

Title:

SPECIAL SESSION: Adventures in Translational Research: From Bedside to Bench and Back Again

Type:

Oral

Keywords:

Biomarkers, Neuroscience and Translational Nursing Research

Description/Overview:

This session is designed to describe how nurse scientists can move clinically relevant questions from the patient bedside to the laboratory setting, and back to clinical care covering the various translational research phases. One such program of research focused on traumatic brain injury will be used as an exemplar.

Abstract Text:

The goal of precision health is to move the focus from the “average” patient or “one-size-fits-all” diagnosis and treatments, to individualized healthcare by including an individual’s molecular make up in concert with the environment and lifestyle factors. As we move towards this goal of precision health and precision nursing, nurse scientists must become familiar with and fully utilize the phases of translational research (T0-T4). Nursing scientists with training in omics, symptom science, and biobehavioral measures need to be poised to play scientific and leadership roles in initiatives that utilize these measures as well as clinical phenotyping using patient-reported outcomes (PROs). This session is designed to discuss how nursing science requires various approaches (epidemiologic, basic science, clinical effectiveness and efficacy, etc) in order to foster advances to answer difficult clinical questions. Using an exemplar of one nurse scientist's program of research in traumatic brain injury, the presentation will discuss how researchers can leverage clinical and scientific knowledge to inform work to advance nursing science. First, the presentation will discuss how two questions were initially identified from bedside practice: 1) how can we better care for patients with neurogenic fever following traumatic brain injury? and 2) what can we do to improve older adults' outcomes following traumatic brain injury? Second, the presentation will describe the trajectory of research from clinical research to basic science, and back to clinical research. The role of various methods to move the work forward will be described to include epidemiologic studies to gain understanding of risk factors and natural history of illness/injury, development and use of pre-clinical models, as well as adaptation of work to humans and clinical populations. The presentation will also discuss sources of funding for various types of training and research activities to build a program of research and the need for multidisciplinary collaboration, education and training.

References:

- Thompson, H.J., Hoover, R.C., Tkacs, N.C., Saatman, K.E., & McIntosh, T.K. (2005). Development of posttraumatic hyperthermia after traumatic brain injury in rats is associated with increased periventricular inflammation. *Journal of Cerebral Blood Flow and Metabolism* 25, 163-176.
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- Banks, W.A., Dohi, K., Hansen, K. & Thompson, H.J. (2016). Assessing blood granulocyte colony-stimulating factor as a potential biomarker of acute traumatic brain injury in mice and humans. *Brain, Behavior and Immunity*, 52, 81-87.

Content Outline:

I. Phases of Translational Research

II. Matching Research Questions to Appropriate Translational Approaches

III. Research Trajectory Exemplar

IV: Questions/Answers

Organizer

Hilaire J. Thompson, PhD, RN, APRN
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Biobehavioral Nursing and Health Informatics
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Professional Experience: Engaged in research for more than 20 years with an emphasis on traumatic brain injury. Recipient of NIH R-series awards. Mentor to PhD students and junior faculty.

Author Summary: Dr. Thompson is the Joanne Montgomery Endowed Professor and Graduate Program Director at the University of Washington School of Nursing. She is also core faculty at the Harborview Injury Prevention and Research Center. She received her BSN from Catholic University of America, her MS from Virginia Commonwealth University and her PhD from the University of Pennsylvania. Her work has focused on improving outcomes following traumatic brain injury.