SMARTER Teamwork: System for Management, Assessment, Research, Training, Education, and Remediation for Teamwork

Dr. Matthew W. Ohland, Purdue University, West Lafayette

Dr. Matthew W. Ohland is professor of engineering education at Purdue University. He has degrees from Swarthmore College, Rensselaer Polytechnic Institute, and the University of Florida. His research on the longitudinal study of engineering students, team assignment, peer evaluation, and active and collaborative teaching methods has been supported by more than $12.4 million from the National Science Foundation and the Sloan Foundation and his team received the William Elgin Wickenden Award for the Best Paper in the Journal of Engineering Education in 2008 and 2011. Ohland is past chair of ASEE’s Educational Research and Methods division and a member of the Board of Governors of the IEEE Education Society. He was the 2002-2006 president of Tau Beta Pi.

Dr. Misty L. Loughry, Georgia Southern University

Dr. Misty L. Loughry is a professor of Management at Georgia Southern University. She earned her Ph.D. in Management from the University of Florida. Her research interests include organizational control, especially peer control, and teamwork, including peer evaluation of team-member contributions.

Richard A. Layton, Rose-Hulman Institute of Technology

Dr. Richard Layton is an associate professor of Mechanical Engineering at Rose-Hulman Institute of Technology with a Ph.D. from the University of Washington. His professional work includes student teaming, persistence, migration, and retention of engineering undergraduates, and consulting in data visualization and graph design. He is also a singer and songwriter.

rebecca lyons

Mr. Daniel Michael Ferguson, Purdue University, West Lafayette

Daniel M. Ferguson is a graduate student in the Engineering Education Program at Purdue University and the recipient of three NSF awards for research in engineering education. Prior to coming to Purdue, he was assistant professor of Entrepreneurship at Ohio Northern University. Before assuming that position, he was associate director of the Inter-professional Studies Program and senior lecturer at Illinois Institute of Technology, involved in research in service learning, assessment processes and interventions aimed at improving learning objective attainment. Prior to his University assignments, he was the founder and CEO of the EDI Group, Ltd. and the EDI Group Canada, Ltd, independent professional services companies specializing in B2B electronic commerce and electronic data interchange. The EDI Group companies conducted syndicated market research, offered educational seminars and conferences and published The Journal of Electronic Commerce. He was also a Vice President at the First National Bank of Chicago, where he founded and managed the bank’s market leading professional Cash Management Consulting Group, initiated the bank’s non-credit service product management organization and profit center profitability programs, and was instrumental in the breakthrough EDI/EFT payment system implemented by General Motors. Mr. Ferguson is a graduate of the University of Notre Dame and Stanford University.

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Dr. David Jonathan Woehr, University of North Carolina Charlotte

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Dr. Eduardo Salas, University of Central Florida

Andrew Caleb Loignon, UNC - Charlotte

Mr. Loignon is a doctoral student in the Organizational Science program at the University of North Carolina-Charlotte. His research interests include teams and work groups, downsizing, employee selection, and measurement.

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Dr. Shirley C Sonesh, UCF

Dr. Sonesh is a post-doctoral research associate at the Institute for Simulation and Training (IST) at the University of Central Florida (UCF). Before joining the teams and training lab at IST, she conducted research on expatriate assignments and the resulting socialization, career capital gains, and knowledge transfer that occur in the international context. Currently, Shirley is continuing to pursue expatriate research in addition to working on teamwork and training research in the medical domain. In specific, Dr. Sonesh is working on investigating clinical decision making and developing training for rapid response teams in the obstetrics unit to improve team decision making, team coordination, and ultimately patient safety. Other research interests include reducing medication error in EMS contexts, the use of adaptive team tutoring, responses to organizational change, coaching, and augmented reality for medical training; this work is funded by ARL, SHRM, NSF, FFMJUA, among others.
HIGHLIGHTS OF THE PAST YEAR

- Continued substantial growth of the CATME and Team-Maker user base
- Development and integration of training vignettes, including selection of video clips using video-based modeling and video vignettes. Permission for using the video clips has been granted.
- Deployment of a new Wordpress website
- Development of training modules for faculty and students
- Additional publications were written and accepted.
- Multiple workshops conducted promoting the CATME system, with more scheduled.
- System improvements implemented, including a major improvement in functionality and an upgrade critical to the sustainability of the system.

GROWTH OF THE CATME PEER REVIEW AND TEAM-MAKER SYSTEMS

THE WORLD-WIDE USE OF THE CATME: SMARTER TEAMWORK SYSTEM

The CATME Team Tools were designed by researchers in the United States, but the system is used in many other countries. These include: Australia, Bahrain, Bangladesh, Brazil, Canada, Chile, China, Colombia, Costa Rica, Cyprus, Denmark, Ecuador, Egypt, Finland, France, Germany, Hong Kong, India, Indonesia, Ireland, Japan, Kuwait, Lebanon, Malaysia, Mexico, Mongolia, the Netherlands, New Zealand, Norway, Pakistan, Philippines, Portugal, Qatar, Romania, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Switzerland, Thailand, Turkey, the United Arab Emirates, the United Kingdom, and Vietnam.
DEVELOPMENT OF A NEW WEBSITE

A new website was deployed in December to coincide with the release of a major validation study published in the Academy of Management Learning and Education journal. Although some parts of the website are still under development, our current web presence is a major upgrade from our previous site.
DEVELOPMENT OF TRAINING MATERIAL

Team members at UCF are continuing to work on the training modules for CATME, which include training for educators and students on teamwork issues.

TEAMWORK TRAINING:

The educator training begins with the introductory module. This module explains what constitutes good training and how we are going to follow the information, demonstration, practice, and feedback framework throughout all of the educator and student training modules. It also lists the modules that are planned. All training will be accessed via a web browser. A draft has been developed and is under review by the team.

TECHNICAL TRAINING:

The technical training will consist of a series of mini training videos that demonstrate how to perform each teamwork task. Researchers at UCF are identifying tasks that are available to each user and organizing these tasks hierarchically based on their dependencies. These training clips will be very short and available on demand. The implementation will use Captivate so trainees can see exactly what links to click and how to navigate through the system.

PUBLICATIONS

Peer-Reviewed Journals


**Peer-Reviewed Conference**


Peer-reviewed symposia

   1. Lyons, R., Bedwell, W., & Salas, E. *No More Excuses for Teamwork Ignorance: Free Training Resources.*
   2. Loughry, M. L. *Types of Projects: Implications for Teaching Teamwork.*

   1. Loughry, M. L. *The Compelling Need to Do Team-Based Learning Well and Why It Is Challenging.*
   2. Ohland, M. W. *Assigning Students to Teams.*

   1. Ohland, M. W. *Team formation: Alternative methods for assigning students to teams.*
   3. Lyons, R., Bedwell, W., Salas, E., & Heyne, K. *Teamwork in the movies: Applying science to instructional design.*

Poster Sessions and Associated Papers

2. Ohland, M.W., “SMARTER Teamwork: System for the Management, Assessment, Research, Training, Education, and Remediation of Teamwork”, poster to be presented at the Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) program PI conference, including a special session preceding the conference. Sponsored by the American Association for the Advancement of Science (AAAS), Education and Human Resources Programs (EHR), and the Division of Undergraduate Education (DUE) of the National Science Foundation (NSF), January 23-25, 2013, Washington, DC.


Workshops and Invited Presentations

- Ohland, M.W., *Students in Teams*. Science and Engineering Teaching Lunch, hosted by the Center for Teaching and Learning, Stanford University, October 11, 2012.
- Ohland, M. W. (2012). Getting started with team-based learning. IMPACT Faculty Development Program, Purdue University March 22, 2012.
- Ohland, M. W. (2012). Getting started with team-based learning. IMPACT Faculty Development Program, Purdue University March 20, 2012.
- Ohland, Matthew W., and Daniel M. Ferguson, “Improving Management and Monitoring of Student Teams,” Krannert School of Management, Purdue University, January 5, 2012.
- Ohland, Matthew W., “Improving Student Teams without Increasing Instructor Work,” workshop for Chemical Engineering faculty, Purdue University, December 8, 2011.


**OTHER DISSEMINATION**

- Team-Maker / CATME flyers distributed at KEEN conference 2012.
- Team-Maker / CATME flyers distributed at multiple Mudd Design Workshops, Claremont, CA, the INGRoup Interdisciplinary Network for Group Research conference in Colorado Springs, CO, in July 2009, and the ASEE 2011 Conference.
- Richard Layton is championing the development of presentation resources so that other members of the team can effectively promote the use of the system. Further, our “power users” – those who use the system frequently and who are very excited about using it – might be able to give presentations on behalf of the team (particularly to smaller groups of faculty at their own institution).
- The CATME LinkedIn user group is growing. System updates, comments, and technical questions form the discussions.

**SYSTEM IMPROVEMENTS RELEASED IN AUGUST 2012 and DECEMBER 2012**

Two significant developments were released this year—a question editor that enables instructors to add their own supplementary questions to Team-Maker surveys, and a migration of database support from MySQL to Postgres. This last change is needed to ensure the viability of the system in the face of the acquisition of MySQL by Oracle and the uncertainty of open-source support for the software.