

Opportunities for Psychological Scientists at the National Institute on Aging

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In prior columns, I have discussed the centrality of psychological science as a hub discipline, the rise in collaborative and interdisciplinary science, and the important role psychological scientists have to play in these developments. Large scale science is expensive, however, and these encouraging developments are being constrained by the stagnation in the growth in federal funding for psychological science. For instance, according to statistics provided by the American Association for the Advancement of Science, the total research budget (excluding development and R&D facilities) of the National Institutes of Health (NIH) has hovered around \$27 billion in recent years.¹

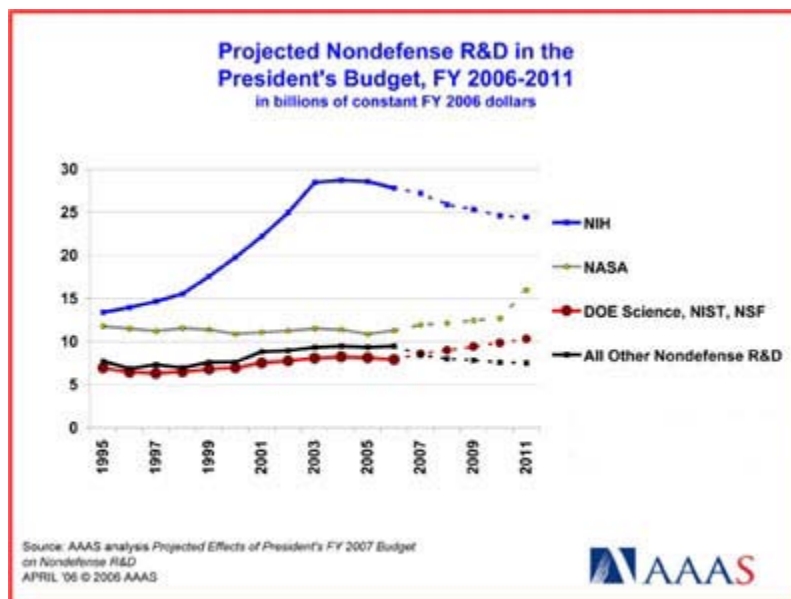


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on Aging (NIA). I should note that from 2004 to 2007 I served on the National Advisory Council on Aging, the group of outside scientists that advises NIA on the conduct and support of research and training related to aging.

Hodes was named director of NIA in 1993, so he has seen a doubling of the NIH budget as well as the recent retrenchment. He is an eminent immunologist who remains active in research through his direction of the Immune Regulation Section at the NIH campus. As director, Hodes has been a strong spokesperson for funding the best science relevant to aging and age-related

The stagnation of the budget at the NIH, coupled with dramatic increases in the number of grant applications and the mean budget size of the applications submitted to the NIH, has led to a lowering of paylines and, in some cases, a rethinking of institute funding priorities (see Loscalzo, 2006). As a result of these developments, I asked several institute directors at NIH to share with us their goals for their institute and the role they see for psychological scientists. I am pleased to feature here my interview with Richard J. Hodes, director of the National Institute

diseases, and he has overseen an expansion of NIA funded scientists to include more basic psychological scientists.

As director, what are your goals for NIA?

Life expectancy has nearly doubled over the last century, and in less than 50 years there will be more than 90 million Americans age 65 and older. NIA's primary goal is to encourage and support the best research on aging processes at levels spanning from molecular to social, diseases of aging, and special problems facing older people. Our goals at NIA are to learn what contributes to healthy or successful aging and to understand the factors that increase the risk of disease and disability associated with growing older. The NIA has a vibrant intramural research program, including work in psychology, but the bulk of our research dollars goes to outside investigators through our four extramural research programs. It is also important that the institute support training and career development for our investigators and create scientific infrastructure - resources that can be used by the wider scientific community to accelerate research on aging. This infrastructure ranges from cell lines and animal colonies for biological research to supporting longitudinal studies with data openly accessible to all investigators, studies such as the Health and Retirement Study and the Midlife in America Study, both of which are rich in cognitive and other psychological data.

An important issue at NIA is achieving the appropriate balance between basic and applied aging research. NIA will continue to support the best basic behavioral and social science research that will help us understand the psychological and social factors shaping the aging processes. We have also embraced and support cognitive and social neuroscience, neuroeconomics of aging, and research into the function of the healthy aging brain. At the same time, we must be strongly committed to accelerating the pace of translation, and psychologists we support have helped move aging research forward by translating findings into real world settings. The Advanced Cognitive Training for Independent and Vital Elderly clinical trial of cognitive training is one example, and we continue to support other clinical trials investigating the role of exercise and cognitive training in improving cognitive function. More recently, NIA has funded several large studies exploring how social engagement may enhance cognitive function and other aspects of health in older individuals. Psychology is a key part of both our basic and applied efforts. In October 2007, the NIA sponsored a Cognitive Aging Summit with the McKnight Brain Research Foundation. The Summit showcased some of the leading work in cognitive aging and demonstrated the degree to which psychological science can productively interact with other fields, such as biologic neuroscience.

NIA, like all institutes at NIH, has seen increasing numbers of applications, increased costs per application, and a steady or decreasing real-dollar budget for funding grants. What are your priorities during these difficult times, and what do you see to be the funding prospects over the next few years?

Many established and highly productive scientists with active research teams are facing situations where funding is insufficient to allow them to sustain their research programs. For those new scientists who are getting started in the field and who show great promise, the current tight budgets can be discouraging. As a nation, we cannot afford either of these losses. On the contrary, we are in great need of drawing more talented researchers to address problems and issues related to aging. Consider this in the context of the huge demographic changes happening not only in the United States but across the world. It is essential that we maintain our highly productive laboratories and our supply of new scholars in order to address the pressing biomedical, behavioral, and social problems of aging. At NIA, we have had to make some difficult decisions. One of these has been to implement an average cut of 18 percent in the requested budget of all funded grants over the past few years. We have also limited the size of Program Project grants to \$1.5 million direct funds per year. This has allowed us to maintain a somewhat higher funding line than would otherwise have been possible. We also decided to give new investigator R01s a significant advantage in funding. NIA continues to fund important new areas such as neuroeconomics and social neuroscience through set-asides, but we do less of this during current times of constrained funding lines than we have in the past.

In what ways has psychological science contributed to your goals for NIA?

It is now well accepted within NIH, and, I suspect, among psychological scientists generally, that psychological science is an interdisciplinary venture, in which the interface with biology, neuroscience, genetics, economics, and other social sciences is essential for progress on topics relevant to health, adaptive function, and psychological well-being over the life course. Some of the real advances in the psychology of aging are at these interdisciplinary junctures. For example, in health psychology, NIA-funded psychologists are making advances in understanding the biological pathways through which psychosocial stress leads to health disparities. In cognitive neuroscience, NIA-funded psychologists have contributed to advances in our understanding of age differences in how the brain processes information and how brain function differs between healthy and cognitively impaired older adults. In areas related to decision making, NIA-funded psychological scientists have been central in transforming traditional economic models of how people make choices in health-related and financial domains. In the longer term, fields such as neuroeconomics and social neuroscience hold potential for designing interventions to enhance the social and economic function of individuals into very old age.

Another key goal of the NIA is to reduce age-related declines. Not that long ago, aging was generally conceived of as a process of general decline in psychological function and social engagement. We now know that some socioemotional skills improve with age and have positive impacts on well being, flying in the face of debilitating stereotypes about aging. Even in the realm of cognition, we now know that the aging profiles are many and varied and malleable within individuals. Here it might be helpful to provide just a few examples of psychological research supported by the NIA. Psychologists have demonstrated the importance of exercise in healthy cognitive aging, and how speed of processing can be enhanced by training, possibly leading to safer driving performance. In addition, older adults' cognitive performance can be

made to look very much like that of younger individuals (and vice versa) by manipulating their time perspective. We also support psychologists' work on loneliness and its somatic consequences. Many more concrete examples can be found in some of the National Academy of Science reports that NIA commissioned, including the report *When I'm 64*, by the Committee on Aging Frontiers in Social Psychology, Personality, and Adult Developmental Psychology (Laura L. Carstensen and Christine R. Hartel, Editors) and an older report, *The Aging Mind*, by the same committee (and editors).

In what ways can psychological science contribute better or differently to these goals in the next few years?

Characterizing age-related psychological change remains essential for advancing our understanding of how age impacts behaviors and decisions that, in turn, shape the subjective well-being, social relationships, physical and mental health, physical function, and economic well-being of older adults. Advances in basic psychological science are needed to improve behavioral interventions, to understand the factors that determine adherence to them, and to determine who benefits from interventions and why. Psychological science is essential to the discovery of pathways and mechanisms through which psychological and social factors such as life stressors, stereotypes and discrimination, and social relationships impact health. Recognizing these contributions, NIA is committed to continuing our support of research on basic psychological and social processes associated with normal aging; their relationship to individual, contextual, and environmental factors that impact these outcomes; and their neurobiological and genetic basis. Moreover, as the population ages and as the public seeks sound advice on issues related to psychological health in older age, it is essential that the NIA continue its support for translation and communication.

We have seen psychologists respond very creatively to the call for an increase in the pace of translational research. I have also been impressed to see psychologists contributing substantially to work in other fields, including the neuroimaging of normal aging and dementia, and in emerging interdisciplinary fields such as behavioral and neuroeconomics, social neuroscience, and behavior genetics. Psychologists have begun to take advantage of the tremendous opportunities made available by advances in genetics and the human genome project by seeking to connect their work more securely to its physiological and biological substrates. This is something we strongly encourage. The NIA also supports a great deal of work in demography and longitudinal studies of aging, some led by psychologists, and I look forward to continued interest in these projects among psychological scientists, as they are important opportunities for researchers who wish to understand psychological development over the life course.

Among the psychological scientists who have applied for funding to NIA, some have been trained in the fields of lifespan or gerontology, whereas others have been trained in more traditional fields but have research interests that bear on aging. What advice would you give to young investigators from each of these backgrounds if they were considering NIA as a possible source of research funding?

While continuing to support those trained in life course-related fields, the Behavioral and Social Research (BSR) Program in particular has been very active in recruiting leading junior and senior researchers to aging who were trained in other areas while also linking cutting edge research in basic areas to aspects of aging relevance. This has worked very successfully in areas including economics and demography. I strongly encourage both senior and junior investigators to contact NIA staff to discuss their interests in basic or applied research and how it might be relevant to aging or the aged. There is growing interest in how early childhood experiences affect late life health and well-being. As science becomes more interdisciplinary, multiple skills are needed to address the emerging research questions in psychology and other fields, and some of the most exciting work is being done at the intersections of various fields and approaches.

I would encourage interested researchers to consider attending the APS Annual Meeting Pre-conference Workshop on "Opportunities for Advancing Behavioral and Social Research on Aging: An Introduction for Psychological Scientists" funded by the NIH Office of Behavioral and Social Science Behavioral Research. Also, the NIA Summer Institute (<http://www.nia.nih.gov/NewsAndEvents/Calendar/summerinstitute2008.htm>) and the RAND Mini-Med School and Summer Institute (<http://www.rand.org/labor/aging/rsi/>) offer training opportunities for graduate students, post doctoral fellows, and faculty. General information about training opportunities sponsored by NIA and in the Institute's Intramural Research Program can be found at <http://www.nia.nih.gov/GrantsAndTraining/TrainingSupport.htm>.

References

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