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TESTIMONY on the FY 2011 BUDGET of the
NATIONAL INSTITUTES OF HEALTH
before the
SUBCOMMITTEE ON LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION
COMMITTEE ON APPROPRIATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

THE HONORABLE DAVID OBEY, CHAIR
April 16, 2010

SUMMARY OF RECOMMENDATIONS

- As a member of the Ad Hoc Group for Medical Research Funding, APS recommends \$35 billion for NIH in FY 2011.
- APS requests Committee support for behavioral and social science research and training as a core priority at NIH in order to: better meet the Nation's health needs, many of which are behavioral in nature; realize the exciting scientific opportunities in behavioral and social science research, and; accommodate the changing nature of science, in which new fields and new frontiers of inquiry are rapidly emerging.
- Given the critical role of basic behavioral science research and training in addressing many of the Nation's most pressing public health needs, we ask the Committee to ensure that NIH leadership sustains its cross-NIH basic behavioral research funding initiative, the Basic Behavioral and Social Science Opportunity Network (OppNet), and coordinates with all Institutes and Centers to provide support for basic behavioral science research.
- APS encourages the Committee to support behavioral science priorities at individual institutes. Examples are provided in this testimony to illustrate the exciting and important behavioral and social science work being supported at NIH.

Mr. Chairman, Members of the Committee: My name is Dr. Amy Pollick, and I am speaking on behalf of the Association for Psychological Science. Thank you for the opportunity to provide this statement on the FY 2011 appropriations for the National Institutes of Health. As our organization's name indicates, APS is dedicated to all areas of scientific psychology, in research, application, teaching, and the improvement of human welfare. Our 22,000 members are scientists and educators at the Nation's universities and colleges, conducting NIH-supported basic and applied, theoretical and clinical research. They look at such things as: the connections between emotion, stress, and biology and the impact of stress on health; they look at how children grow, learn, and develop; they use brain imaging to explore thinking and memory and other aspects of cognition; they develop ways to manage debilitating chronic conditions such as diabetes and arthritis as well as depression and other mental disorders; they look at how genes and the environment

influence behavioral traits such as aggression and anxiety; and they address the behavioral aspects of smoking and drug and alcohol abuse.

As a member of the Ad Hoc Group for Medical Research Funding, APS recommends \$35 billion for NIH in FY 2011, an increase of 12.6% over the FY 2010 appropriations level. This increase would halt the erosion of the Nation's public health research enterprise, and help restore momentum to our efforts to improve the health and quality of life of all Americans.

Within the NIH budget, APS is particularly focused on behavioral and social science research and the central role of behavior in health. The remainder of my testimony concerns the status of those areas of research at NIH.

HEALTH AND BEHAVIOR: THE CRITICAL ROLE OF BASIC AND APPLIED PSYCHOLOGICAL RESEARCH

Behavior is a central part of health. Many leading health conditions – such as heart disease; stroke; lung disease and certain cancers; obesity; AIDS; suicide; teen pregnancy; drug abuse and addiction; depression and other mental illnesses; neurological disorders; alcoholism; violence; injuries and accidents – originate in behavior and can be prevented or controlled through behavior.

As just one example: stress is something we all feel in our daily lives, and we now have a growing body of research that illustrates the direct link between stress and health problems:

- chronic stress accelerates not only the size but also the strength of cancer tumors;
- chronic stressors weaken the immune system to the point where the heart is damaged, paving the way for cardiac disease;
- children who are genetically vulnerable to anxiety and who are raised by stressed parents are more likely to experience greater levels of anxiety and stress later in life;
- animal research has shown that stress interferes with working memory; and
- stressful interactions may contribute to systemic inflammation in older adults, which in turn extends negative emotion and pain over time.

None of the conditions or diseases described above can be fully understood without an awareness of the behavioral and psychological factors involved in causing, treating, and preventing them. Just as there exists a layered understanding, from basic to applied, of how molecules affect brain cancer, there is a similar spectrum for behavioral research. For example, before you address how to change attitudes and behaviors around AIDS, you need to know how attitudes develop and change in the first place. Or, to design targeted therapies for bipolar disorder, you need to know how to understand how circadian rhythms work as disruptions in sleeping patterns have been shown to worsen symptoms in bipolar patients.

NIH's New Commitment to Basic Behavioral Science Research Should Be Made Permanent

Broadly defined, behavioral research explores and explains the psychological, physiological, and environmental mechanisms involved in functions such as memory, learning, emotion, language, perception, personality, motivation, social attachments, and attitudes. Within this, basic behavioral research aims to understand the fundamental nature of these processes in their own right, which provides the foundation for applied behavioral research that connects this knowledge to real-world concerns such as disease, health, and life stages. Thanks in large part to the leadership of this Committee and your counterparts in the Senate, NIH has launched a new initiative that supports and expands new basic behavioral research throughout NIH. In November 2009, NIH leadership launched the Basic Behavioral and Social Science Opportunity Network (OppNet), and has already released several funding opportunities. OppNet is currently organizing its strategic plan to prioritize research areas it will fund over the next four years. This plan

should include, at the very least, the following areas of research that will be critical to its success and more importantly, critical for the NIH to best take advantage of what this field has to offer:

- identifying the dimensions of the environment that create, moderate, and reverse risks for mental and physical health disorders;
- a rigorous understanding of emotions, their regulation, and functions;
- development of multiple methods of behavioral measurement;
- the role of emotions and environmental factors in behavior change;
- animal models of behavior that enrich our understanding of human mechanisms;
- interpersonal interactions across the lifespan and across social, economic, and cultural contexts; and
- individual processes underlying personality, self, and identity.

While we are greatly encouraged by the launch of OppNet, it is slated to end in 2014. That, combined with the lack of a permanent organizational structure for basic behavioral research at NIH, creates enormous uncertainty for an enterprise that by nature inherently requires a longer-term, stable commitment.

APS respectfully asks the Committee to:

- (1) ensure that NIH adequately supports and sustains a strong, permanent program of basic behavioral science research and training as a critical element in improving the health and welfare of all Americans, and
- (2) ensure that behavioral research is a priority at NIH both by providing maximum funding for those institutes where behavioral science is a core activity and by encouraging NIH to advance a model of health that includes behavior in its scientific priorities.

Psychological Clinical Science Training and Public Health

One in 4 adults and one in 5 children in the U.S. have a diagnosable mental disorder that impairs normal functioning, and mental illness accounts for over 15% of the burden of disease in major nations; the economic burden associated with mental illness exceeds that of all forms of cancer combined. The costs associated with mental illness are staggering; \$69 billion was spent on mental health services in the U.S. alone in 1996. This is over 7% of our total health spending. For these reasons, it is critical that our understanding of, diagnosis, treatment, and prevention of mental illness reflects the very best and most modern science possible.

Unfortunately, the vast majority of clinical psychologists are currently being trained outside of the major research universities and hospitals. Even in the best of these training programs, students receive little or no direct contact with cutting-edge research. In many of these programs there is even an anti-science bias; students in these programs are being trained to diagnose and treat mental illness using methods that have no scientific support or, even worse, that have been shown to be of little or no value. To combat this problem, a group of the top 50 clinical psychology programs in the U.S. formed the Academy for Psychological Clinical Science, an organization committed to reaffirming the critical importance of science in clinical psychology training. The Academy recently established an independent accreditation system to insure that clinical psychology training programs meet the highest scientific standards, which will be critical for re-establishing the scientific foundation of clinical psychology.

Individuals with mental illness and their families will know that practitioners who graduate from these programs will be delivering treatments that incorporate state-of-the-art scientific advances and that have passed the most critical scientific tests of their efficacy. Those communities and organizations wishing to provide state-of-the-art, scientifically-based mental health services will know where to seek consultation

and find the very best personnel. And finally, this new accreditation system will increase the supply of highly-skilled scientists who will continue to fight the good fight again the ravages of mental illness.

The National Institute of Mental Health's (NIMH) mission includes the assurance that that the science-based interventions its researchers generate can be used by patients, families, health care providers, and the wider community involved in mental health care. Most of the institutions that will be accredited under the new system (called the Psychological Clinical Science Accreditation System) include NIMH-funded researchers, and NIMH has already begun to support the new system in the spirit of advancing scientifically-sound treatments that its research helped develop. APS asks the Committee to support the new accreditation system for psychological clinical science training programs in order to reduce the burden of mental illness on individuals, families, communities, and society, through the use of empirically-validated treatments by qualified practitioners.

BEHAVIORAL SCIENCE AT KEY INSTITUTES

In the remainder of my testimony, I would like to highlight examples of cutting-edge behavioral science research being supported by individual institutes.

National Cancer Institute (NCI): NCI is at the forefront of supporting behavioral science in the spirit of advancing the Nation's effort to prevent cancer. The Behavioral Research Program continues to invest in research on the development and dissemination of interventions in areas such as tobacco use, dietary behavior, sun protection, and decision-making. For example, knowledge about basic psychological mechanisms can be brought to bear on warnings about risky behavior, with a particular focus on tobacco use. The recently enacted FDA regulation of tobacco products is a landmark opportunity for tobacco control, and it presents a complimentary invitation for psychological science to revolutionize the study of warning labels and risky behavior. Specifically, recent research on graphic warning labels for cigarettes indicates that specific types of images can improve understanding of the consequences of smoking, and encourage motivations to quit smoking. APS asks the Committee to support NCI's behavioral science research and training initiatives and to encourage other Institutes to use these programs as models.

National Institute on Aging (NIA): NIA's Division of Behavioral and Social Research has one of the strongest psychological science portfolios in all of NIH, and is supporting wide-ranging and innovative work. For example, older individuals face important and often complex decisions about retirement, income distribution, insurance, and other financial and health-related matters, and the normal aging process alters many of the psychological capacities and neural systems that come into play when making these decisions. Researchers are now looking at how healthy aging influences the psychological and neural bases of economic choice, and hope to speed along the development of interventions that remediate problems with decision-making in the elderly, resulting in benefits to public health. NIA's commitment to cutting-edge behavioral science is further illustrated by the Institute's leadership role in NIH's new Common Fund initiative on the Science of Behavior Change. APS asks the Committee to support NIA's behavioral science research efforts and to increase NIA's budget in proportion to the overall increase at NIH in order to continue its high quality research to improve the health and wellbeing of Americans across the lifespan.

Eunice Kennedy Shriver National Institute for Child Health and Human Development (NICHD): NICHD is to be commended for supporting a broad spectrum of behavioral research, particularly as it relates to real-world problems. Let me give you one example, centering on the effects of socioeconomic adversity on children's brain development. Researchers are beginning to clarify the relationship among socioeconomic status (SES), early life experience, and learning in adolescents. We know that learning ability is positively correlated with SES, and recent research suggests that the effects of childhood

experience on the development of certain parts of the brain may partially explain this. Researchers at the University of Pennsylvania are now learning about the nature and causes of the SES disparity in learning ability by examining its scope across different types of learning and different neural systems, and assessing its relation to early experience, including stress and parental nurturing. Thus, we are closer to understanding the crucial role played by learning in the academic, occupational, and personal lives of all Americans, and the prospect of preserving and fostering the learning ability in at-risk youth through the application of insights from the cognitive neuroscience of memory, stress, and early experience. APS asks the Committee to support NICHD's sustained behavioral science research portfolio and to encourage other Institutes to partner with NICHD to maximize the development of interventions in early stages of life that have invaluable benefits in adulthood.

National Institute on Deafness and Other Communication Disorders (NIDCD): NIDCD supports a vibrant and important portfolio of behavioral science research on voice, speech, and language. This research expands our understanding of the role of each hemisphere of the brain in communication and language, of early specialization of the brain, and of the recovery process following brain damage. This research will further our understanding of the neural bases of language disorders. More recently, scientists are also exploring the genetic bases of child language disorders, as well as characterizing the linguistic and cognitive deficits in children and adults with language disorders. For example, specific language impairment (SLI) is a communication disorder where acquisition and mastery of language is delayed in the absence of other problems such as mental retardation, hearing loss, or emotional disorders. It affects about seven percent of 5-6 year olds and tends to appear in families, suggesting a genetic component. However, until now, no specific genes have been linked to SLI. But new research is studying this link, and one gene, KIAA0319, appears to play a key role in SLI, and plays a supporting role in other learning disabilities such as dyslexia. This research is verifying that difficulties in reading and language may stem from the same molecular pathways in the brain. This and similar research programs are important as they offer valuable insight into the basis of the disorder and the associated academic problems encountered by many children with SLI. They are also likely to improve the classification, diagnosis, and treatment of other language, reading, and speech disorders. APS asks the Committee to support NIDCD's behavioral science research program and to increase NIDCD's budget in proportion to the overall increase at NIH in order to continue making significant advances in our understanding of and treatments for communication disorders in Americans of all ages.

It's not possible to highlight all of the worthy behavioral science research programs at NIH. In addition to those reviewed in this statement, many other institutes play a key role in the NIH behavioral science research enterprise. These include the National Institute of Mental Health, the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, the National Heart, Lung, and Blood Institute, the National Institute of Diabetes and Digestive and Kidney Diseases, the National Institute on Neurological Diseases and Stroke, and the National Institute on Dental and Craniofacial Research. Behavioral science is a central part of the mission of these institutes, and their behavioral science programs deserve the Committee's strongest possible support.

This concludes my testimony. Again, thank you for the opportunity to discuss NIH appropriations for FY 2011 and specifically, the importance of behavioral science research in addressing the Nation's public health concerns. I would be pleased to answer any questions or provide additional information.