

Karen Manning Bursic, Ph.D., P.E.
Department of Industrial Engineering
Swanson School of Engineering
University of Pittsburgh
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EXPERIENCE

Dr. Bursic has had a successful academic career in Industrial Engineering that includes administration, teaching, and research. Her career has also included industry experience in quality and operations management consulting, production management and industrial engineering. She has developed outstanding business, communication, and interpersonal skills through considerable educational, consulting, service, and production plant experience.

CAREER DEVELOPMENT

University of Pittsburgh
Department of Industrial Engineering

Associate Professor (August 2015 – Present); **Undergraduate Program Director** (July, 2007 – Present)
Assistant Professor (September, 2008 – August 2015); **Adjunct Professor** (August, 1994 – August, 2008)

- Responsible for undergraduate curriculum development and student services for the Industrial Engineering program as a non-tenure stream faculty member.
- Teaching courses in engineering computing, engineering economics, probability and statistics, and engineering and project management at the undergraduate and graduate level.

University of Pittsburgh
Freshman Engineering Program

Interim Director, Freshman Program
July, 2005 – August 2005

- Responsible for directing all administrative activities related to the Freshman Engineering Program during short vacancy in position left by unexpected staff departure.

University of Pittsburgh
Department of Industrial Engineering

Research Assistant Professor
August, 1994 - May, 1997

- Conducted research on Engineering Education.
- Activities included designing and conducting experiments, managing student assistants, publication of research results, etc.

The Pennsylvania State University
New Kensington and Monroeville Campuses

Lecturer
January, 1994 - August, 1995

- Taught “Introductory Statistics” to undergraduate students.

University of Pittsburgh
Katz Graduate School of Business

Lecturer
January, 1992 - August, 1992

- Taught “Behavioral Science in Business” in the part-time MBA program.

Bursic Consulting

Consultant
August, 1991 - August, 1994

- Served various clients as an independent consultant in quality and productivity.
- Activities included developing and teaching seminars, researching, and writing.
- Taught seminars for the American Society for Quality Control and other clients including a refresher course for the Certified Quality Technicians (CQT) exam.

Ernst and Young
Management Consulting

Senior Consultant
January, 1990 - July, 1991

- Assigned to the corporate services area which provided professional consulting services to various clients.
- Consulting areas included operations and productivity improvement, total quality management (including training), employee involvement, and so forth.
- Responsible for developing a quality and operations services market in the Pittsburgh area.

University of Pittsburgh
Industrial Engineering Department

Research/Teaching Assistant
September, 1987 - December, 1989

- Obtained a Doctorate in Industrial Engineering as a full-time student and research/teaching assistant.

General Motors Corporation
BOC - Pittsburgh Plant

Supervisor; Industrial Engineer
June, 1984 - August, 1987

- Directed and supervised operations, quality and maintenance activities on the production floor. Monitored and controlled assigned production area.
- Coordinated methods improvements and conducted time studies, calculated operational cycle times and established production standards. Plant coordinator for ergonomics, established and chaired an ergonomics committee.

EDUCATION

University of Pittsburgh

Doctorate of Philosophy, Industrial Engineering, April 1990;
Master of Science, Engineering Management, December 1987;
Bachelor of Science, Industrial Engineering, April 1984.

DISSERTATION RESEARCH

Title of Dissertation: "Factors Contributing to the Successful Use of Teams (And Benefits Gained From Their Use) in Manufacturing Organizations"; Committee Chair: Dr. David I. Cleland

HONORS AND PROFESSIONAL SERVICE

Served on 3 National Science Foundation Proposal Review Panels since 2004

Best Paper Award, ASEE Annual Conference; Engineering Economy Division; June 2017

Institute of Industrial and Systems Engineers, Engineering Economy Division Outstanding Teaching Award, 2015

University of Pittsburgh Swanson School of Engineering Outstanding Educator Award, 2014

Registered Professional Engineer (Pennsylvania), 1995-Present

Albert G. Holzman Scholarship for Excellence, 1988

Gilbreth Memorial Fellowship, 1988

Senior Member of the Institute of Industrial and Systems Engineers, Annual Conference Host Committee 2017; Scholarship Fund Trustee Board Member (National) 2014-2018; Board of Directors, Pittsburgh Chapter 2005-2007, Programs Committee Chair Pittsburgh Chapter 2004; Academic Affairs Chair Pittsburgh Chapter 2007-present

Member of the American Society for Engineering Education, Engineering Economy Division 2014-2016 Division Chair, 2013-2014 Program Chair, 2012-2013 Secretary/Treasurer; 2011-2012 Newsletter Editor

ASQ Certified Quality Engineer

Member of Tau Beta Pi - Engineering Honor Society;

Member of Alpha Pi Mu - Industrial Engineering Honor Society.

PUBLICATIONS

“Motivation and Analytics: Comparing Business and Engineering Students,” with Natalie M. Scala, Stella Tomasi, and Andrea Goncher, *INFORMS Transaction on Education*, Articles in Advance, published online November 9, 2017. <https://doi.org/10.1287/ited.2017.0187>.

“Work in Progress – An Engineering Economy Concept Inventory”. *2017 ASEE Annual Conference & Exposition*, Columbus, Ohio, June 2017. <https://peer.asee.org/29138>

“Flipping Engineering Courses: A School Wide Initiative,” with Renee M. Clark, Mary Besterfield-Sacre, Daniel Budny, William W. Clark, Bryan A. Norman, Robert S. Parker, John F. Patzer II, and William S. Slaughter, *Advances in Engineering Education*, Vol. 5 Issue 3, 2016.

“Developing Essential Business and Engineering Skills through Case Competitions,” with Paul C. Lynch and James F. Kimple, *Proceedings of the 2016 American Society for Engineering Education Annual Conference*, New Orleans, LA

“An Approach to Evaluate Engineering Global Preparedness in Industrial Engineering Curricula,” with Scott Steiner, Mary Besterfield-Sacre, and Larry Shuman, *Proceedings of the 2014 Industrial Engineering Research Conference*. Montreal, QC.

“Preliminary Experiences with ‘Flipping’ a Freshman Engineering Program Course,” with Renee Clark, Mary Besterfield-Sacre, and Dan Budny, 6th First Year Engineering Experience (FYEE) Conference, College Station TX, 2014.

“Does the Use of Clickers Increase Conceptual Understanding in the Engineering Economy Classroom,” *Proceedings of the 2012 American Society for Engineering Education Annual Conference*, San Antonio Texas.

“CCLI: Model Eliciting Activities: Experiments and Mixed Methods to Assess Student Learning III,” with Larry Shuman, Mary Besterfield-Sacre, Natasa Vidic, and Nora Siewiorek, *Proceedings of the 2012 American Society for Engineering Education Annual Conference*, San Antonio Texas.

“Students’ Confidence Levels in Technical Concept Knowledge with Model-Eliciting Activities,” with Nora Siewiorek, Larry Shuman, Mary Besterfield-Sacre, Natasa Vidic, Scott Streiner, and Jeffrey Coull, *Proceedings of the 2012 American Society for Engineering Education Annual Conference*, San Antonio Texas.

“Improving Student Attainment of ABET Outcomes Using Model-Eliciting Activities (MEAs),” with Larry Shuman and Mary Besterfield-Sacre, *Proceedings of the 2011 American Society for Engineering Education Annual Conference* Vancouver, BC.

“CCLI: Model Eliciting Activities: Experiments and Mixed Methods to Assess Student Learning – Part II,” with Larry Shuman, Mary Besterfield-Sacre, Natasa Vidic, and Pinar Yildirim, *Proceedings of the 2011 American Society for Engineering Education Annual Conference*. Vancouver, BC.

“Learning Impacts Gained from Introducing Model Eliciting Activities (MEAs) in an Introductory Statistics Course,” with Natasa Vidic, Larry Shuman, Mary Besterfield-Sacre, Tuba Pinar Yildirim, and Nora Siewiorek, *Proceedings of the 2011 Industrial Engineering Research Conference*. Reno, NV.

“Improving Conceptual Learning in Engineering Economy using Model-Eliciting Activities (MEAs)” with Larry Shuman, Mary Besterfield-Sacre, Tuba Pinar Yildirim, and Nora Siewiorek, *Proceedings of the 2010 Industrial Engineering Research Conference*. Cancun, Mexico.

“Reviewing the Success of a Freshman Programming Course,” with Dan Budny, Laura Lund, and Natasa Vidic, 2010 *ASEE North Central Section Regional Conference Proceedings*.

“E-MEAs: Introducing an Ethical Component to Model Eliciting Activities,” with Larry Shuman, Mary Besterfield-Sacre, Renee Clark, Pinar Yildirim *Proceedings of the 2009 American Society for Engineering Education Annual Conference and Exposition*, Austin, TX.

“Implementing International Requirements in Undergraduate Industrial Engineering Programs,” with Kim LaScola Needy, *2008 American Society for Engineering Education Annual Conference Proceedings*.

“The Challenges of Undergraduate Industrial Engineering Curriculum Reform at the University of Pittsburgh ,” with Kim LaScola Needy, Bryan A. Norman, Mary Besterfield-Sacre and Brady Hunsaker, *2007 Industrial Engineering Research Conference Proceedings*.

Review of “Engineering Economy”, 13th edition, by Sullivan, et. al., *The Engineering Economist*, 2006.

“Applying Engineering Economic Analysis to Contemporary Problems with Global and Societal Implications,” *2006 American Society for Engineering Education Annual Conference Proceedings*.

“Self-Managed Production Teams,” chapter in *Field Guide to Project Management*, 2nd edition, John Wiley & sons 2004.

“Integrating Engineering Economic Analysis Across the Engineering Curriculum,” with Kim L. Needy and James P. Wilson, *2003 American Society for Engineering Education Annual Conference Proceedings*.

“A Comparison of Freshmen and Senior Engineering Design Processes,” with Cynthia J. Atman, Justin R. Chimka, and Heather N. Umphred, *Design Studies*, 1999.

Co-Editor of *Project Management Casebook and Instructor's Manual* with David I. Cleland, Richard Puerzer, and A. Yaroslav Vlasak, Project Management Institute, 1998.

"Verbal Protocol Analysis as a Method to Document Engineering Student Design Processes," with Cynthia J. Atman, *Journal of Engineering Education*, 1998.

"Information Gathering: A Critical Step for Quality in the Design Process," with Cynthia J. Atman, *Quality Management Journal*, 1997.

"Describing Student Design Behavior," with Justin R. Chimka and Cynthia J. Atman, *Annual Conference Proceedings of the American Society for Engineering Education*, 1997.

"Teaching Engineering Design: Can Reading a Textbook Make a Difference," with Cynthia J. Atman, *Research in Engineering Design*, 1996.

"An Application of Protocol Analysis to the Engineering Design Process," with Cynthia J. Atman and Stefanie L. Lozito, *Annual Conference Proceedings of the American Society for Engineering Education*, 1996.

"Do Freshmen Design Texts Adequately Define the Engineering Design Process?" with Moore, Atman, Shuman, and Gottfried, *Annual Conference Proceedings of the American Society for Engineering Education*, 1995.

"Gathering Information: What Do Students Do?" with Atman and Lozito, *Annual Conference Proceedings of the American Society for Engineering Education*, 1995.

Co-Editor of *Project Management Casebook* and Co-Author of *Instructor's Guidelines* for classroom discussion published by the Project Management Institute, 1993.

"Strategies and Benefits of the Successful Use of Teams in Manufacturing Organizations," in *IEEE Transactions on Engineering Management*, August, 1992.

Strategic Technology Management: Systems for Products and Processes with David I. Cleland, American Management Association, 1992.

"Strategic Technology Management," with David I. Cleland in *Engineering Management Journal*, June, 1991.

"The Use of Teams for Improving Productivity and Quality in Manufacturing," in *Productivity & Quality Management Frontiers III*, Proceedings of the Third International Conference on Productivity and Quality Research, 1991.

"A Strategic Technology Management System," with David I. Cleland and Hay Wun Wain, in *Management of Technology II*, Proceedings of the Second International Conference on Management of Technology, 1990.

"Production Teams in Manufacturing," chapter in *The Automated Factory Handbook*, TAB Books, 1990.