

NATIONAL RESEARCH COUNCIL

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DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES AND EDUCATION
Board on Behavioral, Cognitive, and Sensory Sciences

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BOARD ON BEHAVIORAL, COGNITIVE, AND SENSORY SCIENCES NATIONAL RESEARCH COUNCIL

NIA Seminar on Loneliness & Social Isolation

June 4, 2015
Keck # xx
500 Fifth Street, NW
Washington, DC 20001

(Gallery Place and Judiciary Square metro stops; free parking at Keck Center with RSVP)

DRAFT AGENDA

12:45 Sign-in and Badge Pick-up

1:00 *Welcome to the National Academies*
Barbara Wanchisen, Director, BBCSS

1:10 *Setting the Stage for the Seminar*
Susan Fiske, Chair, BBCSS

1:25 *Introductory Remarks from the National Institute on Aging*
Lis Nielsen & Lisa Onken Division of Behavioral and Social Research

Panel Presentations: Each panelist is allotted 15 minutes to answer the questions provided in advance by NIA, highlighting relevant information from their field or their work in particular. (See questions at end of this agenda.)

1:45 *Panel Presentations*
Lisa Berkman, Harvard University
David Sbarra, University of Arizona
Julianne Holt-Lunstad, Brigham Young University
Andrew Steptoe, University College London (participating virtually from the UK)

2:45 BREAK

3:00 *Panel Discussion: Each of the Three Questions will be Covered in Turn*
Susan Fiske, moderator

4:30 *Conclusions, Final Thoughts, Next Steps*
Susan Fiske, moderator
Lis Nielsen & Lisa Onken, NIA

5:00 Adjourn meeting

Developing interventions to reduce social isolation and/or loneliness in mid- to late life

Social relationships have long been known to contribute to health outcomes in later life. A recent meta-analysis of over 140 studies showed that lack of good social relationships poses a mortality risk equivalent to smoking (Holt-Lunstad, Smith & Layton, *Plos Medicine*, 2010). Converging evidence from multiple independent sources suggest that maintaining social connections is not only salubrious as we age, but that socially isolated individuals, particularly elderly ones, are at increased risk of morbidity and premature mortality. Recent analyses of data from the *Health and Retirement Study* demonstrate that subjective feelings of loneliness are associated with increased mortality risk, above and beyond any effect of objective social relationships or health behaviors (Luo et al., *Soc Sci Med*, 2012). Data from the *English Longitudinal Study of Ageing* suggest that objective social isolation (SI), rather than loneliness (L), is the more significant predictor of all-cause mortality in older adults, even in models adjusting for age, sex, demographic factors, and health indicators including diabetes, CHD, stroke, and depression (Steptoe et al., 2013 *PNAS*). The mechanisms responsible for these effects have, until recently, been elusive. Furthermore, the causes and consequences of SI and L may differ at different life stages, and there is not yet clarity with regard to how these factors operate in mid-life and older age, and how that might differ from earlier ages. The effort to elucidate the pathways by which loneliness, in particular, operates has identified potential roles for functional changes in the antigen-presenting cells of the immune system (e.g., evidence from gene expression studies by Cole et al., 2011) among potential mechanisms, and NIA supports an active research effort in this area. The scientific literature suggests the viability of several potentially effective interventions to reduce loneliness (see the recent meta-analysis of 50 relevant studies by Masi et al., 2011), with approaches aimed at changing social cognition appearing to hold greatest promise; however, many of the studies were underpowered (median $N = 90$ for randomized trials). Meanwhile, there are a growing number of national and international efforts to develop interventions to increase social engagement and reduce social isolation and loneliness through community-based interventions.

NIA is interested in research that can help resolve whether social isolation and loneliness differentially impact morbidity and mortality through distinct causal pathways. Overall, although there is no strong consensus as to whether it is objective social isolation or the subjective feeling of loneliness that is the more potent causal agent. There is a need to for interventions targeted specifically at changing loneliness or social isolation (with the ultimate goal of achieving a desirable health outcome), and intervention development studies could contribute to the data to resolve this issue. An approach to intervention development that NIH has adopted through the NIH Science of Behavior Change (SOBC) initiative may have utility here (see for example: <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-14-018.html>). The overall goal of the SOBC Program is to implement a mechanisms-focused, experimental medicine approach to behavior change research. An experimental medicine approach involves identifying an intervention target, developing assays (measures) to permit verification of target engagement, engaging the target through experimentation or intervention, and testing the degree to which target engagement produces the desired behavior change (or, in this case, a change in loneliness or social isolation).

BSR has been advised in the course of its quadrennial divisional review by the National Advisory Council on Aging to expand our interventions portfolio in this area. But, as with RCTs throughout NIH, there are concerns regarding the cost of conducting rigorous trials given resource constraints. NIA is particularly interested in understanding how to design intervention development studies to permit rigorous testing of theory; e.g., shedding light on pathways linking social contexts and individual differences to loneliness and/or social isolation, or explicitly testing theories about how to change social relationships. We seek expert input on the

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most promising strategies for advancing intervention development efforts (including but not limited to behavioral interventions, individual or group- level interventions, community- or systems-level interventions, etc.) in this area.

Questions for an Expert Meeting:

What are the greatest needs in intervention development research for social isolation and loneliness, and what strategies can be used to address these gaps? How can a focus on individual differences contribute to the development of personalized interventions, and how can this focus be infused into intervention development research on SI and L?

- How can early stage intervention development studies (e.g., stage 1) inform the science? What can be gained through studies with shorter term outcomes, targeting social isolation, loneliness, and networks rather than health to demonstrate ability to impact these targets?
- What is the role of mid-stage intervention development studies (e.g., research-based stage 2 and community-based stage 3 efficacy trials with maximal internal validity)? How can theories best be tested and how can questions of mechanisms of behavior change best be built into these studies? How can mid-stage efficacy trials be designed to identify responders and non-responders?
- Where has the groundwork been laid for late-stage intervention development studies (e.g., stage 4 effectiveness trials with maximal external validity)? That is, are there efficacious interventions where there is also evidence that they can be efficaciously delivered in the real world, and if so are these interventions ready for effectiveness trials? For efficacious interventions being considered for effectiveness trials, have issues of “dosage” (frequency, intensity and duration) been sufficiently addressed, with respect to both fidelity of implementation and in achieving targeted outcomes? How can effectiveness studies be designed to shed light upon the mechanisms that account for response effects?

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