



NIMH Reorganization Creates Uncertain Future for Basic Behavioral Science

by Karen Studwell, Senior Legislative and Federal Affairs Officer

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While plans for the NIMH reorganization have been underway for nearly a year, NIMH Director Tom Insel formally announced the changes at the National Mental Health Advisory Council meeting on September 21st. As Insel previewed in the July Psychological Science Agenda, the institute's organizational structure is being re-focused to facilitate and accelerate translational and interdisciplinary science, to more clearly identify brain-behavior pathophysiology – and to translate this knowledge into developing more effective interventions that target symptoms and functioning.



The focus of the new organization on neuroscience and translation is evident in the titles of the 5 new divisions created to span extramural research: the Division of Neuroscience and Basic Behavioral Science, the Division of Adult Translational Research and Treatment Development, the Division of Pediatric Translational and

Treatment Development, the Division of AIDS and Health and Behavior Research, and the Division of Services and Intervention Research.

During the past year, Norman Anderson and other APA staff have encouraged Dr. Insel and NIMH to continue supporting a comprehensive research agenda that includes a strong commitment to basic behavioral research, broadly defined. Steve Breckler, APA's Executive Director for Science, addressed the Council in May 2004, questioning whether a reorganization that focuses on translation at the expense of basic research may be a shortsighted approach. At the September 21st Council meeting, APA's Associate Executive Director for Science Merry Bullock reiterated that, "translational work to apply research for treatment, diagnosis and prevention requires a strong and vibrant pool of research on the basic side of the translation equation, research

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that at first blush may not have a focus on mental disorders.”

Despite Director Tom Insel's assurances that there will still be a home for basic behavioral research there is much uncertainty about where some areas of research fit in the new structure. It is clear that some areas of basic behavioral science, especially those directly tied to brain-behavior relations or mental disorders, will still have support within the basic science division, as will much of the research on human and animal cognition, learning, memory, attention, and decision-making.

It is less clear how basic research on affect and social behavior and social cognition that does not have a direct impact on mental and behavioral disorders will be supported. For example, areas that were traditionally funded by the basic science division, such as much social and personality psychology, are being moved into the new translational research or AIDS and Health and Behavior divisions, with an increased requirement to re-focus work on the research's application to the prevention, diagnosis, and treatment for mental disorders. To ensure that there is sufficient expertise within the new divisions, NIMH is seeking to recruit several new program officers in areas relevant to translation, including basic behavioral science.

As the rules for NIMH funding change, it becomes especially important to review the new documents and also to contact the program officers who are listed as contacts within the research branch where your research may be funded (see: <http://www.nimh.nih.gov/researchfunding/reorganization.cfm>). APA will continue to monitor changes within NIMH, and disseminate information on NIMH priorities and opportunities. We welcome your feedback at science@apa.org, on how the reorganization at NIMH has or will impact your work. More information is also available on the NIMH website at: <http://www.nimh.nih.gov>. ■

International Science Policy - What are the Issues?

by Merry Bullock, Associate Executive Director for Science

Returning from Beijing, China, and the International Congress of Psychology held this summer in August, I was thinking about the vibrant group of scholars attending the congress, the broad array of issues addressed, and musing about how international psychology interacts with international science, and international science policy. For most of us, international psychology means contacts and colleagues from other countries -- whether it is reading articles, attending conferences, meeting colleagues, or collaborating on research projects. There are ever-increasing opportunities for interaction with psychologists from around the world. And, with international events more and more at the forefront of our daily news, there is also an increased awareness of the important role that psychology and other behavioral and social sciences can play in the international arena.

But just as the opportunities for more global interaction are increasing, there are challenges as well. Most of these are not unique to psychology -- but APA and other organizations with which APA works are important voices in making sure that science concerns are heard as policy is set. Following are just two of these concerns and a summary of some of APA's international activities.

Travel Restraints

Perhaps the strongest concern, at least from the international side, is over visas. Exacerbated since 9/11, stronger and stronger constraints on the ability of foreign scientists and students to travel freely across US borders is now beginning to affect US scientists at home as well. The primary issue has been one of timeliness - new visa processing rules have meant that it is very difficult for scientists from a number of countries to obtain a visa in a timely manner - to attend (or give!) lectures, attend conferences, participate in scientific exchanges. It has also meant

that the number of foreign students and post docs electing to study in the US is declining, and that those who are here are restricted in their abilities to travel freely in and out of the country. One unintended consequence of this is that the US now is less favored as a Congress venue for international science events -- because attendees will have a harder time coming to the event, and because there are concerns that these visa restrictions are threats to the free circulation of scientists - a credo that the US has strongly supported in the past. The APA International Office works individually with psychologists traveling to and from the US, and, along with other science organizations, works with the National Academies' International Visitors Office (<http://www7.nationalacademies.org/visas>).

Sharing Research Resources: Intellectual Property, Data Sharing, Infrastructure

Another concern as science becomes more global is how to foster sharing across borders. This gives rise to a host of issues -- countries have different definitions about what is and is not in the public domain, and what should therefore be subject to trade regulation or not; countries place different sorts of restrictions on the movement of information, especially personal information, which heavily impacts behavioral science data; and countries support or constrain international collaborations to differing degrees. An excellent resource for public domain issues is at the National Academies' intellectual property website called "ip@nationalacademies" (<http://ip.nationalacademies.org>).

The promotion of collaboration and data sharing is a resource, training and policy issue, that intersects with the call for open (and free) access to data. On the one hand, probably no one would disagree that science progresses best

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EXECUTIVE DIRECTOR'S COLUMN

STEVEN BRECKLER, Executive Director for Science

I Call That Science

In last month's column, I suggested that science can be found just about everywhere among APA's membership and organizational divisions. What I did not do is offer a definition of what I think counts as science.

To me, science is the accumulation of knowledge. It is both a process for obtaining that knowledge, and a system for organizing it. Most of us point to the scientific method as the process by which scientists acquire new knowledge. This creates some ambiguity, because the scientific method is not, in fact, a single well-defined thing. Important elements of the scientific method surely include observation, experimentation, verification, and the evaluation of hypotheses. And for many of us, it is important that our hypotheses be falsifiable (with all due credit to Karl Popper). Still, this leaves plenty of room for a diversity of scientific methods.

I doubt that many would disagree with this characterization of science. Tempers start to flare, however, when we get down to the naming of specific scientific methods. There are some among us who will argue that the only true scientific method is the experimental method – random assignment, independent variables, control groups, and carefully obtained outcome measures. Quasi-experiments, natural experiments, mere observations, and qualitative investigations are castigated as second or even third class methods. The scientific gold standard, according to this view, is the true experiment. Anything else is less.

We see an extension of this view when it comes to the evaluation of clinical interventions. The kind of evidence that some scientists demand before placing any confidence in the efficacy of an intervention is the Randomized Controlled Trial (RCT). It is true that



well-designed RCTs provide incredibly good knowledge, and the accompanying ability to assess causal relationships can be critical. This does not mean, however, that evidence obtained by any other method is totally irrelevant.

What Other Methods?

Many of the greatest discoveries and advances in the history of science have not been the result of true experiments. Indeed, entire scientific disciplines have thrived and generated new knowledge on the basis of observational methods and instrumentation, not on experimentation. Consider the new knowledge gained from the invention of the microscope or the telescope. Begin to ponder the knowledge already gained and yet to be mined from the mapping of plant and animal genomes. These traditions of science have been enormously generative of new knowledge, based on advances in instrumentation, observation, and data analysis and management.

I think psychology can learn an important lesson by studying how other fields of science prioritize their efforts and invest their resources. As I suggested in an earlier column, psychology can benefit by paying more attention to its infrastructure – to instrumentation, measurement, data archiving, or data sharing. Instrumentation and measurement technologies will ultimately create new and better opportunities for ex-

perimentation. Learning how to better archive and share our data will preserve our work for the future and maximize the true value of those data. The true experiment is important – but it is only one piece of the scientific enterprise.

Respecting Diverse Approaches to Science

What I suggested in this space last month was that the backbone of scientific psychology – experimental psychology, social psychology, developmental psychology, behavioral neuroscience, comparative psychology – is what many identify exclusively with science. It is not merely coincidence that these sub-fields are the ones within psychology that are most closely identified with the true experiment. I think for many of us, true experiments = true science. The unfortunate (and incorrect) inference is that true science derives only from true experiments.

Our scientific enterprise depends on much more than that. Psychology is a richer and more productive science because it includes a diversity of approaches – experimental methods, observational methods, measurement technologies, quasi-experiments, modeling, and simulations. It so happens that much of the science done in the name of psychology draws from the non-experimental approaches. It is still science – it is the accumulation of knowledge.

There exists a certain elitism among those who identify with the true experimental method. It is a good method, and we have good reason to celebrate it. But it is not the only scientific method, and sometimes it is not even the best scientific method. As a discipline, our greatest advances will only come when we learn to recognize and appreciate the value of the many scientific methods of psychology. ■

Is Psychology a Player in Big Science?

by Robert T. Croyle, Director--Division of Cancer Control and Population Sciences, National Cancer Institute

Over the past few years, I've grown increasingly concerned about Psychology. Before moving to NIH in 1998, my fifteen years as a faculty member in three different Psychology departments had led me to believe that Psychology was a vibrant and diverse discipline with tremendous relevance to the larger world of science. I continue to believe this, but I've also concluded that Psychology's potential as a player in "big science" is at risk and may not be fulfilled.



as strong and competitive (i.e. non-colaborative) as they were a decade ago. The curriculum makes it impossible for a clinical student to enroll in an anthropology course.

So what are we to do? One important step is to reconnect the psychologists in psychology departments with colleagues who have built their research careers in other settings. The psychologists involved in big science need to share their experience and expertise more widely so that junior scientists acquire the management, grant-writing, and collaboration skills necessary to compete on a larger playing field. Applied researchers need to be informed by the latest developments in basic behavioral science, and basic behavioral scientists need to demonstrate more effectively the value of their work by informing themselves about and contributing directly to big science activities. Although grant-funded research centers are often perceived by psychology faculty merely as sources of support for their graduate students, their importance as venues for transdisciplinary research training is grossly underestimated.

As APA launches the PSY21 initiative (<http://www.apa.org/science/psy21.html>), I encourage colleagues to reach beyond their programs, engage colleagues in the biomedical and population sciences, and read one of the many recent reports from the National Academy of Sciences on the future of behavioral and biomedical research (<http://www.nap.edu>). The conceptual and methodological expertise of psychologists is needed now more than ever. As research funders increase their investments in larger, longer, and more complex studies of the interaction of genetic, biological, and social factors underlying emotional states, behavior and disease, we psychologists will have to emerge from the comfortable world of two by two experiments and hyper-specialized journals into the world of big science. Human welfare depends on it. ■

The Human Genome Project is often cited as an example of big science (<http://www.genome.gov/10001772>). Given its focus on technology development, bioinformatics, and a molecular level of analysis, it's not surprising that psychology was engaged in the HGP mostly at the edges. A handful of psychologists, for example, continue to pursue studies of how individuals and families cope with genetic risk information. Others have struggled to reinvent the methods of behavioral genetics in light of our ability to sequence genes and analyze masses of information about their expression.

But the Human Genome Project is only the tip of the iceberg. As the NIH Roadmap illustrates (<http://nihroadmap.nih.gov>), it is not just genomic science that is becoming more transdisciplinary and more technology-intensive. The traditional boundaries between disciplines are breaking down, and the multidisciplinary research team has become the new standard. Leaders within the National Academy of Sciences, the National Science Foundation, and the pharmaceutical industry have been saying the same for some time. So have some psychologists. But as I travel around the country, visiting Psychology departments, Medical Schools, and Cancer Centers, the Psychology departments often look more like the crusty bastions of tradition than the incubators of innovation. The silos of individual's research programs and the field's subdisciplines are nearly

Deans encounter resistance from specialized faculty to the empowerment and funding of interdisciplinary programs. Graduate students whisper their interest in applied research conducted in real-world settings, hoping their advisor won't hear them.

Although they represent a small percentage of our community, the irony is that many psychologists around the country have and do participate in large-scale team science. The Women's Health Initiative (<http://www.nhlbi.nih.gov/whi>) is but one example of a major enterprise where psychologists have played a key role. Cohort studies have grown in number, size, and importance, as have community interventions and multi-site clinical trials. But the world of big science psychology is often invisible with the typical psychology department. Many psychologists become involved in big science intentionally or accidentally by migrating not toward, but away from psychology departments to work for private research contractors or to fill faculty positions in schools of public health or medicine. Programs in cognitive neuroscience, informatics, addiction studies and psychiatric epidemiology that are housed outside of psychology departments often attract the most creative risk-takers who are willing to trade the security of hard money for access to new technology, special populations, and large research infrastructures that allow scientists to utilize multiple levels of analysis.

SCIENCE BRIEFS

Auditory Processing and Hemispheric Specialization

by Amy Poremba



Amy Poremba earned her PhD in Psychology from the University of Illinois at Urbana-Champaign in 1996. She is currently an Assistant Professor of Psychology in the Behavioral and Cognitive Neuroscience Area at the University of Iowa and is also a member of the Neuroscience Program. Her research interests focus on the neurobiology of learning and memory at a systems level of analysis, and auditory processing of complex signals. One line of research examines commonalities in the neuronal systems and mechanisms underlying classical, operant, and concept learning in rodents. Another line of research explores the overlap of sensory processing systems and particularly the neural encoding of communication signals in nonhuman primates. Her recent work has mapping the neuronal correlates of general auditory processing and communication signals in rhesus macaques shows some similarities to humans and expands our knowledge about lateralization of brain function.

When I ask a classroom full of young undergraduates, what things one side of the brain “does” versus the other side, frequently the first answer is that language lives on the left side of the brain. Now, we all know that language doesn’t really “live” on the left side of the brain (although it may have a second mortgage) but it does seem to primarily be processed on the left. The fact that humans have formal language makes some people believe that we humans are unique, special, or one of a kind. And while we may be special, processing complex auditory signals on the left side may not be what makes us that way. We can find nature repeating itself at every level. Just take a moment to study the shape of a typical pyramidal neuron found in your cortex and a tree from your backyard (both have branches, and input and output zones, etc., although I might argue that to match perfectly the neuron needs to be turned upside down if you accept that leaves are the output of the tree). Nonetheless, similarities abound in the natural world and even more so between the highly related human and non-human primate brains. So, we can begin to study what types of processing in the brain of both humans and monkeys may be similar for communication sounds.

Mapping the Sound Processing and Sound/Visual Integration Areas of the Monkey Brain

We have recently shown that the area of cortex involved in auditory processing is larger than what was once thought (Poremba et al., 2003) and is only slightly smaller in its extent than the visual system. Using the whole-brain mapping method of 2-deoxyglucose utilization we looked at energy use across the brain during the presentation of a wide variety of sounds from pure tones to complex human and monkey vocalizations, music and environmental sounds. In addition to large portions of the parietal, prefrontal, and limbic lobes, the entire superior temporal gyrus is involved in auditory processing of complex sounds and this gyrus encompasses the primary auditory regions known to receive direct auditory information from the thalamus.

This study also delineated areas of overlap between the auditory and visual processing systems allowing us to explore the boundaries of sound only, versus sound plus visual information which is important in our seamless integration of our everyday sensory world. Most of our higher cognitive functions require us to integrate sen-

sory information—for example knowing that an apple is red and round, makes a crunching sound when being eaten and smells heavenly when baked with cinnamon in a pie. Yet we don’t know very much about how that process occurs in the brain and having identified these areas and their boundaries in the primate brain that are connected to more than one sensory process (in this case hearing and vision) is a significant step toward understanding how the brain seamlessly integrates the five sensory systems.

Similarities Between the Auditory and Visual Processing Systems

The overall map of the cortical areas involved in sound processing, as well as other recent studies, suggests that it may be organized in a similar manner to the visual system (Poremba et al., 2003; Romanski et al., 1999; Tian & Rauschecker, 2001). The auditory system may be divided into a dorsal stream for object location in space, a ventral stream for object identification, and possibly a third stream for motion processing. Our recent collaborative study in humans requiring identification of human voices versus their location using fMRI has shown a separa-

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tion of dorsal and ventral auditory processing streams (Rama et al., 2004). Discovering that the auditory system is organized in a similar fashion to the visual system may be helpful since we already know so much about how the brain processes visual information.

Hemispheric Specialization for Monkey Communication Signals

Monkeys have a complex set of vocalizations that can be used to convey a wide variety of information such as food quality, predators, and motivational state (Hauser, 1998; Seyfarth et al., 1980). These communication signals are crucial for survival and reproduction and can be linked to rich conceptual representations. It has been proposed that the vocal calls of monkeys are precursors of human speech, in part because they do provide critical information to other members of the species who rely on them for survival and social interactions (Cheney & Seyfarth, 1990).

Both behavioral and lesion studies suggest that monkeys, like humans, use the auditory system of the left hemisphere preferentially to process vocalizations. Indirect observations of hemispheric specialization for monkey communication signals include preferential head turning to the right when species-specific monkey vocalizations were presented from behind the monkey indicating a left hemisphere processing preference (Ghazanfar & Hauser, 2001). This suggestion is consistent with the study of Heffner and Heffner who made ablations of the auditory cortex on the left and found that those monkeys were impaired in discriminating monkey vocalizations (1984).

Our recent positron emission tomography (PET) imaging study provides for direct observation of hemispheric specialization for monkey communication signals (Poremba et al., 2004). To investigate the pattern of neural activity that might underlie processing of monkey vocalizations, we measured local cerebral metabolic activity by injecting rhesus monkeys with radiolabeled 2-

fluoro-2-deoxyglucose (FDG) while the animals listened passively to species-specific calls compared with a variety of other classes of sound including simple and complex non-vocal sounds, phase-scrambled species-specific monkey vocalizations, human speech and ambient background noise. Within the superior temporal gyrus, significantly greater metabolic activity occurred on the left side than on the right, only in the region of the temporal pole and only in response to monkey calls.

When we compared the metabolic activity levels evoked by the different sound classes the hemispheric specialization of the left hemisphere processing may have been induced by suppression across the corpus callosum, the largest fiber tract connecting the two hemispheres. We hypothesized that this trans-commissural suppression of activity in the right temporal pole allowed the left temporal pole to process the species-specific monkey vocalizations. This suppression shuttled across the corpus callosum might be the mechanism underlying the hemispheric lateralization of function. That the corpus callosum can mediate suppression of activity in one hemisphere by activity in another has been demonstrated in the motor system (Ferbert et al., 1992). To test this hypothesis we studied monkeys that had been given commissurotomies (creating split-brain monkeys) in the same way we had tested the intact monkeys. No asymmetry, or hemispheric lateralization, was evident in the temporal poles of the split-brain monkeys; moreover, the activity of the right temporal pole was significantly higher in the split-brain monkeys than in the intact monkeys, thus demonstrating a lack of suppression. These findings support the notion that the mechanism for creating hemispheric lateralization of processing during species-specific monkey vocalizations is suppression of activity in one hemisphere mediated by the corpus callosum.

Two Types of Hemispheric Specialization

Our results suggest that within the monkey's cortical auditory system, two

different types of hemispheric lateralization coexist. Although the left temporal pole hemispheric specialization was missing in the split-brain monkeys, there was still a stronger activation in the right hemisphere in many parts of the superior temporal gyrus (STG), i.e., auditory cortex, than on the left. This specialization of hemispheric processing survived the commissurotomy and suggests that there are two types of hemispheric lateralization occurring, one intrahemispherically, and one interhemispherically. The intrahemispheric lateralization, represented in the posterior portion of STG, apparently reflects right-hemisphere specialization for processing a wide variety of acoustic stimulus classes. This specialization seems to be intrinsic to the right hemisphere, in that it is largely independent of concurrent interhemispheric interaction via the forebrain commissures. The other type of lateralization is interhemispheric, mediated by the corpus callosum, and is important in processing the monkey auditory vocal communication sounds represented in the dorsal temporal pole—a late station in the putative ventral auditory pathway—apparently reflects left-hemisphere specialization for processing monkey calls specifically. This interhemispheric type of lateralization depends fully on the forebrain commissures, suggesting that, in the monkey, listening to a brief call can dynamically direct cortical processing to a unilateral substrate specialized for analyzing that call. Whether the left dorsal temporal pole of the monkey is in fact necessary for analyzing species-specific monkey vocalizations will need to be determined with further experiments.

Hemispheric Specialization in Humans, Monkeys, and Lower Animals

Understanding where and how monkeys process auditory communicative signals could help delineate the precursor neural framework for the evolution of language. Because lateralization of language processing is a major cerebral organizing theme in humans, any similar asymmetry in monkeys could reflect an antecedent neural mechanism.

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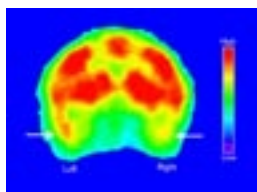
Left-hemisphere specialization for processing of species-specific vocalizations may have an evolutionary origin in nonprimate mammals (Ehret, 1987), paralleling that in birds (George et al., 2002). Monkeys, with their extensive auditory system and large number of distinct vocal communicative signals could provide a useful model approach for uncovering a neural basis for such specialization. Our results open up the possibility of characterizing such neuronal responses in a cortical region of the monkey that is not only a higher-order auditory processing area, but also one that could be a precursor for an acoustic language area in humans.

As mentioned above, hemispheric specialization is not only the domain of primates. Although one might argue in lower animals that many instances are related to the auditory domain. There are other instances of laterality in lower animals outside the auditory system, from chicks and spatial memory, to inhibitory avoidance in rats, and our recent study of amygdala function in a differentially rewarded spatial maze using rats (Vallortigara, 2000; Coleman-Meschke & McGaugh, 1995; Plakke et al., 2004). We must be careful not to assume that lower animals do not have lateralization of function. Often both sides of the brain in lower animals are assumed to accomplish the same task and act in the same manner. Therefore, sometimes values are averaged across hemispheres, only one hemisphere is recorded from, only bilateral lesions are made, or correlations of performance with amount of lesion damage is only made by averaging across hemispheres. This is true of many primate studies as well. It is clear, even from the minimal number of studies listed above, that we cannot lump the left and right hemispheres together and must make some attempt to start separating left from right. We must remain aware that hemispheric specialization is not exclusive to humans nor is it always an exception when it occurs in lower animals. ■

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Figure 1. Individual subject (rhesus monkey) PET image example of greater left temporal pole activity to monkey vocalizations compared to the right temporal pole.



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Interesting Careers

Engineering Psychology in Research and Development

James R. Callan, PhD., Pacific Science & Engineering Group

8

After 11 years active military duty, mostly on submarines, I entered graduate school in Biological Psychology at the University of Oklahoma Health Science Center in 1970. Through my experience as an electronics and engineering officer on the "boats," I had gained an appreciation of problems encountered by people working in demanding, complex, technological systems. In the Navy I was exposed to engineering psychology during introduction of new submarine control and display designs and to I-O psychology from consultants who were assessing military organizations and operational procedures of command and control. My graduate research was on brain-behavior relationships and neuropsychological implications of chronic alcoholism and brain damage. In 1976 I took a research psychology position with the Navy Laboratories in San Diego, conducting experiments on response time and decision making within military systems on board ships. In 1984, my colleague Dr. Richard Kelly and I left the government to form Pacific Science & Engineering Group (PSE), and over the past 20 years, PSE has grown to about 35 scientists and engineers. We now compete amongst a handful of human factors engineering companies for grants and contracts from corporations, foundations, and government agencies. We have had many medical research projects, including device testing, new product design, development of warnings and labeling, and statistical consulting for other health care researchers. We also provide evidence-based guidelines for programs in military command and control, aircraft and ship control systems, internet system architecture, and 3-D displays. Our projects include computer system designs, team training, collaborative work, effects of automation, and new, innovative forms of information visualization.

As company President and a Principal Scientist, I edit and contribute to article

submissions, technical reports, and consult on research designs and analyses. I review resumes and vitae of experimental psychologists, engineers, and computer scientist job applicants. (At PSE, we value the PhD because it gives some assurance of skill in experimentation, enthusiasm for discovery, and ability in analysis and expression.) I also devote much time explaining to potential sponsors and clients the potential contribution of applied psychological research to their product or project.

The physiological background in my doctoral research programs has been invaluable in providing greater understanding of issues in human performance. Knowledge of physiology, anatomy, and neurology is especially useful when examining human stress, fatigue, and perception. Another advantage of my education was the strength of the statistics and computer science programs at the University of Oklahoma. Knowledge of principles and limitations of human performance is valued by system engineers and equipment designers, and the most useful guidelines and recommendations are the result of carefully analyzed data obtained from well designed experiments and observation sessions. In addition, the ability to design computer models and simulations of systems and environments is particularly convincing in presenting the practical value of findings to sponsors and clients.

In 1993, I became a certified professional ergonomist (CPE), an appellation awarded by a national board to those who evidence several years in human factors research, consulting, and system design, and who successfully complete a national examination. For several years, I was licensed as a research psychologist by the State of California, but I reverted to inactive status because the program was dominated by clinical issues, and there were too few of us in applied research to form a critical mass. Each time I sought

to renew my license I was required to take continuing education courses in clinical topics unrelated to my specialty. Nevertheless, I encourage practicing research and I-O psychologists to seek state licensure when feasible.

The Human Factors and Ergonomics Society, and APA Division 21, Applied Experimental and Engineering psychology, became my professional homes. I was privileged to serve Division 21 as Secretary-Treasurer, and then, in 1999, as President, following a long line of distinguished research psychologists since the Division was established in 1957. Currently, Division 21 is one of the smallest within APA, but I think it best represents the role of the research psychologist in today's highly technological society.

As professional research psychologists, my colleagues and I have a vested interest in the advancement of our profession, and we rely on APA for services and support. I represented human factors for a term on the Board of Professional Affairs, where I found APA staff to be knowledgeable and helpful concerning our field's special blend of research and practice issues. Unfortunately, there are not enough applied researchers in APA to command the attention that our expertise deserves. The Division struggles to maintain representation and visibility, but, judging by the number and quality of applicants for jobs in PSE, I am optimistic for our growth.

APA members featured in this column in the past have explained the satisfaction that accompanies a career of applied research, and I add my voice to theirs. I believe that the future of applied experimental and engineering psychology research and consulting is bright, indeed, and it has been a very exciting and rewarding experience for me. ■

October 2004 Announcements

Grants Available for Scientific Conferences, Proposals Invited

The Science Directorate is currently seeking proposals for research conferences in psychology. The purpose of this program is to promote the exchange of important new contributions and approaches in scientific psychology. The next deadline for applications is December 1, 2004.

Grant money ranging from \$500 to \$20,000 is available for the scientific conference. Proposals will be considered using such formats as "add-a-day" conferences (\$500-\$3,000 available), "stand alone" conferences (\$5,000-\$20,000 available), and festschrifts (\$5,000-\$20,000 available). APA is also open to innovative ways of holding conferences. The conference must be additionally supported by the host institution with direct funds, in-kind support, or a combination of the two. Please note that a detailed budget including institutional support is required for application.

Conference proposals must meet the following eligibility requirements:

- One of the primary organizers must be a member of APA.
- Only academic institutions accredited by a regional body may apply. Independent research institutions must provide evidence of affiliation with an accredited institution. Joint proposals from cooperating institutions are encouraged.
- Conferences may be held only in the United States, its possessions, or Canada.
- APA governance groups, APA Divisions and other related entities are not eligible for funding under this program.

Conference manuscripts shall be submitted to APA after the conference is held for publication in PsycEXTRA, a companion database to the scholarly PsycINFO. PsycEXTRA is designed to link researchers, academics, clinicians, librarians, consumers, and policy-makers to a variety of information sources covering psychology, behavioral science, and health; PsycEXTRA provides the readership with original documents.

Seventy-five percent of funds will be distributed to grantees prior to the conferences, and the remaining twenty-five percent will be released following the conference and after the submission of a final financial report detailing conference expenditures equal to or exceeding Grantee's proposed total budget. Conference review committee members are: Anita

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when there is free sharing of resources of all types - data, publications, ideas, human resources. On the other hand, national and organizational interests, both entrepreneurial and individual, promote restricting access to some degree. The complex issues are evident from discussions stemming from the World Summit on the Information Society concerning how to ensure equitable access on a global level (see <http://www.itu.int/wsis>) to the current controversy in the US on open access and meeting the needs of the public, the science, and the science publisher.

Who Represents Your Needs?

APA addresses international issues in several ways. The Office of International Affairs serves as a clearinghouse for contact with other psychology associations and psychologists worldwide, as well as for international organizations, and coordinates information about international activities across APA. The Committee on International Relations in Psychology (CIRP) focuses on the development of international psychology, with projects on human rights, education, and publications. CIRP also provides governance oversight to APA's special non-governmental consultative status with the United Nations, and oversees APA's volunteer representatives to the United Nations.

APA's Division 52 has members devoted to international psychology, and is engaged in a number of programs (www.internationalpsychology.org/about.htm) to foster international collaborations and information exchange.

Beyond its own activities, APA is involved with international science issues through a number of coalitions, memberships and organizations devoted to representing the US in the international science arena. The USNC (US National Committee) for Psychology is a group that is constituted to represent the voice of American psychological science in the international level. Staffed by the National Academy of Sciences National Research Council, the USNC is composed of 9 members appointed from nominees from APA, the American Psychological Society, the Society for Research in Child Development, Psychonomics and the Society for Personality and Social Psychology. The mission of the committee is to develop psychology internationally and to contribute to the US voice in the international science program and policy arena. The USNC does this in two ways. First, it is itself the National Member for the International Union for Psychological Science - an organization with National Members in close to 70 countries. IUPsyS is the sponsor of the International Congresses of Psychology that occur every 4 years, and supports a number of training, networking, and infrastructure development projects. The USNC is also one of the many National Committees a cross the sciences, and works within the US to provide input into US activities and policy positions. ■

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Davis; Michael Domjan; Irene Frieze; Keith Humphreys; John Kihlstrom; and Kevin Murphy.

For more information on review criteria, proposal contents, and budget guidelines, please refer to the APA website at <http://www.apa.org/science/confer2.html> or contact Deborah McCall, Science Program Manager, at (202) 218-3590 or via email at dmccall@apa.org.

PROPOSAL DEADLINE: December 1, 2004

Please mail proposals to: APA Science Directorate,
750 First Street, NE
Attn: Scientific Conferences Proposals
Washington, DC 20002-4242
<http://www.apa.org/science/confer2.html>

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Predocctoral Interdisciplinary Research Training Program RFA

The Predocctoral Interdisciplinary Research Training Program RFA from the US Department of Education is accepting applications. Optional Letters of Intent are due September 17, 2004, with applications due **November 18, 2004**. This should not be confused with the Postdoctoral Research Fellowship RFA, which is new in FY05. Both RFAs can be found at: <http://www.ed.gov/programs/edresearch/applicant.html>.

APF Offers Three \$20,000 Graduate Scholarships in Child Psychology

The American Psychological Foundation (APF) is offering up to three \$20,000 Elizabeth Munsterberg Koppitz Scholarships to support graduate studies in child psychology in 2005.

The purpose of these scholarships is to nurture excellent scholars in the broad area of the psychology of the child, such as developmental, child-clinical, pediatric, school psychology, educational psychology and developmental psychopathology. Support will be from Sept. 1 to Aug. 31 each year. The award includes travel costs to attend the APA pre-conference workshop for Elizabeth Munsterberg Koppitz Graduate Fellows at the APA Convention and other relevant conferences as funds allow. APF will also award travel stipends of \$4,000 to runners-up to enable their travel to APA's convention and to encourage travel to other conferences as funds allow.

Graduate students who have achieved doctoral candidacy are eligible to apply. Students can apply before having passed their qualifying exams, but proof of having advanced to doctoral candidacy will be required before funds are released. Consideration will be given to psychological research that breaks new ground or creates significant new understandings that facilitate children's and youth's development or functioning.

The deadline to apply is **November 15, 2004**. Recipients will be announced on or after February 15, 2005. For complete application guidelines, please visit APF's website, www.apa.org/apf.

Funding Available to Study LGB Family Psychology

The American Psychological Foundation (APF) seeks applications for the Roy Scrivner Research Grants, which promote research on lesbian, gay, and bisexual family psychology and therapy. The Scrivner Fund provides postdoctoral grants of up to \$10,000 and graduate student grants of up to \$1,000 each, with preference given to dissertation candidates. Researchers from all fields of the behavioral and social sciences are encouraged to apply.

Applicants for the postdoctoral research award, including co-investigators, must have a doctoral degree. Applicants for the student grants must be enrolled in a graduate program and have a letter of support from their supervising professor. All research involving human subjects must be approved by an institutional review board from the principal investigator's institution.

The application deadline is November 1, 2004. Application guidelines are available from www.hookerprograms.org.

Nominate a Colleague for a 2005 Gold Medal Award

The APF Board of Trustees invites nominations for its 2005 Gold Medal Awards, which recognize life achievement in and enduring contributions to psychology. The awards are presented in four categories:

- o Life Achievement in the Science of Psychology
- o Life Achievement in the Application of Psychology
- o Life Achievement by a Psychologist in the Public Interest
- o Life Achievement in the Practice of Psychology

All award winners receive a gold medal and an all-expenses-paid trip to APA's 2005 Annual Convention in Washington, DC, August 18-21, where the awards will be presented. APF will also donate \$2,000 to a charitable or nonprofit organization chosen by each winner.

Only psychologists 65 years or older who reside in North America are eligible. Nominations should include which award the nomination is for, a nomination statement that traces the nominee's career, a curriculum vitae, and a bibliography. Letters of support are welcome. All materials should be sent in one package coordinated by a chief nominator. There is no nomination form.

The submission deadline is **December 1, 2004**. Send nominations to Gold Medal Awards Coordinator, American Psychological Foundation, at the APA address. For more information, visit www.apa.org/apf.

Submit Nominations for Brewer Teaching Award

APF invites nominations for its 2005 Charles L. Brewer Distinguished Teaching of Psychology Award. The award recognizes a career contribution to the teaching of psychology and was re-named to honor its 1989 recipient, Charles L. Brewer, PhD, in recognition of his careerlong devotion and contributions to the teaching of psychology. Brewer, a psychology professor at Furman University and editor emeritus of the journal *Teaching of Psychology*, is the 1995 recipient of APA's Distinguished Career Contributions to Education and Training Award.

The APF Teaching Subcommittee selects a psychologist for the award who has:

- o Demonstrated exemplary performance as a classroom teacher
- o Developed effective teaching methods and materials, as well as innovative curricula and courses
- o Conducted research on teaching
- o Taught advanced research methods and practice in psychology
- o Trained psychology teachers and demonstrated administrative facilitation of teaching
- o Inspired students to become psychologists

The winner receives a plaque, \$2,000, and an all-expenses-paid trip to APA's 2005 Annual Convention in Washington, DC, where the award will be presented.

The deadline to receive materials is December 1, 2004. Nomination materials should include the nomination form, the nominee's curriculum vitae, a bibliography, and a description of how the nominee fulfills the guidelines of the award. APF welcomes letters of support. Nomination forms are available at www.apa.org/apf or write to foundation@apa.org. All

materials should be sent in one package coordinated by a chief nominator to the APF Charles L. Brewer Distinguished Teaching Award Coordinator, American Psychological Foundation, at the APA address.

Graduate Research Fellowship Program at NSF Accepting Applications

The Graduate Research Fellowship program at the National Science Foundation is now accepting applications. The deadline for the social sciences is **November 29, 2004**. For more information, see the program solicitation at <http://www.nsf.gov/pubs/2004/nsf04615/nsf04615.htm>.

New Positive Psychology Fellows Program: Call For Applications

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Are you interested in collaborating with leading Positive Psychology scholars? The Positive Psychology Templeton Fellows Program will gather together the best and brightest scholars by creating and funding collaborations with senior scholars.

We encourage applications from early to mid-career scholars with a doctoral degree and graduate students pursuing a doctoral degree from the disciplines of Psychology, Sociology, Anthropology, Theology, Neuroscience, Economics, History, Public Health and Medicine. Applicants can be from any country and there is no age limit.

The deadline to apply is **December 15, 2004**. Selected Fellows will be expected to live in Philadelphia from May 15 to June 30, 2005. Substantial stipends and living expenses are available. For details visit: www.positivepsychology.org/ppfellows.doc. ■

Science Policy Insider News

What is SPIN?

APA's Science Policy staff wants you to know about the important policy issues that affect psychological science and psychological scientists at the national level. The Science Policy staff advocates for psychological science not just with members of Congress, but also the Departments of Defense, Health and Human Services, Transportation, Veterans Affairs, Education and with the National Aeronautics and Space Administration and National Science Foundation. To keep you aware of science policy within these agencies and on Capitol Hill, we have created APA's Science Policy Insider News (SPIN), a monthly email newsletter that will take you inside the Administration and Congress for timely information from your APA staff.

Visit SPIN at <http://www.apa.org/ppo/spin>.

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**APA SCIENCE DIRECTORATE WEBSITE:
www.apa.org/science**

Science Directorate Email Address: science@apa.org

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.

Psychological Science Agenda is distributed free to 30,000 psychologists, members of Congress and their staffs, key officials in federal agencies that fund behavioral research and use its findings, institutional libraries, and science writers in the national media.

To obtain a subscription to *Psychological Science Agenda*, contact the Science Directorate at: American Psychological Association, Science Directorate, 750 First Street, NE, Washington, DC 20002-4242.

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