Human-Systems Integration: Research and Promotion

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1. Introduction

In the United States, the National Research Council (NRC) is the operational arm of the National Academy of Sciences. The NRC comprises several committees and boards which are made up of scientists, engineers, and other professionals who have established themselves in their disciplines. The purpose of the NRC is to address questions of national importance through the review of the science.

The Board on Human-Systems Integration (BOHSI) and the ad hoc committees operating under its oversight have issued a variety of reports on the human factors related topics. As examples, BOHSI’s most recent reports have been “Safe Science: Promoting a Culture of Safety in Academic Chemical Research” and “Improving Self-Escape from Underground Coal Mines.” In addition to addressing human factors issues such as these, BOHSI helps define and promote Human-Systems Integration (HSI) to government agencies and industry.

HSI includes the discipline of human factors, but takes a more expansive view than a narrow human-technical system view that deals with one operator and one interface. It expands to organizational influences (macroergonomics), but also to issues of number of operators, skills and abilities of operators, environment, occupational health, training, and other issues that may be affected by the human factors design decision.

For this panel a group of current and former BOHSI members will discuss the strengths and limits of such an organization for promoting and managing a nation’s efforts in human factors. After brief presentations from each of the panellists (identified below) the panel will spend the majority of its time in a question and answer session designed to engage audience members on similar organizations and activities from other countries.

1.1 Presentation Details & Presenter Backgrounds

Theme: We expect the panel will appeal to all areas of human factors and ergonomics, especially to those interested in promoting the discipline to their universities, companies, or government.

Objective: Attendees will gain an appreciation of the US system and will engage in discussions of how similar efforts might aid research and promotion in their countries.

Sara Czaja, PhD— is professor in the Departments of Psychiatry and Behavioral Sciences and Industrial Engineering at the University of Miami and the Scientific Director of the Center on Aging and the director of the multiple university Center on Research and Education for Aging and Technology Enhancement (CREATE). The focus of Dr. Czaja’s work is directed at improving the quality of life for older adults including making technology more accessible, useful, and usable for older adult populations. She is President Elect of Division 20 (Adult Development and Aging) of the American Psychological Association of America.

Francis T. (Frank) Durso, PhD— is professor of psychology at the Georgia Institute of Technology. He is immediate Past President of the Human Factors and Ergonomics Society (HFES). He is co-editor of the American Psychological Association’s (APA) forthcoming Handbook of Human Systems Integration, and co-author of Stories of Modern Technology Failures and Cognitive Engineering Successes. Durso is the 2011 recipient of APA’s Franklin Taylor Award for Outstanding Contributions to Applied Experimental and Engineering Psychology. His current research interests focus on cognitive and strategic factors responsible for managing and updating dynamic situations such as those found in transportation and health care.

Andy Imada, PhD— is the President of the US Human Factors and Ergonomics Society and Past President of the International Ergonomics Association. He is a specialist in human and organizational change and a Certified Professional Ergonomist. Dr. Imada won the 1998 Liberty Mutual Prize and the 2000
Liberty Mutual Medal. His work focuses on helping people and organizations change to improve productivity, safety, quality, and work systems.

William Marras, PhD—is a member of the National Academy of Engineering and a past chair of BOHSI. He is a professor at the Ohio State University. His research is in the area of biomechanics and spinal injury. He is president elect of the US Human Factors and Ergonomics Society.

David Rempel, MD, MPH - is Professor of Medicine at the University of California at San Francisco, Professor of Engineering at UC Berkeley, and director of the Ergonomics Graduate Training Program at UC Berkeley. His research focuses on understanding how tendons, muscles, and nerves are injured at work and how workplace tools, workstations and tasks can be designed in order to prevent musculoskeletal disorders.

Barbara Silverstein, MSN, MPH, CPE, PhD-- was research director for Washington State Department of Labor and Industries SHARP Program and has served on national and international committees including ICOH and IEA. She has conducted ergonomics workshops and research in Central America and Southeast Asia. Her particular focus is on prevention of work-related musculoskeletal disorders.

Length of panel: 90 minutes

Target audience and expected level of interest: Faculty and discipline leaders

Type of room and/or facilities required: We would appreciate having a deis set up with shareable table microphones for the panel, and an audience standing microphone or two depending on the size of the audience which we expect to range from 50 to 200.

Materials needing to be provided (if any): We would appreciate having a deis set up with shareable table microphones for the panel, and an audience standing microphone or two depending on the size of the audience which we expect to range from 50 to 200.