Assessment of an Interdisciplinary Smart Grid Training Program: Effects on Student Understanding, Perceptions, and Future Aspirations

Omolola A. Adedokun[2], Anthony M. Chase[1], James E. Dietz[1]

1. **Purdue University, West Lafayette, IN, 47907**
2. **University of Kentucky, Lexington, KY, 40536**

Abstract

Smart grid technology (SGT) has been a popular topic in classes that involve energy-based content. This is a crucial academic need because of the lack of a technology savvy human infrastructure further identified as the "education-workforce gap" [1]. This educational gap has gained the attention of researchers over the past few years as many have introduced smart grid modules into their curricula. Given the multidisciplinary nature of this definition, it seems appropriate that SGT fits well as the subject of many different academic activities even as early as elementary school [4]-[5]. However, there has been a more substantive focus educationally of implementing SGT in the undergraduate curriculum. This paper reports on the collaboration of Purdue University with Ivy Tech, the community college system in Indiana to develop the Crossroads Smart Grid Training Project (CSTP). Between the two institutions, 59 courses were either created or modified to suit the training of future researchers and technicians of SGT. Overall, the results suggest that the courses enhanced student perceptions and knowledge of Smart Grid technology. Similarly, qualitative data from student responses to an open-ended item suggest that student experiences in the courses enhanced their likelihood to accept Smart Grid technology.

Bios:

ANTHONY CHASE is in his 4th year at Purdue and hopes to graduate with his PhD in December 2016. After receiving his MS in chemistry education at Purdue, Anthony began working for the Purdue Homeland Security Institute (PHSI) to support military research initiatives such as the CASPiE course-based research experience at the United States Military Academy. He also was a project coordinator for PHSI's Cadet/Midshipman Summer Undergraduate Research Fellowship program. Anthony currently serves as PHSI's assessment/evaluation specialist creating evaluation plans for various projects. He can be reached at chase5@purdue.edu.

ERIC DIETZ is a Director in Purdue's Discovery Park, Dr. Dietz is responsible for the catalysis of the Purdue's homeland security research, increasing the impact of Purdue research on society, and organizing interdisciplinary projects within the university. Prior to his current responsibilities, Eric was on loan from Purdue to Governor Mitch Daniels to serve as the founding Executive Director for The Indiana Department of Homeland Security, a new state agency of over 300 people responsible for emergency planning, training, fire and building safety, and disaster response for 6.2 million Indiana residents. During this period, Eric led Indiana's response to 7 Presidential Major Disasters and Emergency Declarations which included restoration and recovery of critical infrastructure. Eric also led the creation of the Indiana Intelligence Fusion Center and the Indiana Fire Training System both new government functions that were created with new laws and funding. Retiring as a Lieutenant Colonel from the U.S. Army in 2004, Dr. Dietz led a number of Army Acquisition and research programs throughout his career including power systems, chemical sensors and command and control systems. Dr. Dietz can be reached at jedietz@purdue.edu.