predicaments that you've encountered? Think again! Our panelists have seen it all! At this session, Jennifer Perry from the Minneapolis Medical Research Foundation, Deborah Boehm-Davis from George Mason University, and Michael Edwards from Ohio State University will share their own grad school words of wisdom!

Psychological Science Graduate Superstars – Datablitz
Saturday, August 16, 2:00-2:50 pm
Could you explain your master's thesis in two minutes? Better yet, could you describe your dissertation in a mere 120 seconds? Perhaps we couldn't … but the graduate students in this session can! Back by popular demand, the SECOND annual Datablitz gives APA's burgeoning scientists an opportunity to present their own research to a captive audience – provided they take on our "2 slides, 2 minutes" challenge! The energy and enthusiasm of this session is contagious – even the most weary conference goer will be caught up in this whirlwind of presentations! With a diversity of student research interests and perspectives, this session truly offers something for everyone.

Flaunt Your Science
Saturday, August 16, 3:00-3:50 pm
Have you ever tried describing your research to your Grandma – only to be met by a blank stare? If so, then this session is for you! Learn how to "flaunt your science" and turn that hundred-page dissertation into a short, grandma-accessible vignette! Have you seen an article on autism featured in a popular magazine? Or a headline about depression in your local newspaper? Ever wonder why someone else's research makes the headline – but not yours? With the help of Jonah Lehrer from Seed Magazine, Kathleen Pierce from the Department of Defense, and Heather O'Beirne Kelly from the APA Office of Science Policy and Governmental Relations, learn how to make your research accessible to a lay population and how to disseminate your research findings beyond academia. Don't let your dissertation be filed away on the back shelf of your school library – instead, take out that dissertation, dust it off, and flaunt it!

Show Me the Money – Grant Writing Basics for Graduate Students
Saturday, August 16, 4:00-4:50 pm
If you're on the Ramen noodle grad student budget, then this session is for you! Learn how to apply for and receive an NIH or NSF fellowship or grant. Ramen dinners can become a thing of the past – or at least not an everyday occurrence! Whether you're tackling your first grant application or trying to make sense of a revise and resubmit request, this session will provide you with the behind-the-scenes information of how grants are reviewed and how grants should be written. Panelists Leonard Jason from DePaul University and Betty Tuller from the National Science Foundation will guide you through the grant-writing maze!

When you're not attending THESE great convention sessions, enjoy everything else that the APA Convention offers! Be sure to stop

by the Science Directorate's table to pick up their handy-dandy guide of research-oriented presentations – a great way to narrow down the many exciting convention options! Also, don't forget about the 2008 Presidential Programming, which focuses on hot-topic issues including interpersonal violence, PTSD and trauma in children and adolescents, and hate crimes. Prominent speakers, such as **Malcolm Gladwell** and **Edward Zigler**, will be featured at the Convention...so don't miss out! Last but not least, enjoy Boston and all that this historical city has to offer! See YOU in August! ■

Early Summer Advanced Training Institutes Are Popular – More To Come

by Nicolle Singer

The first three of the five Advanced Training Institutes taking place this summer are now complete! Seventy six psychologists and advanced graduate students took part in these exciting training institutes sponsored by the APA Science Directorate. Participants arrived for their week of intense study ready to hit the ground running. Before each course began, they received a list of recommended readings and a short biography of each participant. After traveling far and wide, participants settled into the APA-reserved hotels the day before the start of each course on Monday morning.

The first two events of the summer took place in early June. The University of Virginia was once again the site of the popular ATI on "**Structural Equation Modeling in Longitudinal Research**" (June 9-13). All participants were currently using SEM in their research or had firm plans to begin using these methods, so interest was intense and questions flowed freely. The workshop included classroom lectures, demonstrations, and lab time with instructors ready to answer individual questions. Dr. Jack McArdle began the seminar by providing an in-depth overview of the principles and practice of SEM, before he and the other instructors moved on to increasingly advanced topics. Participants were encouraged to bring along their own data and research problems to the ATI, and have reported that the hands-on nature of this program was very beneficial. Psychologists must often rely upon written text in order to learn new statistical methods, but having instructors ready to help greatly expedites the learning process.

The second ATI of the summer on "**Non-Linear Methods for Psychological Science**" (June 9-13) was also well-received. The University of Cincinnati hosted this ATI, which provided a thorough introduction to a variety of non-linear and dynamical methods. Such methods are becoming increasingly prominent within psychology and related disciplines. Specific topics included time series analysis, recurrence quantification analysis, fractal analysis, and dispersion analysis. In addition to lectures and discussion, there was ample hands-on computer time in which participants practiced using the software that was distributed at the program. During one lab session each participant generated their own reaction time data, which was then analyzed for nonlinear structure later in the week.

A new ATI was held on June 23-27 on "**Research Methods with Diverse Racial & Ethnic Groups.**" Michigan State University's Center for Multicultural Psychology Research hosted this exciting program, which drew an eager group of researchers interested in learning the best ways to conduct sensitive and appropriate research with diverse populations. The nine expert instructors were able to discuss the specifics of their areas of expertise during lectures as well as formal and informal discussion sessions. Dr. Fred Leong began the week by discussing methods for investigating treatment outcomes in diverse populations. Sessions followed during the week on topics such as quantitative and qualitative methods, the why's and why-not's of web-based data collection, measurement equivalence and invariance across diverse groups, and methods for work in areas ranging from genomics to HIV prevention.

The Science Directorate looks forward to building upon the success of these early programs with the final two ATIs that it will sponsor in 2008: "**Geographic Information Systems for Behavioral Research**" (University of California, Santa Barbara, July 16-18) and "**Using Large- Scale Databases: NICHD Study of Early Child Care and Youth Development**" (University of North Carolina, August 4-8).

To learn about the other ATIs planned for this summer, visit the website (www.apa.org/science/ati.html) or contact us by email (ati@apa.org). The line-up of ATIs for each summer is announced in December of the preceding winter, so be sure to check back at the website and stay tuned to PSA for announcements! ■

Laboratory Animal Research News

by Sangeeta Panicker

FARM BILL UPDATE: Worrisome Amendments Dropped from Final Legislation

The long-delayed 2008 Farm Bill is finally law. On June 18, with overwhelming majorities, the House of Representatives and the Senate voted to override President Bush's veto of the Farm Bill (H.R. 2419). The final bill did not include two amendments that were of concern to the laboratory animal research community.

As reported in the January issue of the PSA (www.apa.org/science/psa/jan08farm.html), both the House and Senate versions of the bill included two amendments that would have adversely affected aspects of research with nonhuman animals. One was a ban on the Class B dealer sales of non-purpose bred dogs and cats for research. The second amendment was a prohibition against live animal demonstrations of medical devices for sales purposes. Both of these amendments were stricken from the final version of the bill. The only change made to the Animal Welfare Act was an increase in the maximum fine for violations from $2,500 to $10,000.

Although the final bill did not include language eliminating Class B dealers as a source for researchers to obtain non-purpose bred dogs and cats, it directs USDA to report to the House and Senate Agriculture Committees on the results of the pending NIH study of its grantees' reliance upon animals supplied by Class B dealers. This study was requested by the Senate Appropriations Committee when it acted on NIH funding for FY 2009.

APA had sent letters to the chairs of the Senate and House Agriculture Committee opposing these amendments. You can see the joint letter from Steve Breckler, Executive Director for Science, and Steve Dworkin, 2007 Chair of the Committee on Animal Research and Ethics, at: www.apa.org/ppo/issues/1007HarkinLetter.pdf.

OLAW E-seminar Series

The NIH Office of Laboratory Animal Welfare (OLAW) recently made available the recorded version of the first OLAW Institutional Animal Care and Use Committee (IACUC) Staff Online Seminar, "Preparing for Animal Rights Extremists at Your Institution." The seminar can be found on the OLAW web site at www.grants.nih.gov/grants/olaw/e-seminars.htm. Earlier this summer OLAW commenced its free online seminar series, which is geared toward assisting IACUC staff and members in implementing current regulations for research with nonhuman animals. Although registration for the series is closed due to an overwhelming response, OLAW announced that all remaining seminars will also be recorded and be available for viewing on the OLAW web site.

New website Animals in Research website

The NIH Office of Extramural Research unveiled a new web-site dedicated to nonhuman animal research. The site contains information for researchers and institutions, as well as for students, educators, and the general public. The web-site can be accessed at: grants.nih.gov/grants/policy/air/.

HSUS Campus Pledge to Prohibit Severe and Unrelieved Pain and Distress in Lab Animals

As part of its long-term campaign to eliminate all pain and distress in laboratory animals by the year 2020, the Humane Society of the United States (HSUS) invited academic institutions across the nation to sign a pledge to "to ensure that no animals at their institution experience severe and unrelieved pain and/or distress during any aspect of their care and use". Of the 301 institutions that were contacted, to date only a small number have signed the pledge. This pledge drive is one aspect of the HSUS campaign on eliminating all pain and distress in laboratory animals. Other aspects of this campaign include regulatory and policy efforts, challenging institutions that receive significant amounts of federal funding for research on the under-reporting of pain and distress, and regular mailings of the "Pain and Distress Report" to IACUC staff across the country. More information about the HSUS Pain and Distress Campaign is available at: www.hsus.org/animals_in_research/pain_distress/. ■

Getting a Head Start for Graduate School

by Amy Pitta

APA undergraduate summer programs are designed to give promising undergraduate students an opportunity to experience cutting-edge psychological methods through seminars and hands-on laboratory activities. These programs are a fun way for students to equip themselves with the skills essential to enter and succeed in graduate school, while meeting students from across the country with the same interests.

Summer Science Fellowships

The APA Summer Science Fellowships (SSF) program is well underway in its first year of operation. This year's 12 talented fellows are currently placed in psychology laboratories of some outstanding researchers in the Washington, DC area. The 6-week SSF program gives students an opportunity to explore the intellectual, personal, and social processes of scientific inquiry and to experience cutting-edge psychological research through hands-on laboratory activities. SSF offers promising students the opportunity to equip themselves with the skills essential to success in graduate school, and gives students who plan to pursue advanced degrees in psychological science the opportunity to be mentored by nationally-known faculty.

The program began June 22 and will run through August 1. This year's 12 outstanding fellows were chosen from a pool of 500 applicants. Their names and SSF placements (*in italics*) are listed below.

Kimberly Alexander
Stony Brook University
George Washington University

Joel Chan
University of the Ozarks
George Mason University

Shelby Cooley
Scripps College
University of Maryland

Adam Emfield
Idaho State University
George Mason University

Laura Flynn
Skidmore College
George Washington University

Stefanie Holman
University of Alabama, Montgomery
University of Maryland

Jessica Kang
University of Washington
University of Maryland

Benjamin Majors
Washington College
Johns Hopkins University

Drew Solyst
St. Mary's College of Maryland
George Mason University

Oth Tran
University of Virginia
Johns Hopkins University

Kathleen Vieira
University of Florida
University of Maryland

Vincent Woolfolk
University of North Carolina, Greensboro
George Mason University

Visit www.apa.org/science/ssf.html for complete details about the program.

2008 Summer Science Fellows. Front row: Joel Chan, Oth Tran, Vincent Woolfolk, Stefanie Holman, Laura Flynn, Shelby Cooley, Adam Emfield, Kathleen Vieira, and Jessica Kang. Back row: Kimberly Alexander, Benjamin Majors, and Drew Solyst.

Advanced Statistical Training in Psychology

Advanced Statistical Training in Psychology (ASTP) is an intensive, 9-day, hands-on seminar on statistics and research methods in a dynamic setting that emphasizes hands-on computer skills. This summer, 17 talented students who plan to pursue a graduate degree in psychology were selected to participate in the program, running from July 12-20 on the campus of the University of Maryland. Students are mentally stimulated with lectures, SPSS activities, hands-on activities, and discussions of graduate school. After a full day of t-tests, multiple regression, linear correlation, ANOVA, and repeated measures design, students have the opportunity to participate in blackjack workshops, juggling workshops, Charades, and other fun.

Here are this year's ASTP students, along with their home universities:

Arnold Bae
California State University, Northridge

Jose Cantt
Barry University

Kit Cho
The City College of New York

Lawrence Cho
University of California, Riverside

Collin Christensen
Southwest Baptist University

Sohee Kim
Lehigh University

Rita Ludwig
New York University

Felicia Mualim
University of California, Los Angeles

Martina Michlickova
Baruch College

Olamide Oduyingbo
Quinnipiac University

DeMarcus Pegues
University of Tennessee at Chattanooga

Harlee Pratt
SUNY Cortland

Andrew Stewart
Colorado State University

Tanisha Stewart
American International College

Jennifer Stoltzfus
Millersville University

Roy Taggueg
University of California, Irvine

Naomi (Rachel) Walker
Texas Women's University

For more information, please visit www.apa.org/science/astp.html. ■

The 2008 ASTP program attracted an excellent pool of candidates. The students chosen, shown above, engaged in a rigorous exploration of statistics over an intense week.

Funding Opportunities for Students!

The National Science Foundation's (NSF) Office of International Science and Engineering and its Developing Global Scientists and Engineers program invites proposals from undergraduate and graduate students! Please visit this site for more information:

www.nsf.gov/funding/pgm_summ.jsp?pims_id=12831&org=OISEfrom=home

This program has two elements. The first is the International Research Experiences for Students (IRES) which supports groups of US undergraduate or graduate students conducting research abroad in collaboration with foreign investigators. This component receives very few proposals from the social and behavioral sciences and we would like to see that changed. The next target date for IRES is September 15, 2008.

The second component is the Doctoral Dissertation Enhancement Projects (DDEP) which supports the dissertation research abroad of one doctoral student working in collaboration with a foreign investigator.

www.nsf.gov/od/oise/country-list.jsp

PSYCHOLOGICAL SCIENCE AGENDA

Psychological Science Agenda is published monthly by APA's Science Directorate. Dedicated to promoting and serving scientific psychology, *Psychological Science Agenda* provides news about national scientific policy developments, examines policy issues affecting and affected by the behavioral research community, and highlights the advocacy efforts of the Science Directorate on behalf of research and academic psychologists. *Psychological Science Agenda* also features news of APA's governance and program initiatives relating to scientific and academic psychology, and provides valuable, timely information about funding opportunities for research psychologists.

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