Journal of STEM Education: Innovations and Research

Values

- . develop student thinking and problem solving
- integrate real world issues with theories in STEM
- respond to employer needs and expectations
- use educational research and student assessment to inform innovations in education

Editor-in-Chief

P. K. Raju

Thomas Walter Professor Director, LITEE Department of Mechanical Engineering 1418 Wiggins Hall • Auburn University, AL, 36849 Phone: (334) 844-3301 • Fax: (334) 844-3307 Email: pkraju@auburn.edu

Managing Editor

Chetan S. Sankar Department of Management 415 West Magnolia Avenue, Suite 401 Auburn University, AL, 36849 Phone: (334) 844-6504 • Fax: (334) 844-5159 Email: sankacs@auburn.edu

Mission Statement

To promote high-quality undergraduate education in science, technology, engineering and mathematics through peer reviewed articles that provide

- . Case studies and other innovations in education
 - Well founded in STEM content
 - Informed by educational research
 - Tested through assessment of impact on student learning
- Results from educational research that informs teaching and learning in STEM
- Recent developments that impact STEM education in such areas as policy and industry needs

Editorial Assistant

Anna Hewlett

Department of Mechanical Engineering 1418 Wiggins Hall, Auburn University, AL 36849 Phone: (334) 844-3360 Fax: (334) 844-3307 Email: aeh0017@tigermail.auburn.edu

International Editorial Advisory Board Members

M. Dayne Aldridge, Adjunct Accreditation Director for Engineering, ABET, Washington DC

- Timothy J. Anderson, Dean, College of Engineering, University of Massachusetts, Amherst
- Cynthia Atman, Director, Center for Engineering Leaning and Teaching, University of Washington, WA
- Frank S. Barnes, Distinguished Professor, Electrical and Computer Engineering, University of Colorado, Boulder, CO
- Myles Boylan, Program Director, National Science Foundation
- John D. Bransford, James W. Mifflin University, Professorship and Professor, College of Education, University of Washington, WA
- K. Chandrasekaran, Dean and Professor, R.M.K. Engineering college, Kavaraipettai, Tamil Nadu State, INDIA
- Victor L. Cubillos, Rector, Universidad Austral de Chilie, Valdivia, CHILE
- Tim Edlund, Past President, NACRA, Associate Professor, Earl G. Graves School of Business and Management, Morgan State University, MD
- Lyle Feisel, Retired, Dean Emeritus of Thomas J. Watson School of Engineering and Applied Science, Binghampton University, NY
- Richard Felder, Hoechst Celanese Professor Emeritus, Department of Chemical Engineering, North Carolina State University, NC
- Norman Fortenberry, Executive Director, American society for Engineering Education, Washington DC
- Wallace T. Fowler, University Distinguished Teaching Professor, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, TX
- Eli Fromm, Director, Center for Educational Research, Drexel University
- Mythreyee Ganapaty, University Relations Manager, Microsoft India, Hyderabad, INDIA
- Lothar Gaul, Director, Institut fur Mechanik, University of Stuttgart, GERMANY
- Alain Gerard, Professor, Laboratoire de Mecanique Physique, Universite Bordeaux, FRANCE
- George Hairston, Retired Chairman, Southern Nuclear Operating Company, Inc., Birmingham, AL

Mario Letelier, Director, Center for Research in Creativity and Higher Education, University of Santiago de Chile, CHILE

Lillian C. McDermott, Professor of Physics, University of Washington, WA Patricia F. Mead, Professor, Optical Engineering, Norfolk State University, VA

Carolyn W. Meyers, President, Jackson State University, Jackson, MS

- J.P. Moshen, Past President, American Society for Engineering Education (2009), Professor and Chair, Civil Engineering Department, University of Louisville, Louisville, KY
- R. Natarajan, Retired, Director, Indian Institute of Technology, Chairman, Board for Information Technology Education Standards, Bangalore, INDIA

George Peterson, Executive Director Emeritus, Accreditation Board for Engineering and Technology, Baltimore, MD

Winfred M. Phillips, Senior Vice President and Chief Operating Officer, University of Florida, FL

Russell L. Pimmel, Retired, Program Director, CCLI?DUE, National Science Foundation, Arlington, VA

Karl-Heinz Rau, Professor, Business School, Pforzheim University, GERMANY

Christopher Roberts, Dean, Samuel Ginn College of Engineering, Auburn University, AL

- Sydney Rogers, Executive Director, Alignment, Nashville, TN
- Eric Sheppard, Dean, School of Engineering and Technology, Hampton University, VA

Larry J. Shuman, Professor and Associate Dean for Academic Affairs, School of Engineering, University of Pittsburgh, PA

- Karl A. Smith, Morse-Alumni distinguished Teaching Professor of Civil Engineering, University of Minnesota, MN
- Nam P. Suh, Former President, Korea Advanced Institute of Science and Technology (KAIST), KOREA

Gerard Voland, Provost, University of Michigan, Flint, MI

- Phillip C. Wankat, Clifton L. Lovell distinguished Professor of Chemical Engineering , Director, Undergraduate Degree Programs, Purdue University, IN
- Steve E. Watkins, Professor of Electrical and Computer Engineering, University of Missouri Rolla, MO