

# OBSERVER

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/	27
•	Guest Contributor to Presidential Column Milt Hakel discusses reinvigorating the Human Capital Initiative
•	Survey Research on Minors Is Safe for Now Family Privacy Protection Act dies without action 3
•	NIDA's B/START Awards First round of grants given to young investigators4
•	Russian Chaos Theory Russian and US psychologists collaborate on research 8
<b>*</b>	Washington University Embraces Progress Psychology department expands with new building, chair, and staff
•	Satellite Meetings at APS Convention NIDA Cognitive Science Conference and Biology & Behavior Conference to be held

## A Congress to Remember: Behavioral Science Fares Well Despite Attacks

104th Congress finishes session with mostly good news for behavioral research

It was the best of sessions, it was the worst of sessions. The 104th Congress is in the record books, memorable mainly for its revolutionary aspirations and the many government shutdowns over the federal budget.

But behavioral scientists will remember the 104th as a Tale of Two Congresses. It was a Congress in which we saw blistering attacks on research, some of which was our research. Fortunately, we also saw those attacks successfully repelled by the National Institutes of Health (NIH) and the National Science Foundation (NSF), aided by the scientific community at large.

Although the attacks were reminiscent of similar events in the early 1980s, the outcomes were very different. Back then, they resulted in deep cuts in funding for behavioral and social science. This time, the attacks were not successful, primarily because the agencies were willing and able to defend their behavioral and social science missions.

At NIH, specific research grants from the National Institute of Mental Health (NIMH) had been targeted for elimination by some members of Congress at the urging of several anti-research groups. The controversy became the subject of a lengthy television network

SEE CONGRESS ON PAGE 17

#### INSIDE

New APS Staff APS Call for Nominations	12 15
Departments	
Presidential Column International Psychology Spolight on Research	8
Williams Syndrome	10
Trends ♦ Countertrends	13
Teaching Tips - Computers and Teaching People Members in the News	22 25 26
Obituaries	28
The Student Notebook Organizational Profile -	32
Stress & Genocide	35
Announcements	36
Meeting Calendar	39
Employment Bulletin	41

in conjunction with APS .... 14

# Bertenthal to Replace Marrett At NSF's SBE Directorate

The National Science Foundation (NSF) has named Bennett I. Bertenthal, of the University of Virginia, as Assistant Director of the NSF Directorate of Social, Behavioral, and Economic Sciences (SBE), replacing Cora Marrett, who left the

Foundation in September, after four years of service.



Bertenthal will commence his duties at NSF in January

Bertenthal, an APS Fellow, will assume this position just as Rep. Robert Walker (R-PA) is retiring from Congress and as chair of the House Science Committee, following two years of openly attacking NSF's behavioral science support. Primarily, Walker questioned the need for a separate NSF directorate devoted to the social sciences. Ironically, Walker recently described himself as a social scientist (he has a degree in political science) and indicated that the field has much to contribute. Bertenthal said that while he hopes to impart the value of social and behavioral sciences to Congress in

SEE BERTENTHAL ON PAGE 20



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# Invest Now in Human Capital Research

Milton D. Hakel Chair

Human Capital Initiative Coordinating Committee
Guest Contributor

The 1996 election is now history, but it will be some time before we can see how the results will actually influence funding for psychological research. Recall that the 1994 congressional results were widely received with misgivings and apprehension about the potential fate of



funding for scientific research, and, indeed, there were many close calls. However, as described elsewhere in this issue of the *Observer*, the outcomes were far better than had been expected (see page 1). What will the future hold? The needs keep growing—can we expect better support from the federal government?

I won't attempt to forecast the verdict to be rendered two years hence, but I can describe three steps being taken to increase investment in basic and applied research and development related to "human capital." Psychology's Human Capital Initiative was launched in January 1991 when over 100 participants in the Houston, Texas, Psychological Science Summit approved the publication of a draft document, *The Human Capital Initiative* (HCI), on behalf of 65 research-oriented organizations. In the past five years, in addition to *The Human Capital Initiative*, four HCI-associated special reports have been published, and a fifth is expected shortly.

Each addresses substantive questions and offers priority directions for research. In addition, in 1994 the National Science Foundation (NSF) embraced and broadened the Human Capital Initiative, and significant additional funding was secured. Vigorous action now can improve the verdict to be rendered in two years. Here are the three steps:

First, Marilynn Brewer, Ohio State University, and Duncan Luce, University of California-Irvine, have taken the lead in drafting a proposal, already submitted to NSF, for a workshop on Psychological Science Underlying Human Capital. The workshop meeting will be held to explicate the basic psychological research issues latent in the specific research initiatives published so far and also in NSF's related HCI effort. Through this workshop, our HCI and NSF's should move closer together. The workshop will help also to inject more basic research into the HCI effort.

Second, education is a major topic area in the original initiative, but it has not yet been addressed. Bruce Overmier, University of Minnesota, Bob Bjork, University of California-Los Angeles, and Don Foss, University of Florida, are now taking the lead in organizing a workshop that will focus on what psychological science knows, and needs to know, about learning and literacy. This effort in particular has the scope to propel psychological science as the core of a multi-agency, multi-disciplinary breakthrough, first in funding, then in findings.

Third, Jim Blascovich, University of California-Santa Barbara, is working on plans for another behavioral science summit meeting, to be held in the winter or spring of 1998. Strengthening psychology's research base is the tentative major theme, with "human capital" as a main focus, and regulation of research (e.g., as through IRBs) as another potential focus.

SEE HAKEL ON PAGE 16

#### Correction

The September 1996 *Observer* misstated the affiliation of new APS Fellow Joseph P. Forgas on page 5. It should have been the Univ. of New South Wales.

# **Survey Research on Minors Is Safe, for Now**

Family Privacy Protection Act would have invalidated and possibly eliminated valuable research on children's issues

Survey researchers can breathe a sigh of relief, as the 104th Congress has adjourned, and, for now, the Family Privacy Protection Act has died. Assumed by many to be headed for easy passage, the bill passed the House of Representatives, but did not reach the Senate floor before the congressional session came to a close. That the bill did not become law was due to the efforts of a coalition of organizations led by the American Psychological Society, the Society for the Psychological Study of Social Issues, the American Sociological Association, and the American Psychological Association.

Introduced by Senator Charles Grassley (R-IA), the bill required an absolute, prior *written* consent procedure before children could participate in even the most innocuous survey research. The legislation was part of the Republican "Contract with America," and passed the House in April 1995. In April 1996, the bill had passed the Senate Governmental Affairs Committee with a vote along party lines, but it never reached the Senate floor for a final vote.

The Family Privacy Protection Act would have affected any survey funded in whole or in part by the federal government that asked questions in seven socially sensitive areas: parental political affiliations or beliefs; mental or psychological problems; sexual

[T]he 105th Congress could see this legislation arise again, but the actions to educate Congress over these past two years should make it more difficult for new legislation to advance. For now, it's ok to keep plugging away; research efforts to understand and protect the health and well-being of children are safe.

Susan Persons APS

DIRECTOR OF GOVERNMENT RELATIONS

behavior or attitudes; illegal, antisocial or self-incriminating behavior; appraisals of other individuals with whom the minor has a familial relationship; relationships that are legally recognized as privileged, including those with lawyers, physicians, and members of the clergy; and religious affiliations or beliefs.

A coalition of over 30 organizations representing children, parents, scientific researchers, public health officials, health care providers, and school administrators worked to defeat this bill by calling attention to the damaging effect the one-size-fits-all policy would have on research efforts, and by educating policy makers about the detailed and time-tested regulations currently in place to protect human research subjects, especially vulnerable participants such as children.

#### "N"-adequate Samples

Among the primary arguments of the coalition was that a requirement to have parents sign a permission statement would severely reduce the number of children who would participate in research. And not so much because parents would disagree with the value of the research or content of the questions, but because there is a simple tendency for busy parents not to respond. This would have dramatic effects on survey research involving minors and would lead to inadequate sample sizes and underrepresentation of at-risk children. Coalition members argued that parents and policymakers want—and regularly use—the information obtained through these surveys, and that the Family Privacy Protection Act was not at all about family privacy but instead promoted the ideological belief that children's behavior can be negatively influenced by questions asked in survey research.

Coalition representatives testified before the Senate Governmental Affairs Committee, organized a congressional briefing,

and held a press conference to get the attention of policymakers and to highlight the chilling impact the bill would have on our ability to collect information on risks children face. At one point late in the session, there was discussion on the Hill of exempting one specific area of research, drug abuse, and the coalition fought successfully to prevent any exemptions. The Clinton administration was notified of the Coalition's opposition and urged to resist any such "carve-out" attempts.

These activities, in combination with letters from researchers and visits to congressional members' offices, were successful in pointing out the serious, unintended consequences of passing a bill that on the surface appeared to be good policy. In the end, the coalition raised enough questions about the bill to prevent its consideration on the Senate floor, especially for a Congress eager to adjourn and hit the campaign trail.

"It was a hard-fought two-year battle but a clear victory for children and our research community," said APS Director of Government Relations Susan Persons. Unfortunately, says Persons, "the 105th Congress could see this legislation arise again, but the actions to educate Congress these past two years should make it more difficult for new legislation to advance. For now, it's ok to keep plugging away; research efforts to understand and protect the health and well-being of children are safe."

# Young Scientists Get Quick B/Start at NIDA

Drug abuse institute awards first of "rapid transition" grants

he National Institute on Drug Abuse (NIDA) has awarded the first round of grants under its new Behavioral Science Track Award for Rapid Transition (B/START) initiative. This \$500,000 small grants program is designed specifically to help young behavioral scientists enter the competitive world of research grant-seeking. The specific goals of NIDA's B/START are to reverse the decline in young behavioral science investigators and to attract new investigators to the field of drug abuse research.

Branch. This expansion is being directed by prominent behavioral researcher Jaylan Turkkan, chief of the Branch and formerly of the Johns Hopkins University School of Medicine.

Speaking to the program's mission, Turkkan described the typical dilemma of young investigators with thin research portfolios: "I'm sure we all remember that funny period between the time that postdoctoral training is finished, but preliminary studies have not yet been done to justify a 'prime-time' R01 (the standard

With B/START support, young behavioral science

researchers can begin asking questions about,

for example, cognitive and decision factors lead-

ing to drug use or relapse; the situational cues

that might elicit a smoking episode; or whether in

animals, prior exposure to drugs leads to a greater

vulnerability to both licit and illicit substances.

currently engaged in drug abuse research may be surprised to hear the wide range of behavioral research that NIDA supports, and about other mentored grant mechanisms that can support a career in drug abuse research in addition to the B/START."

of Science, for APS Director Alan Kraut's

editorial column on research modeled after a similar program at the National Institute of Mental Health (NIMH) (see January 1995 Observer). B/START was initiated with these nudges from APS and from Congress specifically, the documented decline in the number of young behavioral science investigators. B/START's

impetus was largely a response to the 1988 findings by the then Alcohol, Drug Abuse and Mental Health Administration

"B/START is just the kind of generation of scientists make the transi-

#### Flowing from APS efforts to encourage federal research grant agencies to seriously consider the importance of programs to groom the next generation of scientists (see the August 23, 1996, issue

training), NIDA's B/START is in response to a pipeline issue,

### on the loss of young investigators (see May 1992 Observer).

JAYLAN TURKKAN

NIDA

program that we need more of," said Kraut. "And we are working to ensure that other agencies follow the lead of NIMH and NIDA to help the next tion into productive research careers."

#### **Difficult Transition**

Under NIDA's B/START, grantees receive \$50,000 and indirect costs (using the NIH R03 mechanism) to conduct research on behavioral aspects and mechanisms of drug abuse and addiction. Applications, limited to a mere ten pages, go

through an expedited review process (three-month turnaround from submission to funding).

These grants will allow new investigators to develop the pilot data they need to compete for regular research grants at the National Institutes of Health (NIH). As NIDA Director and psychologist Alan Leshner describes it, "B/START was implemented to provide the necessary seed money for preliminary behavioral and cognitive data to be gathered."

Leshner adds that "the B/START program has enabled NIDA to fill a very important gap in a research scientist's career. Young scientists can get started on their research programs, while the drug abuse field gains by ensuring that the next generation of talented behavioral scientists are supported."

B/START is just one of several new initiatives undertaken by NIDA's relatively new Behavioral Sciences Research NIH research grant application mechanism) or even an R29 (FIRST award for young researchers). For beginning investigators, this is a critical time to begin collecting pilot data to see if their ideas pan out for a larger, more comprehensive grant."

#### **Expanded Horizon of Research Areas**

What's more, Turkkan pointed out, the behavioral science horizon in drug abuse and addiction is more expansive than some might think. "With B/START support," she said, "young behavioral science researchers can begin asking questions about, for example, cognitive and decision factors leading to drug use or relapse; the situational cues that might elicit a smoking episode; or whether in animals, prior exposure to drugs leads to a greater vulnerability to both licit and illicit substances."

"In fact," she added, "those not

#### **B/START Class Facts of 1996**

The NIDA B/START awards for 1996 were selected from a pool of 29 reviewed applications, making the success rate nearly 28 percent. Both the researchers and the research are diverse. Four of the principal investigators are women. One study is AIDS-focused and seven are human studies. Details on the awards are on the next page in the accompanying box. L.H.

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### In Their Own Words...

# NIDA's B/START Class of 1996

Just barely having received official word, the first group of NIDA B/START recipients told us what it has meant to them to have received the award and about their research plans.



Medical Research Associate Veterans Administration Medical Center Durham, North Carolina

Applying for B/START was an invaluable experience. It gave me the opportunity to learn about grant-writing. It was also encouraging to know that I was not competing with more established investigators, a truly intimi-

dating prospect. I now expect to learn more about budgeting and managing grants, which undoubtedly will be useful in my next application. This grant will play a significant role in my transition to independent investigator status.

Research Plans: Brauer will be investigating the effects of nicotine, smoking-related sensory cures and anticipatory stress on craving for cigarettes. Each of these factors has been shown to acutely alter smoking behavior, but their effects on craving have not been well characterized. Craving appears to be an important contributor to the maintenance of smoking, and it is one of the most commonly reported precipitants of relapse.



Sandra Comer Research Scientist Research Foundation for Mental Hygiene, Inc. New York State Psychiatric Institute New York, New York

The B/START grant will allow me to expand upon both the research that I conducted as a postdoctoral fellow and the research that is currently being conducted in our

laboratory. The award is instrumental for me in terms of setting the foundation for a scientific analysis of craving for smoked cocaine. And, hopefully, the results from this year's studies will provide a basis for further studies on other variables that may affect craving for smoked

Research Plans: Comer will evaluate craving for smoked cocaine by rhesus monkeys in order to examine three distinct conditions under which craving reportedly occurs: (1) during abstinence, in the absence of internal (drug-induced) or external (environmental) cues associated with drug use, (2) in the presence of environmental cues associated with drug use, and (3) in the presence of internal cues associated with drug use. The primary purpose of the study is to compare the acquisition of craving for smoked cocaine in the presence or absence of cues. "Craving" has been used to describe drug users' desires, wants, or needs for a drug, and users report that severe craving is partially responsible for continued drug use as well as relapse. Despite the potential importance of craving in drug use, there have been few experimental studies designed to measure it. Part of the difficulty is the imprecision and variable interpretation of the term and the fact that craving does not vary in a predictable way.



Rachel Herz Assistant Member Monell Chemical Senses Center Philadelphia, Pennsylvania

The fact is, I was turned down for a more ambitious NIDA grant proposal recently but was encouraged by the technical (i.e., drug dose) reason for the rejection. Believing the basic research proposal to be sound, I applied for a B/START award (with a less involved research plan) and was rewarded for my efforts. Clearly, this grant is a potentially very significant step in launching my research career, and I am hopeful that it will allow me to develop the research competence I need to work effectively with caffeine. The experience I gained in applying for B/START should go a long way toward helping me secure additional grants down the road in order to engage in a more extensive and involved research program. Ultimately I hope to look at how arousal/emotional intensification can potentiate the effectiveness of an ambient odor as a contextual memory cue. Research Plans: Drugs that produce state dependent memory

(SDM) also produce profound alteration in mood. Because the manipulation of mood alone (during learning and retrieval) produces strong dissociations in memory, it has been proposed that drug-induced SDM effects are due to the mood states that these drugs generate. Herz will examine dose-related changes in mood in relation to their effect on learning and retrieval in humans. Since caffeine-induced mood alterations vary predictably with dose, Herz also hopes to examine whether the SDM effects in humans are conditional upon the congruence of the mood state (that caffeine induces). The research has implications for determining how does and mood are involved in the state-dependent mechanisms that underlie drug abuse. The long-term objective of the research program is to determine how the emotions and memories associated to drug-induced state changes might stimulate drug seeking, craving, and the initiation of drug withdrawal symptoms.

Linda LaGasse Clinical Assistant Professor of Pediatrics Women's and Infant's Hospital of Rhode Island Providence, Rhode Island

What is known about the effects of maternal drug use during pregnancy on child development has been determined in part through NIDA's large projects such as the Maternal Lifestyles Study (MLS) and small projects such

as my B/START research. As coordinator of the neurobehavior contract of the MLS, I understand the importance of large-scale studies with many subjects and a wide view of a complex problem. Based on this experience, I feel ready to pursue very specific questions about the effects of cocaine and alcohol on infant neurobehavioral development and dyadic interaction. The B/START funding not only gives me the opportunity to begin my own research program but allows me to augment and elaborate on the approaches large studies use to measure drug use, risk, and infant outcomes. With encouragement by NIDA, I am also pursuing funding for my work on the possible effects of in utero exposure to cocaine on infant exploration. These funding opportunities allow new psychologists to join the research community.

Research Plans: To address inconsistency in findings of studies on the effects of prenatal cocaine exposure on infant outcome, the objectives of this B/START study are to: (1) determine the combined effects of alcohol and cocaine on infant neurodevelopment; (2) use sophisticated clinical interview measures of cocaine and alcohol use to provide a more reliable estimate of prenatal substance exposure; (3) include measure s of maternal biobehavioral risk factors in addition to measures of prenatal substance exposure that may related to infant neurobehavioral development; and (4) use state-of-the-art measures from the MLS neurobehavioral battery to assess prenatal drug exposure and child outcome.

CONTINUED ON NEXT PAGE



# NIDA's B/START Class of 1996



Anthony Liguori Instructor Bowman Gray School of Medicine Winston Salem, North Carolina

The award is an immense confidence builder in a time when getting research funding is increasingly difficult for anyone, let alone young investigators. Although it's "only" a small grant, I'm proud, honored, and

excited to have it. I expect that the pilot data I'll be able to collect with this grant will help toward bringing future funds to our new Human Performance Laboratory.

Research Plans: Marijuana is the most widely used illicit drug in the United States. It impairs equilibrium and is often found in the blood-stream of drivers involved in automobile accidents. While the effects of marijuana on equilibrium and driving have both been studied separately, a critical gap in the existing knowledge of marijuana effects on driving is the lack of a rigorous examination of these effects within the same group of subjects. This study will compare the effects of placebo and two potencies of marijuana on equilibrium and simulated automobile driving using a within-subject design. Results will show whether marijuana doses that impair driving also affect motor equilibrium and vice versa. Marijuana doses that objectively appear to increase "cautious" driving may simultaneously worsen other essential aspects of driving, such as sense of balance.



Richard Stein
Research Associate
Department of Neurology
Harbor-UCLA Medical Center
Torrance, California

The B/START program is a great concept. When I applied for the grant, I was facing the end of a two-year fellowship with lots of new skills but no funding. The

one-year B/START will allow me to the time and resources to generate some pilot data in collaboration with Linda Chang and Lena Khalsa-Denison and to submit an application for a five-year K01 (Mentored Research Scientist Award). This transitional grant was pivotal in keeping me connected with my plans for a research career. The best part about receiving it was that, after years of training doing other people's research or my own research while under close supervision, I finally feel like an independent, albeit novice, researcher.

Research Plans: This research will examine the effects of cocaine abuse in HIV-infected individuals on neuropsychological functioning. The study will significantly improve our knowledge of the potential additive or multiplicative effects of HIV-infection and cocaine abuse on cognitive functioning. Also, the project will generate new information concerning the demographic, psychosocial and drug use patters that influence these neuropsychological effects. Such dat will be invaluable in directing further research in this area, including future efforts to track the longitudinal course of these patients and in maximizing the effectiveness of treatment of co-morbid HIV infection and cocaine abuse.

David Wetter Assistant Professor University of Texas-Houston Anderson Cancer Center Houston, Texas

I'm very excited about receiving the B/START award. My hope is that it will yield some insights into possible mechanisms that mediate the relations among

affective vulnerability, nicotine withdrawal, and relapse. My study requires all-night electrophysiological recording, which is very expensive, but the B/START award allows me to collect the pilot data needed

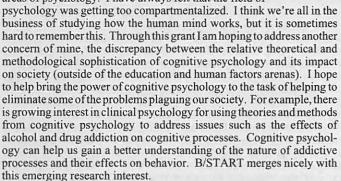
to adequately justify the cost and highlight the potential utility of this research paradigm. If my hypotheses are supported, the data collected from this grant will allow me to write a much more compelling R01 or R29 application than would have been possible without this award. The B/START program seems to be an excellent mechanism for helping new investigators get funding. The streamlined application procedures and rapid turnaround time are a real plus. It took less than four months from the date of grant submission until the notification of funding. That will enable me to get my research program up and running much faster than would have been possible with other types of grants.

Research Plans: Sleep is a fundamental index of behavioral disturbance and recent reviews of drug withdrawal concluded that sleep disturbance is common to withdrawal from virtually all drugs of dependence. But drug withdrawal effects on sleep have received little research attention. There is evidence that objective sleep measures may more sensitively index the effects of nicotine withdrawal and nicotine replacement than do\*traditional self-report measures. Moreover, the consequences of sleep disturbance such as negative affect and cognitive impairment resemble those of nicotine withdrawal. Thus, sleep disturbance may not only index nicotine withdrawal, but may be a mechanism that causes or exacerbates other withdrawal symptoms.

The study of nicotine withdrawal is important because withdrawal causes clinically significant dysphoria; impairs cognitive and psychomotor performance; discourages quit attempts; and, is a useful model for studying drug dependence. Nicotine withdrawal may also contribute to relapse and an inability to quit smoking, although this relationship has not been consistently demonstrated. Key mechanisms through which nicotine deprivation affects behavior remain to be identified.

Rolf Zwann Assistant Professor Florida State University Tallahassee, Florida

I am very excited about having received the B/START award because it will allow me to branch out into a new research area that potentially has implications for other areas of psychology. I have always felt that the field of

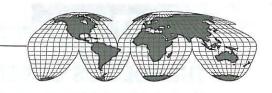


Research Plans: The long-term objective of this project is to contribute to a scientific understanding of the relationship between drug addiction and cognitive processes. The focus of this project is on smoking addiction language comprehension. To be examined in this study are: (1) the effects of smoking urges on cognitive performance, and (2) whether smokers have a different memory organization of smoking-related information than nonsmokers. The answers have both theoretical and practical significance. Do smoking urges negatively affect language processing speed and comprehension accuracy, and do smokers have more trouble inhibiting smoking-related information

than nonsmokers?



### **International Psychology**



# Who's Ahead: Russia or the U.S.? ... In Chaos Theory, That Is

We Russians have a long history of mathemati-

Chaos provides venue for cooperative research

Moscow, Russia—"For us Russians, it has always been a favorite sport or pastime to make up all kinds of new methodolgies," said Irina Trifomova, chair of the Russian branch of the Society for Chaos Theory in Psychology and the Life Sciences, and professor at the new Moscow State Social University and lecturer at Moscow State University.

"When I came back from America last week I was surprised at first to realize that the development of synergetics and chaos theory seems to have gone further here in Russia than in America," said Trifomova. "But I soon saw why: We Russians have a long history of mathematical approaches and

a very old, strong tradition of collective discussion, meeting together, confronting different types of knowledge, and developing new knowledge together."

#### **Working Together**

This contrasts with what Trifomova sees as the "the style of work in America, [which] is a style of

individual work—Americans do their work, introduce it at conferences, write their articles and publish them, and that's it."

Differing Russian and American work styles, rather than conflicting, might actually complement each other. Together, they can be the basis for exceptionally fruitful cooperation on research, Trifomova suggested when she met with APS Executive Director Alan Kraut at the APS annual meeting last summer in San Francisco. She attended the APS convention after taking part in the Society for Chaos Theory's annual meeting at Berkeley in June, where she spoke on "Fractal Functionality and Differential Psychology." At the APS convention, she particularly benefitted from the symposium on chaos and nonlinear dynamics that included APS members Stephen Guastello of Marquette University, Robert J. Porter of the University of New

Orleans, and Frederick Abraham of Blueberry Brain Institute, among the presenters.

When she met with Kraut, Trofimova recalled, "We looked at ways in which Russian and American scientists could conduct some common research. American scientists' research competence together with Russian strong mathematical traditions demands that we collaborate in producing models and projects. We talked about some possibilities in synergetic applications in psychology and some projects in modeling in the field of personality."

The Moscow branch of the Chaos Society that she chairs

group that has been offering courses in cybernetics and other nonlinear dynamics approaches at Moscow State University and other schools for about three years. It was formally linked with the Chaos Society last February and has about

15 core members,

circle of interested

reaching a much wider

originated from a core

cal approaches and a very old, strong tradition of collective discussion, meeting together, confronting different types of knowledge, and developing new knowledge together.

IRINA TRIFOMOVA
THE SOCIETY FOR CHAOS THOERY IN PSYCHOLOGY

scientists, Trifomova said.

#### **Need for Order**

Russian psychologists with a firm grounding of their own specialty fields are highly interested and receptive "but it's a huge problem to educate students about synergetics and chaos theory," Trifomova says. Students may not yet have reached "a point where they think they need it," she said.

"But more and more psychologists are finding themselves in a situation where they need a systems approach," she said. "They need to develop a dialectic, and need both philosophy and mathematics. Every investigator who is a real scientist needs something more formal, more general—general concepts, general ideas, general laws behind his or her results, something universal to help explain why those things happen," Trifomova said.



Some of the major assumptions and principles underlying chaos theory are similar to and compatible with Marxist-Leninist ideas with regard to dialectical materialism, suggests APS Charter Fellow Albert R. Gilgen, who has written extensively both on Russian psychology and on chaos theory. He says, "chaos theory appeals to people who are interested in broad, integrating concepts. That's why I got interested in it."

#### Bridging the Gap

Frederick Abraham, co-editor with Gilgen of a recent book on chaos theory, has been in touch with Trifomova since February. He said he is "impressed with the zeal" with which she is trying to develop some leadership in Russia for the field of dynamic systems theory, adding, "I think that dynamics and chaos theory and all their related variations



Trifomova

hold a great deal of promise for the liberation of psychological theory and research."

"They provide a meta-modeling strategy for dealing with patterns for complex integrative phenomena evolving over time. And they explain major shifts (bifurcations and nonstationarities) in those patterns parsimoniously. They also offer a common language for better communication and a better balance of unity and diversity in our discipline.

"International cooperation is always beneficial to the health of a science," Abraham said, "for the diversity and convergence of thought it brings to a field."

The very advanced state of Russian work in dynamics theory became clear to Abraham during several meetings in the United States with Trifomova and her colleague from Moscow State University, Olga Mitina.



Frederick Abraham (*left*) served as co-editor with Albert Gilgen for a recent book on chaos.

"I was particularly

intrigued with a political attitude survey that Mitina conducted on the members of the top 20 political parties in Russia during the upheavals of 1991 (that climaxed in the collapse of Communism) and 1993 (when Yeltsin's military forces bombarded the Duma or National Assembly), and by her analysis of the dynamics of the Russian elections last June and July," Abraham said.

Mitina was also gathering cross-cultural data on stereotypes of women in the United States to compare with those in Russia.

She is also collecting cross-cultural data on a broad range of topics, including goals of teachers and study of mathematics and use of computers in schools. She assisted Abraham in setting up programs in art, mathematics, and science in the middle school of Abraham's town, near Moscow, Vermont. They hit on the idea of having students in Moscow, Vermont, and Moscow, Russia, start communicating over the Internet, using this as part of a



Members of the Washington, DC, Evolutionary Systems Society (WESS) (clockwise from bottom right): Olga Mitina, Jack Mahar, Jerry Chandler (president of WESS), and Frederick Abraham (behind Chandler).

study to determine what changes in attitudes occur as a function of the communication.

Guastello, past president of the Chaos Society, said, "There is a lot of original stuff showing up in different parts of the world, not just in the United States, and it looks as though we have discovered an interesting pack of folks in Russia who are interested in many of the same things we are."

Guastello said the dynamics theory approaches "are going to be a great equalizer for scientists' groups in other countries, not just Russia. Though the United States probably ran away with the show in a number of scientific areas, the new ideas and applications are finding footholds in many places and it's all starting fresh. So we're going to see first-rate material coming from a lot of places where we haven't been expecting it. And because the concepts have such wide applicability, there are many ways for people to get hold of it and start doing new things with it."

Guastello pointed out that there are there are many different sides to chaos theory. "It's not just one thing," he said, "it's actually an agglomeration of related mathematical concepts. Certain aspects have been widely pursued in the United States and others—synergetics, for example—got more attention in Western Europe and apparently also in Russia. The Russians have done good mathematical foundation work that shows up in that side of chaos theory as we know it in the United States. They made a parade of mathematical contributions over the years." **D.K.** 

<sup>1</sup> Chaos Theory in Psychology, Frederick David Abraham and Albert R. Gilgen, eds., Greenwood Press, Westport, CT, 1995, and Post-Soviet Perspectives on Russian Psychology, Albert R. Gilgen, Vera Kolzova, Yuri Oleinik, and Carol K. Gilgen, eds., Greenwood Press, Westport, CT, 1996.



## Spotlight on Research

# A Specific Cognitive Weakness Is Attributed to a Single Gene Deletion

Interdisciplinary team of geneticists and psychologist reveals first such link through studies of Williams syndrome

Behavioral neuroscience has passed another milestone; for the first time, a specific weakness in cognitive ability has been linked to deletion of a single gene. APS Fellow Carolyn B. Mervis (Emory University) is part of a collaborative research group that made this breakthrough via recent studies of Williams syndrome.

The findings were based on National Institutes of Health supported research published in a paper in the July 12 issue of the journal *Cell*. The other principal investigators on the project include a molecular geneticist at the University of Utah, Mark Keating, and a medical geneticist at the University of Nevada School of Medicine, Colleen Morris.

Williams syndrome (WS) is a multifaceted genetic condition of varying severity occurring about once in 20,000 live births. The majority of these cases are the result of spontaneous genetic mutations, and are not inherited. (Few individuals with WS have children of their own, so even if there were a genetic transmission of the defect, the disorder would remain relatively rare.) People with classic WS generally have mental retardation (the average IO is 55 to 60, with a range of 35 to 105); an unusually outgoing, loquacious and friendly manner (sometimes too friendly to strangers); overly sensitive to other's emotions; a great deal of anticipatory anxiety; a prominent attractive smile; characteristic facial features; small teeth; joint problems; and heart and circulatory symptoms. Associated supravalvar aortic stenosis (SVAS), a narrowing of the ascending aorta, may be mild, moderate, or life-threatening.

Until recently, the diagnosis of WS was usually made between 4 and 6 years of age, with SVAS or other heart problems often being one of the most important pieces of evidence. Now, a

blood test for WS is available, and most newborns with SVAS are tested immedi-

ately. Earlier detection is also facilitated by the fact that most children with any developmental delay are tested by age 2.

#### **Cognitive Profile**

Individuals with classic WS have a unique pattern of cognitive strengths and weaknesses. They

perform very poorly, relative to their overall IQ level, at copying patterns or constructing shapes in response to pictures (visuospatial construction, VSC), while their auditory short-term memory is typically above that predicted by IQ, and their language skills are in line with or slightly above IQ.

Mervis and her colleagues, Jacquelyn Bertrand, Byron Robinson, and Bonnie Klein, have studied the characteristic WS cognitive profile (WSCP), and described it in terms of subscores on the Differential Ability Scales (DAS), a standard test that assesses a wide range of intellectual abilities. The criteria for WSCP are a low absolute score on pattern construction, with pattern construction also low relative to auditory short-term memory, and low relative to the overall score. The sensitivity of this operational definition of the WSCP in classic WS is 0.94; the specificity is 0.92. That is, among people with the classic WS genetic condition, 94 percent of them test positive by these criteria; and in a group of people without WS but who have borderline normal intelligence, mental retardation stemming from any of various syndromes or from uncertain etiology, 92 percent do not exhibit the cognitive profile.

#### Homing in on It

Classic WS has recently been shown to

be caused by hemizygosity for at least 500 kilobases of DNA on chromosome 7 (i.e., a

deletion of genes on one of the two copies of chromosome 7). "Geneticists hypothesize that there are about ten genes missing," reports Mervis. To elucidate the mechanisms of WS, the researchers have sought individuals with SVAS, but without all the other characteristics of WS, hoping to identify people with smaller deletions in this region of chromosome 7.

Indeed, researchers have identified individuals with

hemizygosity limited to the gene for elastin, a structural protein found in large arteries and other elastic connective tissue, and have established that SVAS results from this deletion. Elastin is expressed at negligible levels in the brain, and these people have no cognitive or personality abnormalities. More recently, they identified two kindreds with SVAS combined with a history of academic problems, but with normal IQs, and without the personality characteristics of WS.

When Mervis and colleagues tested the affected members of these families, they fit the WS cognitive profile, visuospatial construction being their greatest cognitive weakness. "They do not show a dramatic loss in IQ if they are otherwise normal, because they have strategies to compensate. They lose a few points on IQ tests, but are not knocked out of the normal range," explains Mervis. "The observed cognitive deficiency so far is quite specific for visuospatial construction. Even in classic WS with moderate retardation, the VS problem primarily involves construction. Retarded people with WS can match patterns as well as anyone of their equivalent IQ, they just can't construct them." In contrast, high functioning (normal intelligence) people with classic WS, like people



Mervis



with partial WS, compensate for their deficiency in VSC through other cognitive skills. "It is not that they can't do these VSC problems, but that they are very slow at them," says Mervis.

#### The Fine Points

The genome of the affected individuals of one partial WS family has a deletion of just 85 kilobases of DNA on chromosome 7, and is hemizygous for just two genes. One is elastin, accounting for the SVAS. The other is a newly discovered gene of unknown function called LIM-kinase1 (LIMK1). The LIMK1 gene product has bits of amino acid sequence that resemble sequences in three known classes of proteins. "LIM" domains are types of "zinc finger" domains that interact with DNA; other proteins of this group are known to be involved in gene regulation, particularly in the context of differentiation and the determination of cell fate during development. However, unlike other LIM family zinc finger proteins, this one is also a kinase. That means it phosphorylates something, which means it probably regulates some cellular function in the short term. The presence of a "PEST" (proline, glutamate, serine, threonine) amino acid domain in LIMK1 also suggests that the level of LIMK1 protein itself is regulated on a short time scale. The main hypothesis for the function of LIMK1 is that it is important for the formation of certain networks of neurons that carry out parallel processing involved in visuospatial construction. "However," says Mervis, "it cannot be ruled out that LIMK1 might also be involved in [neural] signal transmission." LIMK1 messenger RNA appears at very high levels in both fetal and adult human brain.

Thus, it would appear that hemizygosity for LIMK1 is implicated in the extreme weakness for VSC shown by individuals with classic or partial WS. Asked whether LIMK1 is the gene for VSC? Mervis replied quickly, "No, we don't want to say that. Really, there is a cascade, involving lots of genes. If you're hemizygous for LIMK1, you have trouble with visuospatial construction, but this is not the only way to have trouble with visuospatial construction." Is the damage

CONTINUED ON NEXT PAGE

#### Dr. Lloyd Humphreys receives the ETS Distinguished Service to Measurement Award

ducational Testing Service is proud to announce Dr. Lloyd Girton Humphreys as this year's recipient of the Distinguished Service to Measurement Award. He is professor of psychological research emeritus at the University of Illinois.

Dr. Humphreys received the award for numerous contributions during his 60-year career. Because of him, we have a better understanding of human abilities, giving prominence to individual differences in education and the workplace, and flaws in psychological research.

In presenting the award, ETS
President Nancy S. Cole said, "Professor
Humphreys has persistently probed
the theoretical, practical, and policy
implications of individual differences,
especially individual and group
differences in human abilities."

Dr. Humphreys became famous early in his career due to his widely cited doctoral dissertation documenting the partial reinforcement effect. However, his experience in the Aviation Psychology Program of World War II, with its emphasis on the measurement of abilities in job selection and training, stimulated him to shift from the experimental psychology of learning and reinforcement to a lifelong concern with the nature of human intelligence and with the development and application of correlational methodology in research.

Dr. Humphreys construed intelligence as the acquired repertoire of all cognitive skills and knowledge available to the person at a particular point in time. For him, the size of the intellectual repertoire was a behavioral trait congruent with the standard tests and with the dependable correlates of those tests. This formulation keeps the theory of intelligence close to the data of intelligence measurement, with an emphasis on empirically testable hypotheses about the trait.



In regard to the organization of abilities, he favors hierarchical structure but also highlights facet models, which he finds particularly useful as a way of thinking about psychological test development. Indeed, he recommends the construction of tests that achieve homogeneity by control of heterogeneity across facets.

With respect to correlational methodology, Dr. Humphreys' contributions are numerous and powerful. "As just a few instances, he explicated the relation between predictors and criteria at different points in time in terms of a simplex model, he developed criteria for the number of common factors in factor analysis by means of parallel analyses of random data, and he clarified the relation between reliability and the power of statistical tests," Cole noted.

The Distinguished Service to Measurement Award is presented by ETS annually to an individual whose work has had a major impact on the theoretical or practical development of educational and psychological measurement.

#### **Learning for Tomorrow**

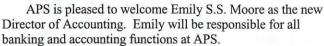




### New Staff at APS ...

### APS Welcomes . . .

# Emily S.S. Moore As APS's New Director of Accounting



Emily is a professional in her chosen field, having extensive background as a director of finance and a director of accounting. She is experienced in all phases of accounting and finance and has had considerable cross-training in these areas. Emily also has directed the accounting department for the US Pharmacopeial Convention, where she supervised a large staff. In addition to her fiscal duties, she had responsibility for the sales of *Certified Chemical Standards* to universities and to the chemical and pharmaceutical industries. Early in her career, Emily also held several responsible positions in accounting and finance

She comes to APS from the Jewish Council for the Aging and replaces APS Bookkeeper Paul Rigby. Prior to that position, Emily spent over six years with the American Association of Physics Teachers (AAPT) as its Director of Finance. She assisted with AAPT's semi-annual meetings at various locations across the country, and she was in charge of all sales of the Society's publications. While working at AAPT, her youngest son (now

aged 19) erroneously informed his teachers that his mother was a physics teacher. Emily did not mind the error once she realized that "at school and PTA meetings, the teachers treated me as if I was one of their own," she recounts. Fortunately for Emily, now that she works at APS, her two boys are grown and are not telling teachers stories about her being a psychologist!

But, now that she is here, what are her plans? "To consolidate the functions of APS's accounting office and centralize some activities to achieve even greater operational efficiency," she says. With office management functions now in the hands of the APS Deputy Executive Director, the functions of bookkeeping and accounting can receive greater attention as APS matures financially.

Emily is a naturalized native of Taipei, Taiwan, China. While there, she attended public and parochial schools prior to immigrating to the United States in 1959. She graduated from Strayer College with a BS in accounting with honors.

She immigrated to Washington, DC, from Taipei, and currently resides with her husband and one son in Silver Spring, Maryland.

#### FROM PREVIOUS PAGE

limited to VSC? "LIMK1 does not affect the other cognitive traits and abilities we measured in the two SVAS kindreds, but more could be measured that may turn out to be affected," explained Mervis. "For instance, there may be an effect on the executive function of planning. People with classic WS have a great deal of difficulty on tasks such as the Tower of London. There is a generally strong correlation between spatial planning and ability in VSC." But as of yet, the executive function abilities of the members of the two SVAS kindreds have not been studied.

#### Implications for Intelligence

And what does this all tell us about the nature of intelligence, and the sometimes controversial issue of "g"? Mervis explains, "This is the way we think about it: Ability on pattern construction within the WS population is highly correlated with g. Those who have good backward digit span (i.e., working memory) are better at both language and pattern construction than those who don't. This suggests that there is some role for basic processes or central processes that many people equate with g. People with WS who are better at analytical tasks (e.g., the Raven matrices, generally considered the best single measure of g) are better at both language and pattern construction than those who do not perform well on analytical tasks. Visuospatial construction is definitely not decoupled from these people's other abilities, but it is an extreme weakness."

The study of LIMK1 is far from complete. Keating's lab is working to develop mice which have the LIMK1 gene deleted in

one copy of chromosome 7 (hemizygous "knockout mice"). Asked whether there are any cases were known in which a person was missing both copies of LIMK1, Mervis replied, "We are not aware of any homozygotes for the deletion. It remains to be seen whether such individuals [either mice or humans] are viable." When the knockout mice are ready, it may be difficult to test them for VSC. "Wild mice construct nests, but it isn't clear that laboratory mice can construct anything. Remember, the problem is quite specific for construction—perceptual matching is at the level expected for IQ."

No structural lesions are detectable by Magnetic Resonance Imaging (MRI) in the brains of people with WS who have been examined, and no brain imaging has yet been done on the partial WS individuals. Nor has anyone done functional brain imaging on people with WS. "One problem," explains Mervis, "is that people with WS are very sensitive to sound and have a lot of anticipatory anxiety," making them especially uncomfortable in an MRI device.

This research on LIMK1 provides a striking example of the potential of interdisciplinary research. Through the study of a rare genetic syndrome, a new window has been opened onto the field of human cognition and its development. Paul M. Rowe

Frangiskakis, et al., (1996). "LIM-kinase1 Hemizygosity Implicated in Impaired Visuospatial Constructive Cognition," Cell, July 12, Vol. 86, pp. 59-69.

Paul Rowe, a Washington, DC-based science writer, is a regular contributor to the *Observer*.

### **Trends ◆ Countertrends**

# A Large Physical Commitment To Psychological Science

Washington University embraces progress in psychology

Bucking the recent trend of cutbacks and a "less-is-more" philosophy in funding, Washington University in St. Louis has recently taken a big step—capped by the opening of a new \$28-million building to house the psychology department—to embrace, enhance, and further the behavioral sciences.

"Washington University is embarking on a program of development in my field that is quite ambitious and will be the envy of other universities," said Henry L. Roediger, III, who became chair of the Department of Psychology in Arts and Sciences at Washington University last summer. "With the outstanding new building and the support of the administration, the psychology department is poised to make a significant move forward."

But, in addition to the new building, dedicated in early October, the university plans to make eight to ten additional faculty appointments over the next few years "that will help us build on existing strengths in our department while further enhancing interdisciplinary ties with the neurosciences, medicine, and philosophy," said Roediger. "With the support of the administration, our department is poised to attract the nation's top students and faculty and to become a leader in psychology research and education."

The four-story, 105,000-square-foot building includes stateof-the-art teaching and research labs, auditoriums, office, and classroom space.

Mark S. Wrighton, chancellor of Washington University, described the building as a symbol of the university's commitment in moving forward in psychology.

"[Psychology] is an area that we believe to be of great importance for the future and one that we already can see is building on great traditions and achievements," he said at the new

psychology building's dedication, at which APS Charter Fellow Peter E. Nathan gave the keynote address. Nathan, a distinguished alum of Washington University, has authored 18 books and nearly 200 journal articles on alcoholism and other clinical issues, and has served on the faculties of Harvard Medical School, Rutgers University, and the University of Iowa. He opened the dedication festivities with a talk on "Treat-



Roediger

ments that Work—And What Convinces Us They Do."

"In this department of psychology, I'm sure you see the evidence that we do care and that great achievements ensue from

the activities here. In terms of significance to our institution, psychology means a great deal in terms of some of the more important key indicators," Wrighton added.

#### Poised for the Millennium

According to Wrighton, in an undergraduate population of only about 5,000, Washington University has 375 psychology



The new building at Washington University in St. Louis houses state-of-the-art teaching and research labs, auditoriums, office and classroom space.

majors. Thus "a very significant number of our students are involved," he emphasized.

He also made a point of highlighting, as do many who argue for more funding in the field, the contributions that psychology can make to other scientific and technological fields.

"We are entering a new age...and we see at this institution and in others that we're in the midst of a very important revolution .... And we see important opportunities for linkages between this department and the biological and medical sciences," he said. "Indeed, there are many opportunities for collaborative work that are already evident in the activities of this department. As we learn more and more about how we think, how we learn, I believe that you will see more and more significance associated with a department like this one."

#### Investment in Psychology

While the dedication of any building for a liberal arts or scientific discipline is heartening, the recent actions at Washington University are even more significant as funding for the social and behavioral sciences seems to be harder and harder to secure. "Obviously, the university has chosen to make a huge investment in psychology, which is heartening in this time of cutbacks and



# New Satellite Meetings to Coincide with 1997 APS Convention in Washington, DC

Look for more convention information and registration materials in the upcoming January Observer!

### **APS Introduces "Biology & Behavior Conference" at '97 Convention**

On May 23, 1997, APS will introduce a new convention feature at its Washington meeting. Specifically designed for psychophysiologists, psychobiologists, and behavioral neuroscientists, this one-day meeting will include short paper presentations (15-20 minutes) topically organized into two-hour sessions and an evening poster session.

The "Biology and Behavior Conference" was proposed by Joseph Steinmetz, in an attempt to attract more psychophysiologists, psychobiologists, and behavioral neuroscientists, to the APS Annual Convention. Letters were then sent to APS members with interests in this research area to assess their interests in attending such a meeting. The response to this survey was very positive with over 100 members indicating that they would attend this meeting this year, some bringing postdoctoral fellows and students with them.

Steinmetz will serve as the Program Chair for this meeting and will work with a committee of APS members who volunteered to assist in organizing the meeting.

As always, a number of psychobiology lectures, symposia, and poster sessions will be held during the regular APS annual meeting scheduled for May 23-26. There should therefore be presentations of particular interest for the satellite meeting participants during the annual meeting along with the excellent presentations of research from other areas of psychology. Members will be supplied further details concerning the "Biology and Behavior" meeting in future *Observer* issues and by mail.

#### NIDA Conference to Precede APS Convention in Washington, DC

The Behavioral Sciences Working Group at the National Institute on Drug Abuse (NIDA), in conjunction with the American Psychological Society (APS), will be sponsoring an all-day satellite meeting on May 23, 1997, titled "Cognitive Science Research: More Than Thinking About Drug Abuse." Alan Leshner, Director of NIDA, will open the meeting, which will feature many distinguished cognitive scientists. There will be an emphasis on the role of cognitive science in understanding the problem of drug abuse and addiction.

Invited speakers will focus on such topics such as animal cognition, the effects of drugs of abuse on cognitive ability, information processing, social cognition, and cognitive aspects of drug treatment and therapy.

The meeting will provide the opportunity for an active interchange between speakers and attendees for discussing cognitive science and drug abuse issues. The meeting will be open to the public. Conference participants are encouraged to stay and attend the '97 APS Convention at the Washington Hilton, May 23-26, 1997. For more information on the NIDA conference, call David Shurtleff at 301-443-1263.

## Coming soon in the January 1997 Observer...

Everything you will need to know for the 1997 Annual Convention of the American Psychological Society, to be held in Washington, DC, May 23-26, 1997!

#### FROM PREVIOUS PAGE

retrenchments," agreed Roediger, whose appointment as chair of the department was in itself a significant coup for the school. A respected researcher and scholar, author of more than 80 articles and chapters, and writer or editor of five books, Roediger has served as editor of two journals and has been elected to various regional and national leadership positions in psychological societies.

"The psychology department carries out one of the largest and most popular undergraduate programs in Arts and Sciences along with strong programs of research and graduate education," said Edward S. Macias, executive vice chancellor and dean of Arts and Sciences. "The department also is engaged in significant cooperation across disciplinary lines at Washington University. We are delighted that Professor Roediger will lead the department in these important endeavors."

In addition to Roediger, the department has also had success in luring other scholars to the trend-setting university, including APS William James Fellow Endel Tulving, an emeritus professor at the University of Toronto and currently the Tanenbaum Chair in Cognitive Neuroscience at the Rotman Research Institute in Toronto. Tulving has agreed to spend two to three months per year at Washington University as the Clark Way Harrison Distinguished Visiting Professor of Psychology.

"The new building has provided us with truly outstanding facilities," said Roediger. "It also provides us with a tangible symbol of the great things that lie ahead for this department." **E.R.** 





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#### HAKEL FROM PAGE 2

The summit might also consider targeting strategies (i.e., producing and distributing documents targeted for specific federal research agencies versus producing the typical HCI documents distributed through the *Observer*), and possible additional large-scale initiatives.

So what? Second only to representative government, I believe that scientific research is the most important societal institution to evolve in our history. And sometimes, especially when looking at election results, I am not so sure that representative government deserves first place. Whether or not your current view of the election outcome gives you an optimistic outlook for the next two years, we as psychological scientists have to present the case for investment in behavioral research clearly and persuasively.

The past two years show that diligence and persistence work. It would now be utter folly to lessen our advocacy effort in the hope that Congress and the administration will be "kinder and gentler," to borrow a phrase from another era. Competition for scarce resources will intensify in the next two years, and we need to unite in support of bringing basic and applied psychological science to bear on the tangible problems our country now faces.

Copies of *The Changing Nature of Work*, *Vitality for Life*, *Doing the Right Thing*, and *Reducing Mental Disorders* are available from the APS Office, and publication of *Violence in America* is expected shortly.

Milton D. Hakel is Regents' Scholar and Professor at Bowling Green State University.

OBSERVER



#### CONGRESS FROM PAGE 1

news report, which, thanks to the efforts of NIMH leaders (and, of course, the intrinsic value of the research), ended up becoming a showcase for explaining behavioral science to the nation.

And, at NSF, the impact of the attacks—compared to the 1980s—was attenuated significantly. Changes in NSF's leadership structure—specifically, the presence of an assistant director for behavioral science (a position that did not exist in the 1980s) and a deputy director who was a psychologist—made the difference this time. NSF resisted attempts by the chair of the House Science Committee to eliminate the Foundation's behavioral and social science directorate.

#### 'Tis a Far Better Thing

These tribulations aside, the 104th Congress really did represent the best of sessions for behavioral science. Science received strong support generally, and behavioral science in particular did very well.

Last year, Congress appropriated a 5.9 percent increase to NIH as a whole. This year it was a 6.5 percent boost (6.9 percent if you count \$90 million for NIH Clinical Center construction), bringing the NIH budget to \$12.7 billion. Along with this generous treatment, Congress sent a series of strong messages to NIH proposing new directions for expanding and strengthening its behavioral science portfolio. Training received the most attention, but a range of topics was addressed, including SIDS (sudden infant death syndrome), drug and alcohol research, psychopathology, research on the brain and behavior, clinical experiences for basic behavioral researchers, and aging.

As always, the congressional budget was accompanied by explanatory reports that the House and Senate appropriations committees write each year to amplify their views on NIH spending. In any year, being included in these reports is no small feat, given the enormous competition from specific causes clamoring for inclusion. But this recognition is even more important than in previous years because of the ongoing budget deficit debate, which, at least publicly, was dominated by a cadre of legislators focused on very near-term budget cutting, either for fiscal or ideological reasons.

The House appropriations reports for NIH and behavioral science were featured in the July/August 1996 *Observer*. Many of the same issues were addressed in the Senate version, described below. The verbatim text from the Senate report accompanies this article on the next page.

#### Don't Worry...B/START

Both sides of Congress strongly encouraged the use of B/START (Behavioral Science Track Awards for Rapid Transition) grants to ensure a supply of young behavioral science investigators at the National Institute on Child Health and Human Development (NICHD), the National Institute on Aging (NIA), and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). In addition, they asked the NIH Office of Behavioral and Social Sciences Research (OBSSR) to work with all institutes to develop small grants programs for young behavioral science investigators.

B/START grew out of concerns about the "greying" of the field, as indicated by the documented decline in support for young

investigators at the NIMH, the National Institute on Drug Abuse (NIDA), and elsewhere. In an NIMH/APS collaboration, NIMH launched the first B/START program in 1994. More recently, NIDA announced its own B/START program, an event marked this year by the Senate. (See NIDA B/START article on page 4.)

"The Committee is pleased to see that NIDA has initiated this program, which invites newly independent investigators to submit applications for small-scale pilot research projects related to the behavioral science mission," noted the Senate report. This latest round of congressional encouragement is prompting other institutes to look closely at establishing similar programs.

#### Teach Your Children

Both the House and Senate asked about NIH's plans to implement the recommendations of the National Academy of Sciences (NAS) for the National Research Service Awards (NRSA). Those recommendations were to increase the number of awards in behavioral science (as well as nursing, health services, and oral health research) while keeping level the number of biomedical science awards. Noting that NIH has not implemented the NAS recommendations, Congress has asked the NIH Director to report back with a plan and timetable to do so.

#### **Drug Abuse Research**

In addition to the favorable review for NIDA's B/START program (above), the House and Senate underscored the primacy of behavioral interventions in the treatment of drug abuse—for some drugs, such interventions are the only treatments available—and strongly commended NIDA's support for basic and clinical behavioral research "aimed at better identifying those at risk for drug abuse and developing effective approaches for breaking the cycle of addiction." NIDA's behavioral therapies development program was singled out for special recognition. Congress also encouraged NIDA's continued research in HIV/AIDS, noting the role of drug use and related behaviors in the spread of HIV.

#### **NIMH Research Plans**

Both the House and Senate said they were "pleased" to learn about the Human Capital Initiative (HCI) report on psychopathology research, and asked NIMH to report to Congress on plans for using the report, *Reducing Mental Disorders: A Behavioral Science Research Plan for Psychopathology*, in next year's appropriations hearings.

The HCI is a national behavioral science research agenda begun under the auspices of APS by representatives of more than 70 behavioral and social science organizations. (See Guest Contributor Milton Hakel's Presidential Column on page 2 of this issue of the *Observer*.) The HCI describes the current state of knowledge in various areas and identifies the most promising areas of need for behavioral research in those areas. It is intended to guide NIH programs and Congress in establishing research priorities. In addition to the report on psychopathology research, HCI reports have been developed in a number of areas, including aging (see the section on NIA, below), productivity, and health and behavior. Further information and copies of the HCI reports are available from APS.

### FY 1997 Senate Appropriations Report ...

#### NATIONAL INSTITUTES OF HEALTH

The Committee is concerned about the future supply of the Nation's health researchers, and believes that NIH [must] continue efforts to ensure a stable supply of highly qualified research scientists. The National Academy of Sciences, in its latest report, recommended that NIH increase the number of scientists in behavioral science, nursing research, health services research, and oral health research. The Committee encourages NIH to make a focused effort to train young scientists in these critical areas and to consider small grant programs to provide support to new investigators.

National Institute of Child Health and Human Development

Sudden infant death syndrome [SIDS]—SIDS, the leading cause of death for infants under 1 year of age, continues to be a concern of the Committee. The Committee is pleased to learn that the Institute's Back to Sleep campaign, convincing parents to put babies to sleep on their backs or sides, rather than on their stomachs, has reduced the number of SIDS deaths in the Nation. This campaign has played a major role in the 4 percent decline in infant mortality in 1993-94, to an alltime low of 7.9 per 1000 live births. To continue this progress, the Committee has urged the NICHD to make funding available for the third year of the second SIDS five-year research plan. These plans, developed in collaboration with the SIDS scientific and advocacy community, have provided guidance, structure, and support to the NICHD SIDS research program.

The "Back to Sleep" campaign also illustrates the value of behavioral and social science research: meta-analyses of SIDS studies revealed the role of sleeping position in infant deaths; the concept of changing parents' behavior toward their babies and changing what pediatricians tell parents is based on the social psychology of attitude change research and persuasive communication; and the intervention itself—changing sleeping position—is a behavioral one. The Committee encourages NICHD to continue its efforts to reach all populations to reduce SIDS deaths.

Training—As part of its effort to ensure the future supply of essential research personnel, the Committee encourages the NICHD to support an initiative such as B/START (behavioral science track awards for rapid transition), aimed at younger behavioral science

Learning disabilities—The Committee is pleased to recognize

the important discoveries NICHD has made in identifying the causes of and best interventions for reading disabilities. The Committee commends this research, and encourages its quick dissemination.

National Institute on Aging

Training—As part of its effort to ensure the future supply of essential research personnel, the Committee encourages the NIA to support an initiative such as B/START (behavioral science track awards for rapid transition), aimed at younger behavioral science researchers.

Applied gerontology centers—The Committee encourages NIA's commitment to the Edward R. Roybal applied gerontology centers, where research critical to the functional independence of our elderly citizens is being conducted, as recommended in the NIA human capital initiative report, "Vitality for Life." Scientists in these centers are involved in such topics as developing ways to help older citizens use medications correctly, training older workers in technology-driven work environments, training older adults to use computers generally, and developing visual screening tasks for older drivers along with training techniques to improve attention and prevent accidents. The Roybal centers represent the important translation of many years of basic NIH research into applications that improve the lives of older Americans.

#### National Institute on Alcohol Abuse and Alcoholism

Training—Since behavioral factors are integral to alcoholism and alcohol abuse, the Committee encourages NIAAA to begin an initiative to support newer behavioral researchers, such as B/START (behavioral science track awards for rapid transition).

Behavioral research—The Committee is interested to learn that Project MATCH, the Institute's clinical trial of patient-treatment matching and treatment effectiveness, is approaching completion, and requests that the NIAAA be prepared to report on the results of this important research during the fiscal year 1998 budget hearings.

National Institute on Drug Abuse

Behavioral research—The Committee understands that behavioral research is essential to solving problems of drug abuse and addiction, and that behavioral and psychosocial interventions are the most frequently administered treatments for drug addiction and in

#### FROM PREVIOUS PAGE

The Senate also reiterated its support for an NIMH-sponsored report, *Basic Behavioral Science Research for Mental Health: A National Investment*, and expressed support "in particular...for the recommendations to fund more investigator-initiated behavioral research, provide new funding mechanisms for longitudinal behavioral research, and expand study sections for the best possible review of behavioral science." The basic behavioral science report is similar to the institute's plans in neuroscience, schizophrenia, child mental health, and other areas. It has been encouraged in several previous appropriations reports in both the House and Senate and was circulated to the entire Congress by appropriations leaders in both houses.

#### Clinical Experience

Congress also encouraged stronger links between basic and clinical research by urging NIMH to "build a generation of basic behavioral researchers who [is] sensitive to clinical issues." Suggested mechanisms included participation by nonclinical

behavioral science graduate students on NIMH grants in medical settings, and supporting clinical psychology student research in severe mental disorders.

#### **Alcohol Treatment Matching**

NIAAA has undertaken a large patient-treatment initiative, Project MATCH, which has enormous implications for the effectiveness of behavioral therapies aimed at alcohol abuse. Both the House and Senate expressed interest in this project and requested a report on the results. They also encouraged NIAAA to establish a B/START program.

#### SIDS Success

The Senate Committee applauded NICHD's "Back to Sleep" campaign (telling parents to put babies to sleep on their backs) for reducing the number of sudden infant death syndrome (SIDS) deaths. Further, the Senate pointed out that the campaign illustrated "the value of behavioral and social research: metanalyses of SIDS studies revealed the role of sleeping position in

### ... Excerpts from Report 104-368

some cases, are the only available treatment. The Committee commends NIDA for expanding both its basic and clinical behavioral science activities in order to better identify who may be at risk for falling victim to drugs, and to develop effective approaches for breaking the cycle of addiction. Of particular interest are NIDA's behavioral therapies development program, which applies the same controlled evaluation process as is used in evaluating new medications to the assessment of behavioral therapies. The Committee also commends NIDA's initiatives in the fight against AIDS/HIV because of the increasing link between HIV infection and drug use and related behaviors.

...The Committee notes that NIDA has initiated the B/START program to increase the supply of young investigators in behavioral science. The Committee is pleased to see that NIDA has initiated this program, which invites newly independent investigators to submit applications for small scale pilot research projects related to the behavioral science mission.

#### National Institute of Mental Health

Clinical experiences—The Committee appreciates that a great deal of basic behavioral research can be brought to bear on the most serious of mental disorders and encourages NIMH to develop mechanisms to build a generation of basic behavioral researchers who are sensitive to clinical issues. For example, the Committee encourages the Institute to give consideration to allowing non-clinical graduate students in psychology and other behavioral sciences to have research experiences on NIMH grants in medical settings. Similarly, for clinical psychology programs, particularly those housed outside of medical schools, the Committee encourages NIMH to provide student support for research in settings in which severe mental disorders are the focus.

Research plans—The Committee is pleased to learn that NIMH supported the development of a behavioral science research plan aimed at reducing depression, schizophrenia, and other severe mood and anxiety disorders. The plan, "Reducing Mental Disorders: A Behavioral Science Research Plan for Psychopathology," was developed under the auspices of the human capital initiative and has been endorsed by an impressive range of scientific organizations. The Committee urges NIMH to use the plan in determining its research priorities, and requests the Institute to be prepared to report on how it intends to use the plan during the fiscal year 1988 hearings. Finally, the Committee

infant deaths; the concept of changing parents' behavior toward their babies and changing what pediatricians tell parents is based on the social psychology of attitude change research and persuasive communication; and the intervention itself—changing sleeping position—is a behavioral one."

#### **Heady Research**

Congress applauded the National Institute on Neurological Disorders and Stroke (NINDS) for supporting research on the role of behavior in diseases and injuries of the brain. The Senate Committee elaborated on this point, saying that such research is central to the Institute's mission and that "while...impressed by the advances that have been achieved in brain imaging technology,...similar advances must be achieved in behavioral research in order to reduce the devastating public health toll taken by brain injuries and disorders." The May/June 1996 Observer detailed NINDS's support for behavioral research, which prompted the congressional notice.

reiterates its support for the National Advisory Mental Health Council's report, "Basic Behavioral Science Research for Mental Health: A National Investment." In particular, the Committee supports recommendations to fund more investigator-initiated behavioral research, provide new funding mechanisms for longitudinal behavioral research, and expand study sections for the best possible review of behavioral science.

#### Office of the [NIH] Director

Office of Behavioral and Social Sciences Research—The Committee is pleased that the OBSSR has established a research training task force. The Committee encourages the Office to work with NIH Institutes to develop small grants programs for young investigators, such as the B/START program. The Committee believes that funds for such programs should not be allocated from within existing behavioral science research funds.

National research service awards—The Committee notes that the National Academy of Sciences recommended in its most recent assessment of the Nation's need for biomedical and behavioral researchers that NIH increase the number of NRSA awards in behavioral science, nursing research, health services research, and oral health research, while keeping the number of NRSA awards in the basic biomedical sciences at fiscal year 1993 levels. The Committee requests that the Director report to the Committee on NIH's response to the recommendations, progress in implementation, and timetable for completion prior to the fiscal year 1988 hearings.

#### CENTERS FOR DISEASE CONTROL AND PREVENTION

The Committee commends the Director's efforts to promote behavioral and social sciences research at CDC and for creating the position of Assistant Director for Behavioral and Social Sciences. The Committee believes that such research is integral to the CDC mission. With the Committee's support, a similar office of behavioral and social sciences research was created at the National Institutes of Health. It has proven effective in identifying promising new directions for research. The Committee requests the Director to provide a status report on CDC's activities relating to behavioral and social sciences research.

#### Vitality for Life

Both the House and Senate encouraged NIA to use B/START to train younger behavioral science researchers. In addition, the Senate commended NIA for supporting applied gerontology centers "where research critical to the functional independence of our elderly citizens is being conducted, as recommended in the NIA [HCI] report, *Vitality for Life.*" This report, which has received attention several times in appropriations reports, is part of the Human Capital Initiative series of behavioral science agendas in various areas. (Copies of *Vitality for Life* and all other HCI reports are available from APS.)

#### Behavioral Science at CDC

The House and Senate appropriators also commended the Centers for Disease Control and Prevention (CDC) for its expanded behavioral science program. They expressed the view that these are important parts of the CDC mission and asked for a status report on CDC's efforts in these areas. **S.B.** 



#### BERTENTHAL FROM PAGE 1

his capacity as Assistant Director, he expects that criticism will continue.

"I hope that the controversial part of funding social and behavioral research is behind us, but I suspect that it really isn't," he said. "There will continue to be some skeptics, or at least, people who are uninformed about the ways in which behavioral research needs to be studied scientifically and how it is really foundational to our ability to better understand the needs of the people. It would be delightful if there weren't any renewed controversies, but I think that I am prepared and I will not be surprised if there are new individuals who come on the scene [after Walker retires] and question the appropriateness of funding behavioral research."

#### Confidence in Leadership

Leaders in the behavioral and social sciences community have confidence in Bertenthal's ability, not only to handle any nay-sayers in Congress, but in his ability to further the field.

"Bennett and I talked several times over the past few months about where NSF could go in behavioral and social science," said APS Executive Director Alan Kraut. "We both agree that there are

enormous opportunities for growth. The fields are ready to explode, the staff is terrific, and the leadership is supportive. I am delighted he accepted the position and think he is exactly the kind of person to take NSF to its next level in behavioral science."

Anne Petersen, who recently resigned as Deputy Director of NSF to

join the Kellogg Foundation, described Bertenthal as highly regarded as a scientist. "[He] will be a tremendous asset to NSF and psychology in linking the social and behavioral sciences with the physical and other sciences. He also comes with very high marks for his service to scientific societies. He brings tremendous energy and intelligence to the position."

Bertenthal, who specializes in studying the origins and early development of perception, action, and representation, will take the helm of the SBE in January 1997. Jeff Fenstermacher, who has served as executive officer of SBE since 1991, is serving as Acting Assistant Director until then. Bertenthal's new duties will include leading the Foundation's research activities that build fundamental scientific knowledge of human behavior and characteristics, and social and economic systems and organizations; directing activities in support of the Foundation's international endeavors; and overseeing the collection, analysis and publication of data on the status of the nation's science and engineering resources.

Bertenthal has been on the faculty of the University of Virginia since 1979 and admits that the transition from academia into the administrative word of NSF will take some time.

"I think it is going to take a while to develop the appropriate mind-set because up to this point I have been in a position where my principle responsibilities have been toward my own research and toward teaching," he said. "Now the arena has changed considerably both in terms of thinking about the collective research of the scientific community and in trying to provide some new ideas and new strategies that can be used by others."

Bertenthal earned both his master's degree and his doctorate in developmental psychology from the University of Denver. He then served as a postdoctoral fellow at the Brain Research Institute and Department of Pediatrics at the University of California-Los Angeles School of Medicine before joining the University of Virginia as an Assistant professor in 1979, working his way up to full professor in 1991. A fellow of both the American Psychological Society and the American Psychological Association (APA), Bertenthal has also been active in the Society for Psychophysiological Research (SRCD), the Psychonomic Society, and the International Society for Infant Studies.

During his tenure at the University of Virginia, he served as associate editor of the journal *Developmental Psychology*, co-chaired the program committee for the SRCD, and served as members of

APA's Division 7 Executive Committee and the Committee on Scientific Awards. Over the course of his career, he has received many grants and, for the past 10 years, has reviewed grants for both the National Institutes of Health and NSF. "I am making a transition from being a bench scientist to an administrator and that is a very new and unknown situation," said Bertenthal about his move to NSF. "[But] I feel that after many years of being a consumer of federal research funds, I have some insight into what researchers need from the federal funding agencies to be able

I think that we really need to begin to harness all of the potential resources of people, learn how we are going to best take advantage of their capabilities, and develop ways to make sure that people have an opportunity to realize their own potential. There is so much that we still need to learn and the Human Capital Initiative is a place where I think there is a natural and very exciting partnership between the SBE Directorate and education and human resources.

BENNETT I. BERTENTHAL

to better conduct their research."

Some of the issues Bertenthal hopes to get involved with pertain to the grant award and review process, though he cautions that it is too soon for him to lay out an agenda.

"It is a little premature to say exactly what my priorities are at this point," he said. "I have specific biases based on my previous experience and they specifically relate to trying to expedite the review process—if that is at all possible. I would like to see if there is a way that grants could be reviewed more quickly with a faster turnaround of grant applications—perhaps using shorter applications and/or standardizing applications so that there is no difference between NSF and other institutes' applications."

He added that this process could involve rethinking—along with the rest of the Foundation—some of the criteria currently used for evaluating grants. He said he is also especially interested in trying to develop some additional strategies for supporting young investigators.

His first order of business, though, will be to learn and absorb



### COGNITIVE NEUROSCIENCE

#### McDonnell-Pew Investigator-Initiated Grants

The McDonnell-Pew Program in Cognitive Neuroscience is accepting proposals from individuals pursuing innovative, multi-disciplinary research investigating the relationship between human cognitive function and the underlying brain mechanisms

Individuals currently receiving support from the McDonnell-Pew Program are not eligible to apply for Investigator-Initiated Grants. Individuals at institutions with McDonnell-Pew Center grants but who do not receive any support from the Center are eligible to submit proposals.

Projects are expected to include input from two or more of the disciplines contributing to cognitive neuroscience: clinical and basic neuroscience, psychology, computer science, linguistics and philosophy. An emphasis on higher cognitive functions is preferred.

The grants provide a maximum of \$35,000/year for up to three years. An institutional overhead of 10% of total salary and fringe benefits may be requested but **must** be included in the \$35,000/year maximum. The funds may be used to support research, postdoctoral training or to provide seed money for investigators exploring new research directions. Proposals establishing interdisciplinary and/or inter-institutional collaborations are encouraged. Requests for funds to support graduate student thesis research will not be accepted.

Deadline for receipt of proposals: February 26, 1997. The awards will be announced in June, 1997.

Further information and application guidelines may be obtained via the Internet: http://www.jsmf.org or by contacting:

Susan M. Fitzpatrick Ph.D., Program Officer, McDonnell-Pew Program in Cognitive Neuroscience, James S. McDonnell Foundation, 1034 S. Brentwood Blvd., Suite 1610, St. Louis, MO 63117

Email:c06819CN@wuvmd.wustl.edu, Telephone:(314)721-1532, Fax:(314)721-7421

We encourage you to use the Internet or email whenever possible

#### FROM PREVIOUS PAGE

as much about the Directorate as possible. "I want to find out as much as I can about what the real needs are that are represented by SBE and to learn as much as possible about the operation of SRS, which is the social and technological indicators division," he said. "I need to begin really talking to people and finding out what they have been doing in their various positions and also finding out how I might be able to best facilitate what they have been doing."

In spite of all of the preliminary "getting-to-know-you" work he faces in the first few months of his tenure at NSF, Bertenthal is exited about the issues and programs NSF will be dealing with as it transitions into the next century—especially as it pertains to technology.

#### Learning and Technology

"I think that one of the most important initiatives at NSF right now is the new initiative on learning and intelligence systems as we move into a new century and a new millennium," he said. "Technology is going to continue to dominate our lives and we need to learn as much as possible about how to use expanding technology in ways that can improve the quality of life and ensure that it doesn't lead to greater differentiation among different groups of people, which is a potential problem in that it could tend to exacerbate [economic and social] differences among people. It is a very exciting time for thinking about how behavioral science really plays a fundamental role in virtually all science, and I think there is a growing appreciation within the Foundation for the important role it plays."

It is for these same reasons that Bertenthal believes in the

# PHD PROGRAM MATHEMATICAL BEHAVIORAL SCIENCES UNIVERSITY OF CALIFORNIA, IRVINE

The PhD program in Mathematical Behavioral Sciences at the University of California, Irvine (UCI) is designed to provide the highest level of training in current mathematical modeling and in mathematical skills appropriate for the behavioral sciences. It is ideally suited to students with highly developed mathematical skills and multiple interests who do not necessarily identify strongly with any one substantive field. The program is administered by and interdisciplinary group of faculty including the departments of anthropology, cognitive sciences, economics, mathematics, psychology, political science, and sociology. The program leads to the PhD degree in Social science with a concentration in Mathematical Behavioral Science.

Three major sources of support exist: (a) a limited number of scholarships, for which the faculty may recommend entering graduate students; (b) research assistantships through faculty-specific research grants awarded at the discretion of each grant's principal investigator, and (c) teaching assistantships funded by the campus and awarded by the School on a competitive basis. Contact:

#### Graduate Advisor School of Social Sciences Irvine, CA 92697-5100

UCI is rooted in education, enriched by diversity. E-mail: immaldon@uci.edu. Visit our Web site at http://www.socsci.uci.edu/mbs/index.html.

importance of the Human Capital Initiative, the umbrella behavioral science research agenda spawned by APS. "I think that we really need to begin to harness all of the potential resources of people, learn how we are going to best take advantage of their capabilities, and develop ways to make sure that people have an opportunity to realize their own potential. There is so much that we still need to learn and the Human Capital Initiative is a place where I think there is a natural and very exciting partnership between the SBE Directorate and education and human resources. It is also a more general goal of mine to try take advantage of the strengths available across the Foundation for both facilitating research and specifically for learning more about human behavior and the social conditions that are currently present in the country," he added.

Another project he hopes to pursue, initiated by his predecessor, is a thorough survey of the current situation among graduate students in science and technology that would examine how successful they are in completing their graduate programs and what they are doing afterwards, as well as what types of available funding exist and whether there is any evidence that different forms of funding may provide different outcomes for students.

"At this point it is too early for me to feel confident in terms of stating where I see the Directorate going," he said. "I really want to emphasize the need for trying to absorb as much as possible about the needs of the members of the Directorate as well as better understanding some of the priorities at NSF. It feels a little like beginning a great journey and not knowing exactly where I am heading. But I am very excited by the challenge, and I think it is a great opportunity for me to try to help shape science." E.R.



# **Teaching Tips**

TEACHING TIPS provides the latest in practical advice on the teaching of psychology. TEACHING TIPS is aimed at current and future faculty of two- and four-year colleges and universities.

Complementing the Annual APS Institute on the Teaching of Psychology, TEACHING TIPS will inform teachers about the content, methods, and profession of teaching. Chief editor Baron Perlman and Co-editors Lee McCann and Susan McFadden, all of the University of Wisconsin-Oshkosh, welcome your comments and suggestions.

Send article ideas or draft submissions directly to Barry Perlman, TEACHING TIPS Editor, Dept. of Psychology, Univ. of Wisconsin-Oshkosh, Oshkosh, WI 54901-8601; Tel.: 414-424-2300; Fax: 414-424-7317, Bitnet: PERLMAN@OSHKOSHW; Internet: PERLMAN@VAXA.CIS.UWOSH.EDU

Teachers who are located at smaller colleges and universities with modest computer resources will be especially interested in this TEACHING TIPS article. Presented here are tips to focus their sites on the most important things they can do to capitalize on computer technology and benefits for their psychology department. —The Editor

## Thirteen Ideas to Help Computerize Your Course

James V. Ralston Barney Beins Ithaca College

Whether you're a computer neophyte or computer guru, you will find here ideas for some useful high-tech supplements to traditional education methods, and we hope to persuade you to explore further the many facets of computer-aided instruction. As a starting point for your own investigations into hardware/software advances and even cyberspace itself, the accompanying table provides examples of currently available software useful in teaching.

In the meantime, below is a brief description of 13 applications of computers to facilitate teaching of psychology. In 13 easy steps you can wean yourself from the shame of teaching without computers or update your computer utilization. While some

steps sound complicated, most are rather simple, especially since more sophisticated equipment and software are becoming increasingly available and at decreasing prices.

Keep in mind, too, that as a member of an educational institution you, your students, or your department often will qualify for substantial discounts on software and equipment. For example, very sophisticated computer programs with retail prices in the hundreds or even thousands of dollars are sometimes available in "student versions," allowing students to learn on software that, while often not full-featured versions, is sufficient to enhance student training significantly.

#### Thirteen Steps to Computerization

1. Teach your students how to use computers. Of course, it's not the job of most psychologists to teach computer

courses, but there are very good reasons to teach general and specific computing skills within psychology courses. Let's face it, not all your psychology majors are going to carve out a career in brain chemistry or group dynamics. Those that acquire sophisticated computer skills will be more competitive for jobs in the real world. Those that pursue careers in psychology will benefit particularly from detailed understanding of computers and their operation as well as computer programming at system level through higher-level languages.

#### 2. Digitize your textual materials.

Recording your course materials on electronic media probably has the greatest cost-benefit ratio of any effort to add to or enhance the computerization of your teaching. Once in computer memory, materials can be modified easily for use in a wide variety of applications. Naturally, you can write examinations with a word



processor and easily produce alternate forms of an exam.

3. Put your gradebook into an electronic gradebook or spreadsheet. Although useful gradebook programs are available, we've found that general-purpose spreadsheets are fine, and, in some ways, preferable to specialized gradebook software. Any decent spread-

sheet has the capacity and flexibility to handle even the most unusual grading scheme, and the results can be easily exported to other applications, such as word-processors. For the less adventure-some, specialized gradebooks are still a large improvement over paper-based records. In either case, electronic gradebooks and spreadsheets save you from repetitive calculations and are much

more malleable than more traditional gradebooks.

You can almost completely automate the testing process if your institution has an optical scanning system that can produces ASCII text (i.e., plain alphanumeric characters devoid of special codes for features such as bold, italic, indent, tab). Have

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# SELECTED SOFTWARE TO SUPPORT TEACHING OF PSYCHOLOGY

E-mail  Experimental Control  Flat-bed Scanning  -TP  Graphing	QUALCOMM Eudora DEC TeamLinks CMU Psyscope ITP MacLaboratory Cedrus SuperLab Light Source Ofoto Dartmouth Fetch	QUALCOMM Eudora DEC TeamLinks PST MEL CMS Psychology on a Disk
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		Rapid Filer
arapning		SPC Harvard Chart XL
	Microsoft Excel	
AND AND A STATE OF THE STATE OF	CA Cricket Graph III	Jandel SigmaPlot
mage Manipulation	Adobe PhotoShop	Adobe Photoshop
Multimedia (canned)	ITP MacLaboratory	Harcourt The Core
	ITP Exploring Psych. Disorders	
	Harcourt The Core	
Multimedia Authoring	Claris HyperCard	Asymetrix ToolBook
	Macromedia Director	Macromedia Director
	Macromedia Authorware	Macromedia Authorware
Newsbrowser	Value Added NewsWatcher	Free Agent
Painting/Drawing	Macromedia Freehand	Macromedia Freehand
all lilly/Drawing	Fractal Design Painter	Fractal Design Painter
2	Adobe Illustrator	Adobe Illustrator
Presentation	Microsoft PowerPoint	Gold Disk Astound
of the property of the control of	Adobe Persuasion	Adobe Persuasion
Simulation	ITP Sniffy	Crofter The Alley Rat Pack
	MIT PDP	MIT PSDP
Sound Manipulation	Macromedia SoundEdit 16	Creative SoundBlaster AWE 32
MANAGEMENT NUMBER OF THE PARTY	Cornell Canary	AVAAZ CSRE
Spreadsheets	Microsoft Excel	Borland Quatro Pro
all Canting to Sharper which		Microsoft Excel
Statistics	SPSS	SPSS
Stationed	Data Description DataDesk	Ol OO
	SAS JMP	
Telnet Telnet		Host Presenter
	NCSA Telnet	
/ideo Manipulation	Adobe Premiere	Adobe Premiere
Web Authoring	Adobe PageMill	Microsoft FrontPage
Harry Company of the	SoftQuad HoTMetaL	Quarterdeck WebAuthor
Web Browser	Netscape Navigator	Netscape Navigator
	Microsoft Explorer	Microsoft Explorer
Web Server	BIAP MacHTTP	Netscape Communications Serve
	BIAP WebStar	
Word Processing	Microsoft Word	Microsoft Word
	Novell WordPerfect	Novell WordPerfect

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the ASCII file e-mail to you. You can then import the file into your gradebook/ spreadsheet file. This that is very useful for large survey-type courses.

4. Digitize your analog materials. With the advent of computerized delivery systems such as the Internet now is a great time to start digitizing your overhead transparencies, sound clips, and video clips. It only takes about a minute to convert an image to electronic form, and digitized materials are easy to incorporate into documents or computerized presentations, using presentation software (see next item in this list).

5. Present traditional lecture materials. Several varieties of presentation software can help you organize and display notes and graphics on a projector screen. This is a great application of your newly digitized materials; and easily created animations can help engage students' interest. Computer-aided presentations help give a professional touch to your lectures. In order to show a computer display to a large class, you will need to connect your classroom computer to a projection system. This is accomplished with a projection plate that is placed over a high-intensity overhead projector.

- 6. Teach statistics. Want a novel way to show students how to calculate a standard deviation? Want an in-class method to empirically estimate the distance between the fovea and one's visual blind spot? There is nothing like a projected spreadsheet or statistical program to eliminate chalkboard calculations. Menu-driven statistics programs are also much easier for students to use than more traditional command-line systems, allowing students more time to appreciate the concepts underlying statistics (or, so we hope).
- 7. Simulate psychological processes or phenomena. Why just talk about neural networks or conditioning? Instead, show your students the real thing, or at least show them a reasonable approximation. There may be nothing so useful as a hands-on exercise in which students train

a "virtual rat," or process an image with a visual neural network. Some programs even allow students to generate hypothetical experimental designs and corresponding, stochastic data sets, allowing students to focus more on the analysis and interpretation of data than on the execution of experiments.

8. Use multimedia as tutorials.

There are some multimedia (i.e., two or more types of media, such as text and pictures) titles that provide short sound clips and video clips as well as animations, and text, often in an interactive environment. These are distributed on diskettes, CD-ROM, the Internet, and laser disk.

Lecturing about psychopathology? Why not show a video clip of Charles Manson and let students work their way through a binary decision tree to arrive at a DSM-IV diagnosis? Multimedia is a great supplement to in-class content that may help clarify difficult concepts.

9. Conduct experiments or demonstrations. Experiment control programs generally present pictures, sounds, or video clips to subjects and allow the collection of various types of responses from subjects. There are even control files for the general-purpose experimental control programs or special-purpose programs that are preconfigured to conduct classic psychology experiments.

**10.** Use the Internet as a resource. Here is just a sampling of teaching-related Internet-based information:

Online card catalogs show the holdings of the Library of Congress and various university's libraries. Everevolving conversations about the teaching of psychology are available for participation by subscribing to the Teaching in Psychology listserv (i.e., listserv@fre .fsu.umd.edu).

Online tutorials are available for a variety of software. Remote participation in experiments is possible through several departmental web pages (e.g., http://www.ithaca.edu/hs/psych/pscyh1).

UseNet newsgroups provide innumerable opportunities to engage you in conversation in your special interest areas, provided that your computer server provides news feeds from UseNet. Want

to get in on some continually evolving conversations about Jungian analysis? Then, subscribe to the appropriate UseNet newsgroup (e.g., alt.psychology.jung) and read on! Several departmental web pages (e.g., http://www.ithaca.edu/hs/psych/psych1) are viewable through a web browser program (e.g., Mosaic, NetScape). Dozens of such departmental pages are accessible through the APS web site at http://www.hanover.edu/psych/APS.

11. Use the Internet as a delivery mechanism. The web can deliver anything that is in digital form, from pictures to experimental programs to administrative materials. Remember the course materials you just digitized? You can provide access to them through the web. If you want to put your materials on the web, it is primarily a matter of formatting the layout of your documents by embedding HTML (HyperText Markup Language) tags in an ASCII file. This task has been made trivial with the advent of WYSIWYG (What You See Is What You Get) web authoring programs, which require no knowledge of HTML. Once the files have been created, they need to be placed on a networked computer with web server software. Web-based materials provide the basis for an aesthetically appealing, paperless system that is accessible virtually anytime and anywhere.

12. Use the Internet as a communication device. You can make yourself more accessible to your students. Electronic mail, listservs, and UseNet newsgroups help break down barriers to communication between faculty and students, providing a nearly fool-proof conduit between the two. It provides for "24-hour" office hours, so that students can get information from (e.g., class notes, reading assignments, data) and post information to (e.g., completed quizzes or exams, reports, summaries of literature) a centralized information center.

Electronic services can also help break down barriers between students. For example, they can share information among themselves, such as notes, data sets, or other collaborative works-in-

SEE TIPS ON PAGE 27

### People

#### Recent Promotions, Appointments, Awards...

APS Charter Fellow **James S. Jackson** was recently appointed to the National Institute on Aging's (NIA) Advisory Council on Aging by Health and Human Services Secretary Donna E. Shalala. Jackson is the Daniel Katz Distinguished University Professor of Psychology and director and research

scientist at the Research Center for Group Dynamics at the University of Michigan's Institute for Social Research. The Advisory Council advises NIH on the conduct and support of biomedical, social and behavioral research, training, health information dissemination, and other programs involving aging and the diseases



and needs of the aged. Jackson, who is also a faculty associate at the Institute of Gerontology at the University of Michigan, earned his PhD from Wayne State University and has taught at the University of Michigan since 1971. His current area of research is a life-course perspective on adult development and aging. He is one of six new members recently appointed by Shalala for a four-year term. Two-thirds of the 18-member council are from health and scientific disciplines, and one-third is made up of the general public. The NIA, a component of the National Institutes of Health within the Public Health Service in HHS, is the lead federal agency supporting and conducting biomedical, social, and behavioral research and training related to aging and the special needs of older people.

Congratulations are extended to the five APS members

who were elected to the American Academy of Arts and Sciences this year. In the section on Social Relations, Jean Mandler (University of California-San Diego), Daniel Schacter (Harvard University),



Mandler



Richard Shiffrin (Indiana University), and Claude Steele (Stanford University) were elected. In the section on Physiology, Pharmacology, Neurobiology, and Behavioral Biology, Larry Squire



People News Welcomed . . .

The Editor invites submissions of announcements of noteworthy promotions, appointments, etc., for possible publication in the **People** news section of the *Observer*. Send with photo to: *APS Observer*, 1010 Vermont Ave., NW, #1100, Washington, DC 20005-4907; Email: LHerring@APS.Washington.DC.US



Steele

(University of California-San Diego) was elected. The induction ceremony was held October 5 at the Academy headquarters in Cambridge, Massachusetts.



Squire

APS Member **Darlene Russ-Eft** has been awarded a 1996 Editor of the Year award by Times Mirror for her research study on leadership competencies. This annual award recognizes editorial excellence for a body of work or single

outstanding effort during a given year. Russ-Eft's study identifies how leadership is actually practiced in today's organizations and is one of the first to define how leadership is performed by employees outside traditional management positions. The study has been recognized by the international community with Russ-Eft



being among the three US researchers invited to present a the International Conference on Competencies in Higher Education, held in York, England. Russ-Eft received her doctorate in psychology from the University of Michigan and is director of research services at Zenger Miller, a consulting, educating, and training firm headquartered in San Jose, California.

APS Fellow **Dean Keith Simonton**, a professor at the University of California-Davis, received two major honors this

year. The International Association of Empirical Aesthetics conferred upon him this summer the Sir Francis Galton Award for Outstanding Contributions to the Study of Creativity. In addition, he was named the recipient of the Rudolf Arnheim Award for Outstanding Contributions to Psychology and the Arts at the



annual convention of the American Psychological Associa-

APS Member Anie Sanentz Kalayjian, a professor at the College of Mt. St. Vincent, recently coordinated more than 20 discussion groups at the United Nations that were part of the

49th annual Non-Governmental Organizations Conference, held in September at the United Nations in New York. The conference was organized by the UN Department of Public Information in cooperation with the Executive Committee of Non-Governmental Organizations. The theme of the conference was "The



United Nations: Facing the Challenges of a Changing World," and it focused on the partnership between the United Nations and civil society.



(London) *Observer*, Aug. 4, 1996: Non-shared environments and differences between children reared in the same family

Michael Pogue-Heile, Univ. of Pittsburgh, Newsweek, Oct. 14, 1996: Genetics underlying novelty seeking

Janet Polivy, Univ. of Toronto, Shape, Oct. 1996: Negative psychophysiological effects of chronic dieting

Daniel Schacter, Harvard Univ., National Public Radio's All Things Considered, Sept. 16, 1996: How memories are stored

Martin E.P. Seligman, Univ. of Pennsylvania, *The Washington Post*, Sept. 16, 1996: Explanatory style and optimism

Linda Skitta, Univ. of Illinois-Chicago, *The Sunday Capital*, Aug. 11, 1996: Displaying complexity of thought

Paul Slovic, Univ. of Oregon, *The Washington Post*, Sept. 30, 1996: Differences between the sexes in assessing risk

Philip Tetlock, Ohio State Univ., The Sunday Capital, Aug. 11, 1996:
Displaying complexity of thought

William Warren, Brown Univ., Science, Sept. 13, 1996: How the brain computes a heading in human subjects

Thomas Zentall, Univ. of Kentucky, The San Francisco Examiner, Aug. 23, 1996: Tameness of alligators

### Members in the News

Send your media sitings to:

APS Observer

Members in the News
1010 Vermont Ave., NW
Ste. 1100

Washington, DC 20005
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Iherring@capcon.net

#### TIPS FROM PAGE 27

progress. These e-mail based services have already been successfully utilized in courses that ask students to offer observations or reactions on even the most sensitive topics. It is often argued that some students who are reticent to speak in a classroom are more likely to express themselves in these electronic forums.

13. Create new resources. In addition to the wealth of materials that reside in publishing houses or on the net, you can always make a significant contribution by adding your own content. At the least, adding content could mean that you could use a graphics program to illustrate some principle or concept, such as classical conditioning. Or, if you are a little more enterprising, you might write a program to emulate your favorite psychological process or phenomenon. Want to illustrate the effect of presbycusis on speech perception? Use a sound processing program to filter a digitized speech sample. It is also relatively easy to learn to use multimedia authoring software (i.e., programs for creating multimedia documents), so that you can quickly produce multimedia presentations on any topic.

These are just a few suggestions for computerizing your curriculum. If you want to followup, we strongly suggest that you contact your local academic computing center. Staff there should have display models of hardware and software or at least some helpful advice. If you lack an Internet connection, contact local, regional, or national Internet service providers and ask for their services and rates.

#### Recommended Resources

Kehoe, B.P. (1993). Zen and the art of the Internet: A beginner's guide. Englewood Cliffs, NJ: Prentice-Hall.

Kelley-Milburn, D., & Milburn, M.A. (1995). CYBERPSYCH: Resources for Psychologists on the Internet. *Psychological Science*, 6, 203-211.

Ralston, J.V., Cronin, J. & Seltzer, L. (1996).
Applying the World Wide Web to
Education. Submitted to *Teaching of Psychology*.

Issue 2 of Volume 25 of Behavior Research

Methods, Instruments & Computers (1993) contains several articles on computer technology for psychological instruction and science.

The journal *Teaching of Psychology* publishes regular articles on computer use in teaching.

COMPSYCH (http://www.plattsburg.edu/ compsych/) is a web site containing extensive listings and reviews of psychology-related software.

Jim Ralston has used computing technology for over 20 years in the service of science and education. He received a BS from Tulane University, a PhD from SUNY-Buffalo, completed a post-doc at the University of Hawaii, and was a visiting faculty and research associate at Indiana University. He is currently an Assistant Professor of Psychology at Ithaca College. His primary interests are in the evolution of vocal communication and educational technology. He can be reached on e-mail at ralston@ithaca.edu.

Barney Beins began programming and using Apple II computers for pedagogy over 15 years ago. He received his BA from Miami University (Oxford, Ohio) and his PhD from the City University of New York. His current work includes editorship of the "Computers in Teaching" section of the journal Teaching in Psychology. He is a fellow of the APA and secretary of its division on the teaching of psychology. He is an Associate Professor of Psychology at Ithaca College. He can be reached on e-mail at beins@ithaca.edu.



### **Obituaries**

### Robert S. Harper (1922-1996) Teacher, Mentor, and Scholar

Robert S(tevens) Harper died on August 14, 1996, in Charleston, South Carolina. He was a Fellow of the American Psychological Society and widely known and respected for his continuous active involvement in the American Psychological Association (APA) since the early 1950s. Bob Harper was Council Representative of the



Division on the Teaching of Psychology for four terms, Chair of the APA Committee on the Structure and Function of Council, and Secretary-Treasurer and President of the APA Division on the Teaching of Psychology. He was the Division's Historian from 1974 to 1985, served on numerous other Divisional and APA Committees, and was Founding President of the Council on Undergraduate Departments. He was named an Outstanding Educator of America in 1973 and served on the Editorial Board of the journal *Teaching of Psychology*.

Bob Harper was born on February 4, 1922, in Ithaca, New York. His childhood years were characterized by many relocations (12 different schools in 12 years) across several states (from New York to Pennsylvania to Oklahoma). After completing high school, Bob entered Oklahoma University, from which he earned both a Bachelor of Arts and Master of Science degree in 1943.

Robert Harper married Marilyn Millard, who survives, on January 15, 1944. Together, as a team, they were to forge lasting friendships with scores of students and, later, their families. Their remarkable openness, courtesy and generosity changed many lives and earned them the love and respect of countless students. Following a two-year stint in the U.S. Army as an Occupational Counselor, Bob entered the graduate program at Harvard University in the fall of 1946. On his way from Oklahoma to Cambridge he attended the APA meeting at the University of Pennsylvania. This was the first of many annual APA meetings and was the forerunner of Bob's later involvement with various professional organizations.

At Harvard, Bob served as the Teaching Fellow for E.G. Boring. It was his association with Boring that ignited Bob's interest in history and led to a study of graduate degrees in psychology in the United States from 1873 to 1948. Bob also was one of the first to do archival research in the history of American Psychology. While at Harvard, he gained permission to study the William James papers in an effort to learn more about James and the development of psychology at Harvard and in the United States. This provided Bob the opportunity to interview William James' son and to examine the notebook that James kept as he plied the Amazon with the noted Harvard

biologist Alexander Agassiz.

Having completed a Master's degree at Harvard, in 1949, Bob was appointed Instructor of Psychology at Knox College in Galesburg, Illinois. After two years, and with a Ford Foundation Faculty Fellowship in hand, he returned to the University of Oklahoma to complete his graduate work, receiving a PhD in 1952.

Bob immediately rejoined the Knox College faculty, continuing a long and productive academic career at Knox that would span another 35 years. He served as Chairman of the Department of Psychology for 15 years, and was elected College Marshal. He also served as College Examiner and Registrar. He held visiting professorships at The University of Texas-Austin and at the College of Charleston, and was a Professor in the Department of Psychology and Social Sciences at Rush Medical University from 1979 to 1985.

Early in his career, Bob's published work was experimental in nature, concentrating on sensation and perception. In addition, E.G. Boring's love of the history of psychology had infected Bob while he was at Harvard, and he continued his interest in that topic throughout his lifetime. However, his interest in teaching and in the undergraduate curriculum became paramount early in his tenure at Knox, and it is for his work in those areas for which he is best known.

In addition to authoring *Introductory Psychology* (Allyn and Bacon, 1958), he published and spoke often on teaching and curricular topics. He organized an early and successful conference on general education and psychology, and for several years he directed a summer institute for high school teachers of psychology, supported by the National Science Foundation. He also directed a project aimed at developing an undergraduate curriculum for child care specialists.

It was, however, his remarkable success in working with students and in identifying those with promise for success in graduate work in psychology for which Bob Harper will be most fondly remembered. Prior to his arrival at Knox, only a handful of students had gone on to graduate work in psychology or closely related fields. During his tenure, however, 87 students went on to graduate study, 60 of whom have their doctorates in psychology. Upon his retirement, Knox College was in the upper two percent of colleges in terms of the percentage of their graduates earning advanced degrees in psychology. To be sure, Bob was not the only psychologist at Knox to influence these students during that period; he was, however, the catalyst for this remarkable record.

His work as a psychologist and as an educator did not end at the boundaries of the campus. Bob was a member of the Board of Directors of the Illinois Association of Mental Health, serving as its Vice President for three years. He also served as President of the Board of Directors of the Spoon River Community Mental Health Center, which honored his work by naming their library after him. He was a Life Trustee of the Galesburg Cottage Hospital, serving as the Chairman of their School of Nursing Committee for many years, and he was a member and Chairman of the Citizen's Advisory Committee to the Board of Education for the local school district. So often, the separation between

SEE HARPER ON PAGE 34



### Austin H. Riesen (1913-1996) Sensory Deprivation Pioneer

The uncommonly kind and gentle manner of Austin Herbert Riesen seemed almost a contradiction to the force and influence that he and his pioneering work in sensory deprivation and brain function exerted on the entire field of developmental psychology. His perceptive and innovative experimentation, particularly with visual



impairment, opened entirely new pathways and vistas in the quest to understand the relationship between behavior and physiology. Yet with all his formidable presence in the field, he remained always, as colleague after colleague attests, the quintessence of what it means to be a scholar and a gentleman.

Riesen, professor emeritus of psychology at the University of California-Riverside, died of pneumonia September 15, 1996, at his home in Riverside, California. He was 83, born July 1, 1913, in Newton, Kansas.

Riesen was honored as a University of California Outstanding Emeritus Faculty Member in 1992 and was elected to the National Academy of Sciences in 1995 (see March 1996 *Observer*) in recognition of the monumental impact of his research into how early visual experience, or the lack of it, affects vision, visually guided actions and learning, and brain anatomy and function. He is recognized as having virtually created the paradigm of sensory deprivation which led to profound discoveries about the relationship between early experience and later development. His studies generated research worldwide on topics such as deprivation versus enrichment of the early environment, critical periods of sensory and behavioral development, and effects of early experience on the central nervous system, for example.

His approach was both comparative and developmental—studying and comparing the sensory capacities and sensory development within a wide range of animal species, including chimpanzees, monkeys, cats, rabbits, rats, chickens, and others.

It was the strange and awkward experience of humans following removal of congenital cataracts that motivated Riesen's creation of controlled sensory deprivation experiments in animals. He became fascinated in the late 1940s by reports that humans whose vision was incapacitated from birth by cataracts had great difficulty recognizing and interacting with forms such as circles, squares, and triangles when removal of the cataracts enabled them to see.

Riesen investigated the phenomena by devising experiments with animals to determine the effects of sight deprivation. Using newborn chimpanzees at first—since the species is in many respects similar to humans—Riesen raised them in full darkness, using bandages or otherwise keeping them in the dark. After about two years, the animals were tested in light conditions and were found to be visually blind though not organically blind. In essence, they could see but could not comprehend. As with

humans whose cataracts were removed, Riesen found the animals to be visually naive, unable to interact normally in recognizing or interacting with forms or patterns, as when objects are approaching or receding. When a hand approached the eye, for instance, they did not blink. The brain had not wired-in the need for such reaction.

His research and that of his colleagues and students proved that many motor and mental functions are not innate but are developed through environmental, especially visual, experience. The brain requires visual experience to organize patterns and forms. Conversely, sight deprivation in older animals, after they had experienced normal vision early in life, did not have deleterious effects. Once the brain had enough early experience, it was not impaired by later deprivation in contrast to deprivation at birth or early thereafter.

After confirming that vision requires experience for the brain to recognize patterns and forms, Riesen then examined the period in an animal's development in which visual experience was most critical. He found that the experience needed for the brain to organize discrimination had to occur very early in life. And, to sort out exactly what aspect of the deprivation was producing what kind of adverse developmental outcome, Riesen refined the paradigm in various ways, such as raising animals with a diffuse, unstructured light, so the retina would be illuminated but with varying degrees of pattern stimulation. With each variation the pattern of deficits was found to be different.

Riesen further discovered that even if animals had patterned light experience, but were kept immobile and tightly confined as opposed to freely running around in a large area, they would have motor and coordination deficits when released from confinement. In experiments with animals moving in the light, he established that the brain must learn to interact with small and large images, yielding perception of distance and perspective. Such skill has to be organized in the brain through experience with patterns, such as approaching, receding, oblique movement, and changing attitude. It is not simply patterned light per se that is critical, but the interchange with the pattern as the organism moves about.

In later years, Riesen began to investigate organic aspects of the brain, using the Golgi stain method, which silhouettes whole neurons in the visual cortex. He found that in visually deprived animals the branches in the silhouette were less expansive, like a bush deprived of nutrients, suggesting a relationship between experience and development of the brain. He then extended studies to the somatic sensory system, analyzing animals deprived of extensive motor activity but not of vision. He discovered that neuron processes—proliferation and complexity of dendritic fingers that receive information from other neurons—were significantly less expansive in monkeys raised in confined spaces compared to animals that had moved about freely during development.

Riesen's studies revealed that the brain is not completely structured genetically but only partly so, and that its structure changes depending upon experience. This suggests that neuronal development in the brain of a child raised in a sensorially impoverished environment (deprived, for instance, of toys and

SEE RIESEN ON PAGE 31

#### **OBITUARIES** continued

# **Andrew Salter (1914-1996) Founding Behavior Therapist**

Andrew Salter, who for almost six decades conducted a successful private practice in Manhattan, New York, died from cancer on October 7, 1996, at the age of 82. Born in Waterbury, Connecticut, on May 9, 1914, Salter graduated from New York University in 1937 with a BS in psychology. With only a bachelors degree and his independent psychology practice, he went



on to achieve a significant founding role in behavior therapy.

Immersing himself after graduation in the intellectual riches of the New York Public Library and impressed by Clark Hull's little known work in hypnosis and conditioning, Salter published a seminal paper on autohypnosis in 1941 and a book on the topic in 1944, reporting successful applications to some of the problems (e.g., insomnia, smoking, overeating) he was treating in his newly established practice.

Using his clinical experiences in a heuristic fashion, Salter went on to publish two other books that form the basis of behavior therapy today, Conditioned Reflex Therapy (1949) and The Case Against Psychoanalysis (1952). These works occupy an honored place for those with an appreciation of history in clinical psychology, psychiatry, and especially behavior therapy. At the time these works were published, it was not fashionable indeed, it was downright risky—to critique psychoanalysis or to propose that clinical interventions could be based on experimental data. Dollard and Miller's classic Personality and Psychotherapy (1950) was published a year later than Andy's first book and was much different in purpose and ultimate effect; whereas Dollard and Miller attempted to explain existing psychoanalytic procedures in terms of well-established principles of learning, Salter used learning principles as a guide to devising new therapeutic methods.

Salter thus courageously and successfully challenged the establishment and articulated a vision and a set of techniques that have become so widely accepted and applied that he is often not formally cited. This is especially true when contemporary writers in psychotherapy refer to "assertion training," "expressiveness training," "getting in touch with one's feelings," and related phrases that have to do with the expression of both positive and negative emotion under circumstances that meet one's needs without infringing on the rights and sensibilities of others.

The central thesis in Salter's conditioned reflex therapy book, couched in Pavlovian terms, is that the direct expression of both positive and negative emotion leads to improvement in a wide variety of psychological disorders via a disinhibition of excessive cortical inhibition. While the theorizing was open to question, the techniques he derived from the theory were effective for a wide variety of disorders. (This kind of "disconnect"—between theory and technique—is not uncommon in scientific applications.) Throughout his application of the techniques, Salter's emphasis was on changing overt behavior rather than on changing associated thoughts and feelings. Changes in the latter would follow behavioral change, he argued. And this approach was in sharp contrast to the prevailing doctrines of the "insight" based therapies.

Less generally known than Salter's "assertion training" is this avowed behaviorist's innovations in the use of imagery, specifically paired with positive affect, to reduce unwarranted anxiety. But it was this idea that helped to lay the foundation for Joseph Wolpe's pioneering work in systematic desensitization. (The degree to which an appeal to imagery is within the realm of behavioristic techniques has been argued for years, but Salter was always in good conceptual company with the likes of Clark Hull, Kenneth Spence, O.H. Mowrer, and Neal Miller.)

Though humanistic in his values and in his clinical approach to patients, Salter remained a philosophical materialist in his theoretical conceptions of behavior and its therapeutic modification. In *Conditioned Reflex Therapy*, he wrote:

... we attain [behavior change] by what may be termed *verbal chemistry*. Words, spoken by the therapist, travel along appropriate nerve tracts in the person under treatment, and produce chemical modifications in his nervous system. These changes are associated with behavior changes, which in turn precipitate more biochemical modifications and more behavior changes. (Salter, 1949, p. 316)

To place this in historical context, most readers will recall that D.O. Hebb published his own speculative but prescient *Organization of Behavior* in the same year.

Like other trail-blazing and creative thinkers, Salter's ongoing influence extends beyond behavior therapy and psychology generally. In the field of psychotherapy, he emphasized the importance of "I-talk" years before Fritz Perls pointed to its significance in Gestalt therapy. Assertion training has permeated our culture, especially in the feminist movement, a fact which made Salter very proud. Ironically, being an innovator does not guarantee that one's contribution will receive due visibility. So, just as references to "psychoanalysis" seldom cite Sigmund Freud, a similar scarcity of citations to Salter occurs in the literatures on "assertion training" and the origins of behavior therapy.

In 1964, he published with Joseph Wolpe and Leo Reyna the proceedings of the first conference on behavior therapy, *The Conditioning Therapies*. Along with Eysenck's edited volume, *Behaviour Therapy and the Neuroses*, this collection of provocative papers was instrumental in bringing to a larger audience the clinical achievements and, most importantly, both the perspective and the potential of a scientific approach to clinical intervention based on experimental studies of learning. This was followed two years later by his key role in the founding of the Association for Advancement of Behavior Therapy (AABT). He did not publish after the mid-1960s, busying himself instead

CONTINUED ON NEXT PAGE



#### RIESEN FROM PAGE 29

enriching experiences) will not be as mature or complex as in a child with rich experiences. The work reveals how critical experience in early childhood is to the development of every individual.

Riesen's pioneering research on early visual deprivation began with studies of chimpanzees while he was an assistant professor of psychobiology at the Yerkes Laboratory of Primate Biology in Florida. His tenure at Yerkes from 1939 to 1949 was interrupted by World War II and service as a captain and aviation physiologist in the US Army Air Corps between 1943 and 1946.

He joined the faculty at the University of Chicago in 1949, continuing his research there until 1962. He published his first book, *Postural Development of Infant Chimpanzees*, in 1952 (Yale University Press, New Haven) and became professor of psychology in 1956. Riesen left the University of Chicago in 1962 to organize the graduate program in psychology at the University of California-Riverside (UCR). Serving as chair of the Department of Psychology from 1962 to 1968, he served at UCR until his retirement in 1980.

It was in 1975 that he authored and edited the landmark book, *The Developmental Neuropsychology of Sensory Deprivation* (Academic Press). In the 1970s he made two films, *A Survey of the Primates*, and *Primate Growth and Development*, detailing studies of a gorilla's first year. He was editor of the journal *Advances in Psychobiology* from 1972 to 1976.

Riesen graduated from Tucson High School in Arizona in 1931, then received his bachelor's degree from the University of Arizona in 1935, was inducted into Phi Beta Kappa, and received his doctorate from Yale University in 1939, the same year he married his wife, Helen. They were married 57 years. He was a member of Sigma Xi and Phi Kappa Phi.

He wrote numerous articles on visual and brain development,

lectured nationally and in Japan, Australia, and Switzerland, and received numerous awards including an honorary doctor of science degree from the University of Arizona. He was the University of California-Riverside Faculty Research Lecturer in 1974, lecturing on Brain Development After Use and Disuse. Riesen also was a visiting research professor at the University of Rochester from 1951 to 1953 and a Sigma Xi research lecturer at the University of Arizona in 1961 and UCR in 1975. He was a Fellow of the American Psychological Society, and a member of the Society for Neuroscience, the e International Society of Developmental Psychobiology, and the International Brain Research Organization. He also gave service on the Memory Vision Research Committee of the National Institutes of Health.

A renaissance man, he enjoyed music, played the clarinet, and sang for those in convalescent and rest homes. As a Congregationalist, he sang in his church choir for more than 20 years. In addition to his reputation as an intellectual giant, Riesen is remembered for his kind, deferential treatment of and concern for others. Said one longtime colleague, "I never once saw him lose his temper or exchange angry words with another person."

He is survived by his wife Helen, of Riverside, California; a daughter, Carol Riesen Nelson of Houston, Texas; and a son, Kent Murdoch Riesen of Eureka, California.

DAVID H. WARREN
UNIVERSITY OF CALIFORNIA-RIVERSIDE
Contributions to this piece were also made by:
PAUL D. WILSON
UNIVERSITY OF CALIFORNIA-RIVERSIDE
ARLO K. MYERS
UNIVERSITY OF CALIFORNIA-RIVERSIDE

#### From Previous Page

with a practice that included many well-known people in the arts and the professions and with presentations that always enlivened the proceedings of scholarly meetings.

But there was more to this man than his creative writings. Though fiercely and consistently committed to a scientific analysis of complex human behavior, Salter felt that students entering the helping professions should be, as he put it in a recent interview for the AABT Archives Project, "complete human beings." He believed they should read widely outside of psychology and should have varied life experience, something long emphasized in nonbehavioral approaches to therapy but only recently in behavior therapy. To a question about recent efforts to integrate competing approaches to clinical intervention (e.g., psychoanalysis and behavior therapy), Salter replied that "Everybody knows something." He seemed thus to have succeeded in blending a coherent theoretical commitment with a tolerance of and openness to ideas that lay outside the boundaries of his own paradigm—not an easy task for scientifically minded professionals.

Also unusual about Salter was the wide variety of people who read and praised his writing. Who among us can say that our writing style is "captivating," as Thomas Mann said about Salter's prose? Who among us has written things that com-

manded the attention and approbation of people such as Vladimir Nabokov, H.G. Wells, and Aldous Huxley? And who, as a college student and writer of poetry, won an interview with the likes of Robert Frost? Finally, who among us has had a character in a book—and then a widely celebrated movie—modeled after us, as was the case with Salter in Richard Condon's *The Manchurian Candidate*?

Those of us who knew Salter personally appreciated his sheer brilliance, his wit, his warmth, decency and consideration for others, his supportiveness, his keen intuitive grasp of human nature, his infectious zest for life, his love of art and literature, and his devotion to family and friends. His effect on people, especially his patients, can be summed up by an anecdote about a new patient he began seeing a few months ago. As recounted by one of his sons, she came to a session one day extremely unhappy. As his wife described her as she left his office, "You should have seen her the last session. She came out of the office looking like she had just had her hair done."

Active till a few months before his death, Andrew Salter leaves behind his wife Rhoda, sons William and Robert, a sister, and three grandchildren. He will be sorely missed.

GERALD DAVISON UNIVERSITY OF SOUTHERN CALIFORNIA

## The Student Notebook \_\_ Rodolfo Mendoza-Denton - Editor\_

### The EMCC Goes World Wide... On the Web

Acting as a voice for the concerns of ethnic minorities in psychology, the Ethnic Minority Concerns Committee (EMCC) of the APSSC was established in 1994 to coordinate, advocate, and recommend programs and policies on ethnic minority student issues. Despite its short history, the EMCC is quickly becoming an integral part of the APS Student Caucus.

One of EMCC's central goals is to bring cultural issues to the mainstream and to highlight minority contributions to the field. In order to achieve this goal, the EMCC has worked diligently to compile a database containing a list of ethnic minority psychological affiliates and organizations, a guide to financial aid opportunities, and a short bibliography on ethnic minority cultural concerns in psychology.

This year's EMCC chairperson is Mary Jo Nelum-Hart, a cognitive psychology student at the Learning Research and Development Center at the University of Pittsburgh. She has collaborated closely with APSSC Communications Director John Jewell, as well as past and current APSSC presidents Steve Fiore and Nikki Scarberry, to fulfill one of the first objectives of the EMCC: to make the information database available to students on the World-Wide Web. This information can be found at:

### Check out the APS Student Caucus Web Site!

The APSSC web page has moved to the same location as the APS web homepage. APSSC web page coordinator John Jewell welcomes you to come check out our new digs at:

http://psych.hanover.edu/APS/ APSSC/apssc.html

http://psych.hanover.edu/APS/ APSSC/EMCC.html

The database is quite extensive, but not all of the information could be made available at once. Information pertinent to upcoming deadlines, however, is featured and continuously updated. Should you be interested in receiving a copy of the full report (e.g., the complete database file of

financial aid opportunities), please write, fax, or email your requests to Ms. Nelum-Hart (see the APSSC Officers box on the facing page for contact information).

All APSSC members are encouraged to visit the website, and stay informed about up and coming research which addresses minority concerns and impacts mainstream society.

### Travel Assistance To the Ninth Annual **APS** Convention

The APS Annual Convention offers a forum for Student Affiliates to present their research, interact with fellow psychologists. and have the opportunity to learn more about current research. The considerable costs associated with travel and accommodation, however, often prevent students from attending the convention. The APS Student Travel Award, established by the APS Board of Directors and the administration of APSSC, provides some limited financial assistance to many students who wish to attend this important professional and informative event.

Travel funds are available to both graduate and undergraduate APS Student Affiliates who will be presenting research at the conference and who demonstrate financial need. Students receiving travel assistance are asked to volunteer some of their time to help with registration, the job bank, or the combined book exhibit at the convention. Awards consist of \$125 cash to help defray the cost of travel to the convention. Requests for applications for travel awards should be sent to:

Deana Julka **APSSC Volunteer Coordinator** c/o Dept. of Psychology University of Notre Dame Notre Dame, IN 46556 Email: DEANA.JULKA.2@ND.EDU

Correspondence by email is preferred. Completed applications must be received on or before March 19, 1997. You must be a Student Affiliate to apply.

## APSSC Student Research Competition

The American Psychological Society Student Caucus (APSSC) Executive Council wishes to promote and acknowledge outstanding research conducted by its members. The APSSC Student Research Competition (SRC) was created with this purpose in mind.

The SRC allows students to submit their scholarly work for review by a panel of their peers. The panel chooses the best entries to receive the Student Research Competition Award. All Student Affiliates are encouraged to submit high-quality original research to the Seventh Annual APSSC Student Research Competition. Up to four students (three graduate and one undergraduate) will be selected to receive a cash award of \$250 for their outstanding research. In addition, the students who are selected will be invited to present their research in a special symposium at the 1997 APS Convention in Washington, DC, May 23-26.

To enter the SRC you must be able to answer "yes" to each of the following questions:

- 1. I am a graduate or undergraduate student affiliate of APS.
- 2. I am the first author on my research project.
- I am submitting an identical version of this entry to the 1997 APS Convention in Washington, DC, in accordance with the "Call for Submissions" procedures found in the APS Observer (September 1996).

If your answers to the above three questions were "Yes," and you wish to enter the SRC, follow the application instructions below:

- Submit a type-written double-spaced summary of your research project in the following format:
  - A. Title Page: The title page should include the applicant's name, affiliation, address, telephone number, and email address.
  - B. Project Summary: The project summary should begin on a separate page and should include the following information in the order listed:
    - 1. Project Title (without author's name),
    - 2. Purpose and Rationale of the study,
    - 3. Methodology,
    - 4. Results (including any important statistics), and
    - 5. Conclusion and implications of the study.
- II. Submit a one-page letter of recommendation from a member of your faculty that has been involved in your research project. The recommendation should include:
  - A. The purpose and goal of the project,
  - B. The student's role and level of involvement in the project,
  - C. The significant contributions the student made during the research, and
  - D. The student's general understanding of the research topic.
- III. Send four (4) copies of your project summary, four (4) copies of the letter of recommendation, and proof of your APS student affiliation (either a copy of your canceled check or credit card receipt) to:

Susan Perry ♦ Attn: Student Research Competition

Department of Psychology ♦ Kent State University ♦ Kent, OH 44242

Submissions for the research competition must be postmarked no later than February 21, 1997. Additional inquiries about the Student Research Competition should be directed to Susan Perry at the above address or via e-mail at: SPERRY1@KENT.EDU.

STUDENT NOTEBOOK continued

### APSSC Officers • 1996-1997

Each Executive Council member (see below) welcomes students and others to contact them about any concerns relevant to the member's respective office.

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#### STUDENT NOTEBOOK continued

### **APSSC Student Grant**

In 1994, the APSSC Executive Council created a funding source for APS affiliate members as an effort to assist and support student research. The main function of the APSSC Student Grant program is to allocate funding to be applied toward the purchase of research materials prior to data collection. It is intended to provide partial financial support to both graduate and undergraduate Student Affiliates of the American Psychological Society (APS) for the completion of their projects. Based on the submissions, up to four graduate students are eligible to receive cash awards of \$250 each, and up to five undergraduates are eligible to receive cash awards of \$100 each.

To apply for the Student Grant, you must:

- I. Complete and send a cover letter with each of the following:
  - A. Your name, current address, telephone number, and email address,
  - B. Your current academic status (graduate or undergraduate),
  - C. Your area of research,
  - D. Proof of APS student affiliation (a copy of canceled check or credit card voucher),
  - E. The number of students involved in conducting your research project,
  - F. Full name of the director of the research, and
  - G. The name and address of your college psychology department.
- II. Complete and send a 5- to 10-page (double-spaced) type-written project summary containing a detailed description of your project, including, but not limited to:
  - A. Research project's title (without author's name) at the top of each page,
  - B. Summary of previous related research,
  - C. Specific aims of the research (i.e., justify importance of research),
  - D. Clearly stated hypothesis of the research,
  - E. Proposed methodology, and
  - F. Possible theoretical implications of the research project.

Students should address the project's ability to advance the field of psychology, and to explain or assist in explaining some psychological phenomenon. It should be clear how the design allows the achievement of these two goals in a clear conceptual manner.

- III. Provide verification that the research project has been approved by the Human Subjects Review Board or by the Animal Subjects Review Board for ethical treatment of subjects.
- IV. Enclose a self-addressed stamped envelope for return correspondence.

Send all of the above information including four (4) copies of both the cover letter and the project summary to:

Susan Perry
Attn: APSSC Student Grant
Department of Psychology
Kent State University
Kent, OH 44242

All application materials should be received no later than March 14. Student Grant recipients will be notified of the awards at the seventh annual competition session at the Ninth Annual APS Convention. Additional inquiries about the Student Grant should be directed to Susan Perry at the above address or via email at: SPERRY1@KENT.EDU.

#### HARPER FROM PAGE 28

"town" and "gown" is lamented. Bob Harper once wrote: "I never did approve of the town-gown split. We were a part of Galesburg; Knox was a part of Galesburg; and I was employed there."

Just as the campus boundary was no barrier to his academic interests, neither was retirement a barrier to his continuing historical interests. When they retired to Charleston, Bob and Lyn immediately became involved in the Historic Charleston effort. Bob served as a tour guide and as chairman of the street marshals for the Festival of Houses. And, as usual, his intellect and passion for teaching made his tours replete with interesting and important factual information.

Bob Harper changed the lives of scores of students; he stayed in touch with them. He knew where "his" students were, what they were doing, and many aspects of their personal and professional lives. His love and respect for them was returned in kind. We mourn Bob's passing, but we take comfort from the fact that he will live on through his students and through many generations of students to come who unknowingly feel his influence.

GARY R. FRANCOIS KNOX COLLEGE MORTON WEIR

Morton Weir University of Illinois

#### The Editor welcomes your letters

Submit typewritten letters (350 words max.) via postal mail and, if possible, include a computer file on disk (PC/DOS or Apple/Macintosh). Indicate which word processor you used, or, save your file as an ASCII or text file. Send to:

Letters to the Editor
APS Observer
1010 Vermont Ave, NW
Ste. 1100
Washington, DC 20005
Fax: 202-783-2083
or email to Lee Herring, Editor:
lherring@capcon.net



## Organizational Profile\_

# Society for Studies on Stress & Genocide

#### **Origins and Purpose**

Established in 1988, the Armenian American Society for Studies on Stress & Genocide (AASSSG) is an interdisciplinary society dedicated to the scientific study of the stresses of genocide and other traumas. More specifically, its goal is to advance national and international understanding of the generational and inter-generational effects of traumatic experiences.

#### Membership

Membership in the AASSSG is open to mental health professionals of all disciplines and other professionals with interest in trauma and genocide. Membership is invited in the following categories: Professional (\$35); General (\$25), Student (\$10). The benefits of being a member include: professional/personal contacts: discount for regional meetings; dissertation advisement; support groups; consultations; participation in international meetings and endeavors; research advisement; clinical referrals; research; and networking opportunities.

The "Organizational Profile," a regular feature of the APS Observer, informs the research community about organizations devoted to serving psychological scientists and academics. It is difficult for anyone to keep abreast of the various organizations of potential personal interest. This section should help in that task. The Editor welcomes your suggestions as to organizations warranting coverage.

#### **OFFICERS**

**Executive Committee Members 1995-1998** 

Executive Officers

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#### BACKGROUND

Objectives of the Armenian American Society for Studies on Stress & Genocide (AASSSG) are: to initiate and implement research projects that pertain to its mission; to inform governmental, educational and social institutions through participation in scientific programs and publications; to promote scholarly activities both in the United States and abroad; to provide consultation to individuals and community groups; to disseminate information related to its goals; to foster cooperation among allied groups; and to provide referrals to professionals and survivors.

The AASSSG participates in a number of programs including national and international lectures, presentations and workshops, as well as research projects such as "Coping with Ottoman Turkish Genocide: An Exploration of the Experience of Armenian Survivors," which will be published in the January 1997 *Journal of Traumatic Stress*. Another project is a study in which survivors of the 1915-1923 Ottoman Turkish Genocide will be compared to a control group of similarly aged immigrant Armenians who did not personally experience the Genocide. Both groups will be assessed for current adaptation, level of PTSD, and meaning in life.

AASSSG also provides doctoral dissertation support, gives awards for distinguished achievement in the field of Genocide studies, and sponsors an essay contests for high school and college students. In addition, with other organizations such as United Nations,

Columbia University, Fordham University, International Society for Traumatic Stress Studies, and American Sociological Association, the AASSSG participates in collaborative panel discussions and research.

#### Contact:

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APS OBSERVER American Psychological Society