

SSWR Methods Workshop

Thursday, January 12, 2017, 8am – 12 noon

Title: Getting Connected to fMRI Technology and Methodology in Social Work Research

Presenters:

Jessica M. Black, Boston College School of Social Work

Shaun M. Eack, University of Pittsburgh School of Social Work

Abstract

This workshop aims to build an understanding and application of functional magnetic resonance imaging (fMRI) for social work researchers. fMRI provides a non-invasive measure of brain structure and function, and is the leading functional neuroimaging technology in cognitive neuroscience research. Social work adheres to the biopsychosocial model of development yet the biological domain is frequently excluded from study designs. Neuroscientific research within the social sciences has grown considerably, and this direction presents exciting and innovative opportunities for social work researchers. Recent advancements in functional neuroimaging provides a complimentary and unique vantage point to understand, define and build cutting-edge social work interventions to improve conditions for clients and society. Importantly, extramural funding agencies, such as the NIH, seek interdisciplinary proposals that can integrate the biological and psychosocial underpinnings of health and disease.

Objectives: Two social work scholars who design and conduct fMRI research studies with children and adults, and who have published in leading neuroimaging journals, will co-lead this workshop that will:

- **Provide an introduction to neuroimaging technology with an emphasis on fMRI** including the basic principles and current state of research in relation to social work
- **Introduce basic methods and scan stimuli** including an overview of general experimental design followed by the development, selection, and presentation of scanner stimuli using E-Prime and Optseq2
- **Describe sampling, data collection and measurement** along with approaches for integrating brain data with measures from surveys or interviews with an emphasis on diagnosis/classification, prediction and intervention
- **Review analytic techniques** applicable to brain data and their implementation in Statistical Parametric Mapping 12
- **Underscore the importance of proper interpretation of results** and the important limitations of neuroimaging tools
- **Present a summary of neuroscience research resources** and routes to continued connection including building and fostering collaborations, identifying funding, and seeking training
- **Build a space for dialogue** so that participants can work informally with one another in small groups at key points throughout the workshop to apply new knowledge to current and planned projects

At the conclusion of the workshop participants will be able to describe the basic principles and design of fMRI experiments, interpret basic results and analyses from fMRI studies, identify resources for further education on the topic, and formulate social work research questions integrated with neuroscientific approaches to advance agendas not possible through more standard designs.

Activities: Participants will receive a “Neuroimaging for Social Work Research Getting Started Guide” designed by the presenters specifically for social work scholars to be used throughout the workshop. Workshop content will be presented in a format designed for social work researchers without a formal background in neuroimaging, and will integrate multimedia and images from actual studies, small group discussions, and examples drawn from the presenters’ own line of research (e.g., adult psychopathology, neurodevelopmental disabilities, recovery and resilience).

Career Level and Prerequisites: This neuroimaging workshop is intended for social work researchers at all career levels, from doctoral students to late career scholars interested in learning about neuroscience, resources, techniques and applications to bridge current, planned, or envisioned projects.

Preferred maximum number of registrations: 25-35

Methods and Approach

The workshop will integrate a multimodal PowerPoint presentation including video and applied examples organized to accompany the getting started guide that all participants will receive for note-taking and future slide reference. The approach will include lecture interspersed with questions and answers, software demonstration, and discussion. Resources to facilitate continued education in neuroscience methods will also be presented, and participants will have the opportunity to engage in small group exercises and discussion applying the workshop principles and concepts.

Presenter Bios

Jessica M. Black, PhD, is an Educational Neuroscientist and an Associate Professor at the Boston College School of Social Work (BCSSW). Dr. Black’s research integrates the use of neuroimaging (functional and structural magnetic resonance imaging), standard neuropsychological behavioral testing and environmental measures to predict outcome in children with risk for learning disabilities. Keenly interested in childhood resilience, Dr. Black has extended her neuroimaging research to better understand the neural underpinnings of humor, positive emotion and mindfulness in children and adolescents. Dr. Black has published in research journals such as *Nature Reviews Neuroscience*, *Proceedings of the National Academy of Sciences, USA*, and *The Journal of Neuroscience*. Dr. Black collaborates with the Center for Interdisciplinary Brain Sciences Research, Stanford University School of Medicine, the Brain LENS Lab at the University of California, San Francisco, and the Gabrieli Lab at Massachusetts Institute of Technology. Dr. Black is also engaged in integrating neuroscience into social work research, education and training. She is the Chair of the Neuroscience in Social Work Special Interest Group (SIG) within the Society for Social Work and Research. Dr. Black developed MSW courses that emphasize neuroscience and designed the *Neuroscience and Social Work Certificate* at Boston College. Dr. Black looks forward to continuing to provide social work

students, practitioners and scholars with education, training, and research opportunities in neuroscience.

Shaun M. Eack, Ph.D. is David E. Epperson Professor of Social Work and Psychiatry at the University of Pittsburgh. His primary research focus is on the development, implementation, and evaluation of psychosocial treatment methodologies for persons with severe mental illness. His recent work focuses on the application of Cognitive Enhancement Therapy, a neurocognitive and social-cognitive rehabilitation program, to persons with schizophrenia and autism spectrum disorders. He has published papers on the efficacy of Cognitive Enhancement Therapy in both chronic and early course schizophrenia, and is now studying the neurobiological effects of the treatment in both schizophrenia and autism. Dr. Eack is particularly interested in the reciprocal impact of biology and the social environment, and the influence of social work interventions on the brain. He directs an NIH-funded research program dedicated to advancing the treatment of severe mental illness through the conduct of psychosocial treatment trials and identification of therapeutic mechanisms using functional neuroimaging.