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Collaborative Research

National Academy of Sciences Visits the CCSN

On January 27, 2011, the Center for Cognitive and Social Neuroscience (CCSN) held a site visit for representatives from the National Academy of Science's National Research Council's (NRC) Committee on Population. The CCSN was selected for this visit as the setting of exemplary, cutting-edge interdisciplinary research. This visit was part of the Committee on Population's ongoing, international exploration of research on aging. Linda Waite, a member of the Committee on Population and of the CCSN, and a leading researcher in the field of aging, helped to facilitate the site visit.



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LINDA WAITE

ABOVE: The National Academy of Sciences Committee on Population visits the Center for Cognitive and Social Neuroscience



On January 27, 2011, the Center for Cognitive and Social Neuroscience (CCSN) held a site visit for representatives from the National Academy of Science's National Research Council's (NRC) Committee on Population. The Committee was represented by Michael Shanahan, professor of sociology at the University of North Carolina, Keiko Ono, senior program associate of the National Research Council, and Linda Waite, professor of sociology at the University of Chicago. The representatives met with the leaders of many scientific teams to learn more about the Center's ongoing interdisciplinary, multi-institution, research projects. The visit highlighted the work of the Chicago Health, Aging, and Social Relations Study (CHASRS), an ongoing longitudinal research program that brings together sociological, psychological,

and biological levels of analyses to understand the relationships among, and mechanisms underlying, social isolation, feelings of loneliness, health, and the aging process.

The Committee was also briefed on the work of the Chicago Endothelial Function Study (CHEFS), the Chicago Social Brain Network, the Social Resilience Training program, the Arete Initiative, and the Social Regulation of Gene Transcription, a multi-institution research project currently underway in collaboration with John Capitanio at University of California—Davis, and Steven Cole of the University of California—Los Angeles, under the direction of principal investigator John Cacioppo. Representing the CCSN at the meeting were: John Cacioppo, Director of the Center for Cognitive and Social Neuroscience, Jianqiao Ge, postdoctoral scholar in psychology, Louise Hawkey, Associate Director of the Social Neuroscience

Lab, Lianne Kurina, assistant professor of epidemiology, Maïke Luhmann, research associate, Christopher Masi, assistant professor of medicine, and Ronald Thisted, professor and chairman of biostatistics, and Linda Waite, professor of sociology.

The site visit committee commented on the impressive research teams, the remarkable variety of topics being studied, and the state-of-the-art laboratory for collecting biological, physiological and psychological measures at the Social Neuroscience Laboratory in the Biopsychological Sciences Building.

The National Research Council Committee on Population

“The purpose of convening the committee was to bring a group of people from many different disciplines to determine the most promising research opportunities in the field of

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Collaborative Research *Continued*



ABOVE: Linda Waite, Professor of Sociology at the University of Chicago

aging,” explains Waite. “The Committee is composed of experts in sociology and related fields, and we hope this interaction will allow experts in related disciplines to better share knowledge and practices. There are areas that sociology measures and conceptualizes well that would benefit social psychology, and vice versa. Sharing these concepts will help all these allied researchers to think about problems better. Assembling a group of thoughtful people on the cutting edge of the field was a good first step.”

The Committee began this process by surveying numerous experts on aging to determine important topics in the field, the most influential recent research publications, and the areas where new interdisciplinary research may have the greatest impact. Based on their received responses, the Committee organized site visits, including this visit to the CCSSN. Following the site visits, the Committee plans to commission papers and hold a workshop in June 2011, producing an edited volume in the following year.

“Our hope is that this approach will help researchers in different disciplines import new approaches and perspectives in order to apply them to solve their own problems. Bringing together thinkers who are willing to work across disciplines, for the benefit of social science at large, can only be good. We cannot make any guarantees, but I think this is a wonderful opportunity,” says Waite.

The Committee on Population is funded by the National Institute on Aging through the National Research Council of the National Academy of Sciences. The National Research Council facilitates the

integration of existing knowledge and makes this research accessible to a broader audience. The NRC has contributed to the development of scientific consensus on many topics including: seatbelt use, x-rays, best practices for collecting scientific data in developing countries, racial and ethnic disparities in health and access to health care, and the United States Department of Agriculture’s food pyramids.

“The purpose of the NRC is not to commission original research, it is to synthesize and integrate existing research. Often these efforts of the NRC are very high profile, helping to direct public attention to these critical issues,” explains Waite.

National Priorities: Research on Aging

This work on aging is coming at a critical time. An aging population presents many problems that may best be addressed by researchers working in different domains.

“There are so many questions to answer: What does it mean to have an aging population? What are the implications for couples, for families, for the workforce? How are we going to pay to solve these problems? We have an increase in life expectancy, which is good. However, we have a host of costs associated with that increase in life expectancy, from direct medical costs to costs of care and support. This is all happening very quickly. We must be prepared to determine how we allocate our resources as a society—do we use them disproportionately for people at the end of their lives? If so, how do we educate the next

generation? How do we pay for childhood immunizations?” explains Waite.

One specific problem the Committee on Population is addressing is the slower rise in life expectancy in the United States as compared to other developed Western countries like Denmark, the United Kingdom, and France.

“The gap between these other countries and the United States is widening, and we do not know why. We think that some of the gap may be attributable to smoking, specifically women smokers. Men have always been heavier smokers, but then began to cut back. Women in the United States did not begin smoking in large numbers until the 1940s, during World War II. Now we have a cohort of aging women who are old enough to be dying from the effects of smoking,” explains Waite.

This is in stark contrast with Denmark, which has seen large increases in life expectancy in recent years.

“In Denmark, there has been a powerful public health campaign encouraging people to drink less, move more, stop smoking, and eat less—asking people to think of their health and put away the herring,” explains Waite. “And it is working. Denmark was on par with the United States, but they have now pulled ahead. There are fascinating mechanisms underway that we do not fully understand, and there will be a lot of challenges we need to address. This is why we need interdisciplinary, national and international action-- we must understand the social, economic, ecological, psychological, biological, physiological processes producing these patterns, so we are able to intervene with effective public health campaigns.”

National Social Health and Aging Project

Waite’s own research on aging through the National Social Health and Aging Project will contribute pertinent information to the Committee on Population’s inquiry. The project is currently in the field collecting a second wave of data on a group of three thousand participants. The project is re-interviewing participants who were last interviewed five years ago, and is now interviewing spouses and partners of those participants.

“For the first time, we will have data on aging couples, which is very exciting. Likewise, we spent a great deal of time considering how things were measured in the first round of data collection, and attempting to improve on our methods. We will be able to determine this group’s health,

relationship, and functioning trajectory for the last five years,” says Waite.

Because the recession occurred between two waves of data collection, the project will also look at the impact of the economic downturn on this group in areas such as job loss, early retirement, changes in living arrangements, and accompanying physical, psychological, and family consequences of these changes.

The data collection for this project involves survey measures, including a comprehensive mental status measure used by geriatricians with clinical samples, as well as physiological measures such as height, weight, waist circumference, hip circumference, salivary cortisol measurement, vaginal swabs, and finger-stick blood samples (CRP, Epstein-Barr, A1C).

Future Directions

Waite maintains that one of the most exciting areas in the future of aging research may be one of the most difficult to fully understand, namely gene expression and gene-environment interaction over the lifespan. The measurement and understanding of this interaction is poised to present a host of challenges to researchers in the field.

“As we learn more about development in context, gene-environment interactions, measured through gene expression, will be even more critical,” says Waite, “We only have glimmers of the underlying complexity, and we are learning it is harder to measure than we originally thought. The interaction of the environment with biology may affect many aspects of life—attention, cognitive function, impulse control, cancer, stress reactivity—and provides oceans of opportunity for discovery.”

Waite explains further that current gene-environment interaction research is focused on the individual, but the additional group processes at work, including religious participation, family membership, friendships, and social networks, must also be examined.

Says Waite, “This is enormously complex. Thinking carefully about that complexity, and not reducing the problem to our own areas of expertise, is unbelievably important. Nothing is all social, or all genetic, or all biological. This is why we require ‘Team Science.’ But we may need new kinds of teams.” ■

RECENT PUBLICATIONS BY LINDA WAITE

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