Implementing and Assessing STEM Learning Communities

Carefully designed and implemented learning communities can lead to increases in student achievement and retention in STEM fields

Workshop Leaders: Ryan Sweeder, Lyman Briggs College, Michigan State University; and Laurie Witucki, Grand Valley State University

Learning communities are designed to fulfill both the academic and social needs of students. Within the workshop we will share different models for STEM learning communities and highlight the key themes across these learning communities that contribute to successful student outcomes. Additionally, we will share our experiences in assessing the efficacy of our learning models.

During the workshop, participants will undertake a needs assessment helping them to begin to create a learning community that is customized to meet their own teaching and learning goals as well as develop a plan of assessment for either new or proposed learning communities. Participants also will help determine the vital role that on-campus student service groups can play in helping to develop communities. Through panel discussion and small group breakout activities, workshop participants will:

- Define learning communities and consider the different ways an effective STEM themed learning community might be structured on their own campus.

- Be able to identify the key ingredients necessary for creating a learning community that targets student success in the STEM fields.

- Be able to identify key criteria for assessing learning communities.

- Use a needs assessment to understand the next steps to creating, improving and/or assessing STEM learning communities on the participant’s own home campus.

About the Workshop Leaders:

Ryan D. Sweeder, Ph.D. is an Associate Professor of Chemistry in the Lyman Briggs College at Michigan State University. He is a member of MSU’s Center for Research on College Science Teaching and Learning (CRCSTL) and is co-director of the STEM Learning Laboratory. He has been involved in the assessment of Lyman Briggs College and is the PI for an NSF funded S-STEM program that developed cohorts of STEM students. Dr. Sweeder has published on the impact of these learning communities including the following:


Dr. Sweeder received the 2012 Curricular Service-Learning and Civic Engagement Award at MSU and recognition for his Enrichment of the Lyman Briggs Experience (2008, 2012). Dr. Sweeder can be reached at sweeder@msu.edu.

Laurie A. Witucki, Ph.D. is the Faculty Director of the WISE (Woman in Science and Engineering) Living Center and an Associate Professor of Chemistry at Grand Valley State University. In 2005 she worked with University administration and housing to develop and launch WISE. She is a member of GVSU’s Committee on Living and Learning Communities and the Advisory Board for the NSF-MAS4 program (Mentoring, Academic Support, and Scholarships for Science Students). She has published on establishing a new learning community and the impact of learning communities on first-year female students in the sciences including the following:


Dr. Witucki has several funded STEM-related grants (AAUW, American Association of University Women Campus Action Project: Breaking through Barriers in science, technology, engineering, and mathematics for Women and Girls: Title of project: “WISE Program Multi-Level Mentoring” and a NSF grant entitled: “Mentoring, Academic Support, and Scholarships for Science Students, MAS”).