BIOGRAPHICAL SKETCH

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NAME: Dagenbach, Dale

eRA COMMONS USER NAME (credential, e.g., agency login): DDAGENBACH

POSITION TITLE: Professor & Chair of Psychology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
New College	BA	06/1976	Psychology
Michigan State University	MA	06/1983	Developmental Psychology
Michigan State University	PhD	06/1985	Cognitive Psychology
Johns Hopkins University	Post Doc	06/1990	Cognitive Neuropsychology

A. Personal Statement

My training is in cognitive psychology and cognitive neuropsychology. The beginning of my career focused on the role of inhibitory processes in cognition, attention and perceptual encoding, and exploring the creation of semantic memories. During the past 10 years, I have collaborated in multiple studies of cognitive aging and interventions designed to reduce aging's effects through memory and attention training. Five years ago, I began a collaboration with the Laboratory for Complex Brain Networks using network science methods to look at how different cognitive tasks might change the topology of human brain functional connectivity networks as measured with fMRI data. This has been a successful collaboration with publications, grant applications, undergraduate and graduate student training, and the continued provision of office space and computing facilities for me in their lab. I'm also a member of the Wake Forest Center for Biomolecular Imaging. My knowledge of cognition, functional connectivity, and network science would be available for projects in the proposed BSMART project.

a. Stanley, M.L., Simpson S.L., Dagenbach D., Lyday R.G. Burdette J.H. (2015) Changes in brain network efficiency and working memory performance in aging. PLoS ONE 10(4): e0123950. doi: 10.1371/journal.pone.0123950

b. Stanley, M.L., Dagenbach, D., Lyday, R.G., Burdette, J.H., & Laurienti, P.J. (2014). Changes in global and regional modularity associated with increasing working memory load. Frontiers in Human Neuroscience, doi: 10.3389/fnhum.2014.00954

c. Rzucidlo JK, Roseman PL, Laurienti PJ, Dagenbach D (2013) Stability of whole brain and regional network topology within and between resting and cognitive states. *PLoS ONE 8(8)*: e70275. doi:10.1371/journal.pone.

d. Bolt, T.S., Hampton, R.S., Furr, R.M., Fleeson, W., Laurienti, P.J., & Dagenbach, D. (in press). Integrating personality/character neuroscience with network analyses. In J.R. Absher & J. Cloutier (Eds.). Neuroimaging Personality and Character: Traits and Mental States in the Brain. Academic Press.

B. Positions and Honors

Positions and Employment

1984-1986	Assistant Professor of Psychology, Millersville University
1986-1990	Associate Professor of Psychology, Millersville University
1988-1990	NIMH Postdoctoral Fellow in Cognitive Neuropsychology, Johns Hopkins University
1990-1992	Assistant Professor of Psychology, Wake Forest University
1992-2002	Associate Professor of Psychology, Wake Forest University
2002 -	Professor of Psychology, Wake Forest University
2006 -	Chair of Psychology, Wake Forest University

Other Experience and Professional Memberships
2005-2009	Associate Editor, *Perception & Psychophysics*
2002-2005	Consulting Editor, *Perception & Psychophysics*
1993-1999	Consulting Editor, *Journal of Experimental Psychology: Human Perception and Performance*
2010-2014	Treasurer – Council of Graduate Departments of Psychology
1991 -	Member – Psychonomic Society
1995 -	Member – American Psychological Society

Honors
1995	Wake Forest University Excellence in Research Award

C. Contributions to Science

1. My collaboration with the Laboratory for Complex Brain networks began five years ago at a time when the vast majority of studies of functional connectivity focused on resting state data. The underlying assumption was that brain network topology was stable over time and conditions, although it could be altered by disease. Bringing my training in cognitive psychology, I proposed using repeated measures designs collecting fMRI data as participants alternated between resting state and a cognitive task. Our studies showed that network topology did indeed change as a function of task, although many of the network properties remained consistent from one session of the same task to another. Our publications on this issue were among the first to systematically explore this. In addition, the use of the repeated measures design has provided a rich data set for exploring a number of questions in network science, and, in fact, another project using this approach will provide the data set for the research in this proposal. The relevant references are those shown in the personal statement section.

2. My first noteworthy contribution to cognitive psychology came through a series of studies showing the importance of inhibitory processes in cognition, and in subsequently co-editing an influential edited volume that brought together that work with other pioneering studies on this topic. Inhibition has remained a vital topic in cognitive psychology since that time.
    a. Dagenbach, D., & Carr, T.H. (Eds.). (1994). Inhibitory processes in attention, memory, and language. San Diego, CA: Academic Press.
    b. Dagenbach, D., Carr, T. H., & Barnhart, T. (1990). Inhibitory semantic priming of lexical decisions due to failure to retrieve weakly activated codes. Journal of Experimental Psychology: Learning, Memory, and Cognition*, 16,* 328-340.
    c. Carr, T. H., & Dagenbach, D. (1990). Semantic priming and repetition priming from masked words: Evidence for a center- surround attentional mechanism in perceptual recognition. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16,* 341-350.
    d. Dagenbach, D., Carr, T. H., & Wilhelmson, A. (1989). Task- induced strategies and near-threshold priming: Conscious influences on unconscious perception. Journal of Memory and Language, 28, 412-443.

3.. A second line of work looked at the benefits of training cognitive processes in older adults and at the transfer of those gains from the processes trained to other areas of cognition. Our work in this area was among the first to systematically demonstrate and explore these transfer effects. Specifically, older adults

improved on recognition memory using a repetition lag training procedure, and those benefits transferred to speed of processing and executive function tasks.

   a. Bailey, H., Dagenbach, D., & Jennings, J.M. (2011). The locus of the benefits of repetition lag memory training.   Aging, Neuropsychology, and Cognition, 18, 577-593.
   b. Legault, C., Jennings, J.M., Katula, J.A., Dagenbach, D., Gaussoin, S.A., Sink, K.M., Rapp, S.R., Rejeski, W.J., Shumaker, S.A., Espeland, M.A., and the SHARP-P Study Group. Designing clinical trials for assessing the effects of cognitive training and physical activity interventions on cognitive outcomes: The Seniors Health and Activity Research Program Pilot (SHARP-P) Study, a randomized controlled trial. BMC Geriatrics, 2011, 11:27
   c. Jennings, J.M., Dagenbach, D, Engle, C.M., & Funke, L.J. (2007). Age-related changes and the attention network task: An examination of alerting, orienting, and executive function. Aging, Neuropsychology, and Cognition, 14, 353-369.
   d. Jennings, J.M., Webster, L.M., Kleykamp, B.A., & Dagenbach, D. (2005). Recollection training and transfer effects in older adults: Successful use of a repetition-lag procedure. *Aging, Neuropsychology, and Cognition, 12,* 278-289.

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/1TW05rfVucs5m/bibliography/48807715/public/?sort=date&direction=ascending

D. Research Support

Ongoing Research Support

Wake Forest University Collaborative Pilot Grant   7/1/2014 – 6/31/2016
This funds a collaboration with the Laboratory for Complex Brain Networks to study network topology as it relates to self-regulation processes.
Role: PI

Completed Research Support

Wake Forest University Social, Behavioral, and Economic Sciences Research Fund   1/1/2011 – 12/31/2013
This study involved a collaboration with the Laboratory for Complex Brain Networks to do functional neuroimaging of neural changes in functional connectivity associated with differences between rest and working memory
Role: PI

NIH   2007 – 2009
Seniors Health and Activity Research Program Pilot
This study examined the effects of memory training and aerobic exercise on elderly adults with slightly declining cognitive function
Role: Co-PI

Wake Forest University Cross-Campus Collaborative Research Support Fund   6/1/04 – 6/1/07
Effects of Deep Brain Stimulation on Executive Function Among Parkinson's Disease Patients
This study looked at the cognitive consequences of implants in the subthalamic nucleus that are used to treat the symptoms of Parkinson's disease.
Role: Co-PI

Wake Forest University Science Fund   6/1/01 – 12/1/02
Executive Function Training as an Intervention for Cognitive Aging
This study looked at the benefits of executive function training in older adults using Stroop and source memory practice procedures.
Role: Co-PI

Wake Forest University Cross-Campus Collaborative Research Grant 5/1/97 – 5/1/99
Cognitive Dysfunction and Recovery Following Thalamic Stroke
The effects of thalamic strokes on cognitive functioning in multiple domains were assessed.
Role: Co-PI