

## John W. Sutherland, Ph.D.

Richard and Elizabeth Henes Chair Professor of Mechanical Engineering  
Director, Sustainable Futures Institute

### Personal Data

#### Address

Office: Dept. of Mechanical Engineering - Engineering Mechanics  
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Houghton, MI 49931  
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### Education

1980 B.S. in Industrial Engineering, University of Illinois at Urbana-Champaign (UIUC)  
1982 M.S. in Industrial Engineering, UIUC  
1987 Ph.D. in Mechanical Engineering, UIUC, advisor: R. E. DeVor

### Experience

2007-Present Director, Sustainable Futures Institute (SFI), Michigan Technological University  
SFI was established in 2003 to promote and facilitate activities related to sustainability on outreach. With respect to education, SFI has established courses in support of sustainability and created a Graduate Certificate to recognize breadth in interdisciplinary coursework focused on sustainability. Research initiatives of SFI include those within the Institute as well as projects being undertaken by entities chartered as part of SFI: Center for Water and Society, Center for Environmentally Benign Functional Materials, Wood-to-Wheels, and Center for Nanostructured and Light Weight Materials. Five professional/clerical staff coordinate SFI operations. Research expenditures associated with SFI in 2006-07 were in excess of \$4 million.

2004-Present Adjunct Professor, Southern University-Baton Rouge (SUBR)

2003-2007 Co-Director, Sustainable Futures Institute, Michigan Technological University

2002-Present Richard and Elizabeth Henes Chair Professor of Mechanical Engineering, Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University  
The Henes Chair Professorship was one of the first endowed Chairs at the University and Dr. Sutherland was selected as its inaugural holder. The Henes Chair is expected to provide leadership in terms of research and scholarship, with particular emphasis on topics related to quality engineering and environmentally responsible design and manufacturing.

1997 - 2001 Associate Chair - Director of Graduate Studies, Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University  
The Director of Graduate Studies oversees all aspects of the graduate program for the Dept. of ME-EM (graduate student recruitment, admission, curriculum development, doctoral examinations, thesis/dissertation defenses, etc.). As the Director of Graduate Studies, Dr. Sutherland helped to expand the size of the graduate program by ~50%.

1997 - Present Professor, Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University

1995 - 1997 Associate Professor, Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University

1991 - 1995 Assistant Professor, Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University

1989 - 1991 Vice-President, Process Design and Control, Inc., Champaign, IL

	Responsibilities: program/personnel management, project engineering, software development and marketing, teaching short courses.
1989 - 1991	Adjunct Assistant Professor, Dept. of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign
1985 - 1989	Visiting Instructor & Visiting Assistant Professor, Dept. of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign
1980 - 1985	Graduate Research/Teaching Assistant, Dept. of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign

### **Teaching/Research Interests**

Design and manufacturing for sustainability, manufacturing processes and systems, and statistical methods for quality and productivity design and improvement.

### **Honors**

- SME Education Award, 2009.
- Elected to Grade of Fellow, American Society of Mechanical Engineers (ASME), 2006.
- Elected to Grade of Fellow, Society of Manufacturing Engineers (SME), 2005.
- Recipient of ASME Manufacturing Engineering Division Outstanding Service Award, 2001, 2004.
- Recipient of 1999 SAE Ralph R. Teeter Educational Award.
- Recipient of Presidential Early Career Award for Scientists and Engineers, 1996.
- Recipient of National Science Foundation Career Development Award, 1995.
- Recipient of the 1992 Outstanding Young Manufacturing Engineer Award (SME)

### **Other Professional Recognitions**

- Finalist, Best Paper Award, "Development of a Magnetostrictive-Actuated Tool Holder for Dry Deep Hole Drilling," NAMRC 2005, authored by A. J. Filipovic and J. W. Sutherland.
- Best Paper of Conference Award, "A Proposed LCA Model of Environmental Effects with Markovian Decision Making," SAE 1997 Total Life Cycle Conference - Life Cycle Management and Assessment, Soc. of Automotive Engrs., Technical Paper No. 971174, authored by D. Milacic, H. A. Gowaikar, W. W. Olson, and J. W. Sutherland.

### **Campus Honors**

- Recipient of the Michigan Technological University Research Award, 2000.
- Finalist, Graduate Faculty Mentoring Award at Michigan Technological University, 2005-06 academic year.
- Finalist, Michigan Technological University Distinguished Teaching Award, 2004.
- Inducted into the Academy of Teaching Excellence, Michigan Technological University, 1998.
- Selected as the Teacher of the Year for the Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University, 1993-94.
- Selected as the Teacher of the Year for the Dept. of Mechanical Engineering - Engineering Mechanics, Michigan Technological University, 1992-93.
- Honored by the Michigan Association of Governing Boards of State Universities as a Distinguished Faculty Member, 1993.
- Recipient of the Michigan Technological University Distinguished Teaching Award, 1992.
- Andersen Consulting Award for Excellence in Undergraduate Advising, College of Engineering, UIUC, 1989.
- Eight times named to the "List of Teachers Rated as Excellent" based on the UIUC College of Engineering's Student Evaluation Form, for ME 285, IE 335, and IE 336.
- Teaching Fellow, Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1982-83.

### **Professional and Honorary Societies**

- American Society of Mechanical Engineers (ASME), Fellow
- American Society for Quality (ASQ)

- Association for Manufacturing Technology (AMT)
- College International pour la Recherche en Productique (International Academy for Production Engineering) – (CIRP), Associate Member (elected as a Corresponding Member in 2003)
- Institute of Industrial Engineers (IIE)
- Society of Automotive Engineers (SAE)
- Society of Manufacturing Engineers (SME), Fellow
- Alpha Pi Mu, Phi Kappa Phi, Pi Tau Sigma, Sigma Xi, Tau Beta Pi

**Consulting Experience**

- Sci-Med Life Systems (1989-90)
- Hyster (1990-91)
- Central Data (1990-91)
- Pioneer Laboratories (1992-93)
- Cooper Industries (1997)
- Winsert (EMI), (2006)

## Graduate Student Advising / Mentoring

### Major Advisor -- Ph.D. Students (18 Ph.D. students)

- Erik J. Salisbury, Ph.D. in ME-EM from MTU, July 1995 (with K. S. Moon), "Interferometric Surface Texture Measurement in the Presence of Error Sources."
- Dongming Liu, Ph.D. in ME-EM from MTU, February 1998, "Vibration Abatement in a Turning Process Via Application of an Activity Controlled Tool Holder."
- Steve Batzer, Ph.D. in ME-EM from MTU, April 1998, "An Analytical and Experimental Investigation into Chip Morphology in Orthogonal Machining."
- Cecil Daniel, Ph.D. in ME-EM from MTU, April 1998, "Analysis and Modeling of Angular Errors in Precision Sliding Motion with Application to Machine Tools."
- Yuliu Zheng, Ph.D. in ME-EM from MTU, April 1998, "A Continuum Mechanics Model for Orthogonal Cutting."
- Tengyun Cao, Ph.D. in ME-EM from MTU, August 1998, "Modeling of the Thread Tapping Process: Chip Formation and Cutting Fluid Lubrication."
- Santosh Ranganath, Ph.D. in ME-EM from MTU, January 1999, "A Comprehensive Model for the Dynamic Force System in Peripheral Milling Including the Effects of Flank Face Interference."
- Yan Yue, Ph.D. in ME-EM from MTU, February 2000, "A Comprehensive Model for Cutting Fluid Mist Formation in Machining."
- Aleksandar Filipovic, Ph.D. in ME-EM from MTU, August 2002, "Magnetostrictive Actuators to Achieve Dry Deep Hole Drilling of Aluminum."
- Huanran Xue, Ph.D. in ME-EM from MTU, April 2003, "Application of Input-Output Modeling to the Environmental Characterization and Improvement of Manufacturing Processes."
- Ge Shen, Ph.D. in ME-EM from MTU, May 2003, "Modeling the Effect of Cutting Fluids in Peripheral Milling."
- Kenneth Gunter, Ph.D. in ME-EM from MTU, April 2004, "Inventory and Value Management in Demanufacturing Facilities."
- Jichao Sun, Ph.D. in ME-EM from MTU, April 2004, (with D. J. Michalek), "Cutting Fluid Mist Formation and Behavior Mechanisms."
- Jun Huang, Ph.D. in ME-EM from MTU, April 2005, (with E. C. Aifantis), "Adiabatic Shear Banding and Shear Localized Chip Formation."
- Chuanxi Ju, Ph.D. in ME-EM from MTU, 2005, "Development of Particulate Imaging Systems and Their Application in the Study of Cutting Fluid Mist Formation and Minimum Quantity Lubrication in Machining."
- Xuefei Hu, Ph.D. in ME-EM from MTU, January 2006, "An Experimental and Analytical Study of the Effect of Material Microstructures on the Machinability of Al-Si Alloys."
- Vishesh Kumar, Ph.D. in ME-EM from MTU, December 2006, "A Material Flow and Economic Exchange Model to Characterize the Impact of Vehicular Changes and Policies on the Automotive Recovery Infrastructure."
- Karl R. Haapala, Ph.D. in ME-EM from MTU, 2008, "Development of Models for Environmental Performance Improvement of Steel Product Manufacturing."

### Major Advisor -- M.S. Students – Thesis Option (47 students)

- M. J. Kuhl, MSIE from UIUC, August 1987 (with R. E. DeVor), "The Prediction of Cutting Forces and Surface Accuracy for the Turning Process."
- M. S. Wagner, MSME from UIUC, January 1988 (with R. E. DeVor), "The Prediction and Effects of Flute Breakage on the End Milling Process."
- W. J. Endres, MSME from UIUC, January 1990 (with R. E. DeVor and S. G. Kapoor), "A Dynamic Model of the Cutting Force System in the Turning Process."
- D. G. Mattes, MSIE from UIUC, January 1990 (with R. E. DeVor and S. G. Kapoor), "The Development of a Power/Energy Consumption Model for Multiprocess Machining Operations."
- D. A. Gustafson, MSME from UIUC, May 1990 (with R. E. DeVor and S. G. Kapoor), "The Effect of Tool Geometry and Tool Wear on the Cutting Force System in Turning."

- D. J. O'Brien, MSIE from UIUC, October 1990 (with S. G. Kapoor), "A Force-Based Flute Breakage Detection Algorithm for a Peripheral End Milling Process."
- Tim Sturos, MSME from MTU, August 1994, "An Investigation of an Active Tool Holder Employing Magnetostrictive Actuation with Application to a Turning Process."
- Srikanth Vadrevu, MSME from MTU, October 1994 (with W. W. Olson), "Product Value Modeling of Time Varying Quality Measures."
- Sreeram Parameswaran, MSME from MTU, November 1994, "Robust Design of an Automotive Suspension System."
- Kristin Philipps, MSME from MTU, April 1995 (with W. W. Olson), "An Investigation on the Shearing of Automotive Grade Polypropylene and Acrylonitrile-Butadiene-Styrene to Facilitate Automotive Recycling."
- Doug Cozzens, MSME from MTU, July 1995 (with W. W. Olson), "A Study of Cutting Fluids and Workpiece Surface Error in the Boring of Cast Aluminum Alloys."
- K. V. Domala, MSME from MTU, September 1995 (with K. S. Moon), "Geometric Modelling of Wheel and Workpiece Surfaces in Grinding."
- Charles Whitmer, MSME from MTU, September 1995 (with W. W. Olson), "Multicriteria Optimization of Environmentally Conscious Mechanical Design Decisions."
- Chris Wentland, MSME from MTU, March 1996 (with W. W. Olson), "Environmental Design Decisions for Discrete Product Parts Based on Geometric Attributes."
- William Kanizar, MSME from MTU, May 1996 (with K. S. Moon), "Micropositioning in the Turning Process Via Magnetostrictive Actuation."
- Deborah Haan, MSME from MTU, October 1996 (with W. W. Olson), "Force Prediction in Drilling Incorporating an Asperity Interface Model."
- Kannan Narayanan, MSME from MTU, October 1996, "A Dynamic Model of the Cutting Force System in End Milling Including the Effects of Process Damping."
- Hong Li, MSME from MTU, May 1997 (with W. W. Olson), "Prediction of Cylinder Boring Surface Errors With and Without Cutting Fluids."
- Vivek Saxena, MSME from MTU, May 1997, "A Study of Structural Characteristics of a Stewart Platform Based Machine Tool."
- Hrishikesh Gowaikar, MSME from MTU, July 1997 (with W. W. Olson), "Characterization of the Dynamic Behavior of a Cutting Fluid System."
- Praveen D. Rao, MSME from MTU, August 1997 (with W. W. Olson), "Prediction of Chip Morphology in Orthogonal Machining Processes."
- Amy Wheaton Bergstrom, MSME from MTU, November 1997 (with W. W. Olson), "Reducing the Environmental Impact of the Drilling Process."
- Nilesh Soni, MSME from MTU, December 1997 (with W. W. Olson), "Application of Goal Programming to Reduce the Environmental Impact of Machining Processes."
- Ching Hung, MSME from MTU, June 1998, "Experimental Investigation of Vibration and Damping of Machine Tool Slideways."
- Aleksandar Filipovic, MSME from MTU, August 1998, "Cutting Fluid System Dynamics: Modeling and Control."
- Kenneth Gunter, MSME from MTU, May 1999, "An Experimental Investigation of Cutting Fluid Mist Formation via Atomization in the Turning Process."
- Ashish Gandhi, MSME from MTU, September 1999, "Role of Cutting Fluids in Workpiece Temperature and Surface Error in Peripheral Milling."
- Yeow Siow, MSME from MTU, January 2000 (with S. L. Yang), "A CFD Investigation of Cutting Fluid Mist Formation via Atomization."
- Abhilesh Bhargava, MSME from MTU, February 2000, "A VRML Based Feature Representation and Recognition Technique with Application to Machining Processes."
- Wai Kei Chan, MSME from MTU, December 2000, "Characterization of the Welding Fume Behavior in Shielded Metal Arc Welding (SMAW)."
- Nathan King, MSME from MTU, December 2000, "A Comparison of Economic and Air Quality Issues in Wet vs. Dry Turning."

- Steve Behm, MSME from MTU, February 2001, "An Investigation into the Effect of Processing Conditions on Airborne Emissions from the Lost Foam Casting Process."
- Anup Bandivadekar, MSME from MTU, January 2002, "Development of a Model for Material Flows and Economic Exchanges within the U.S. Automotive Life Cycle Chain."
- Gordon Bekkala, MSME from MTU, January 2002, "Assessing the Environmental Impact of Product Design Decisions Across the Life Cycle."
- Sarang Garud, MSME from MTU, January 2002 (with C. R. Vilmann), "An Analysis of Workpiece Thermostructural Distortions in Peripheral Milling by Finite Element Method."
- Lucas Keranen, MSME from MTU, January 2002, "A Model for Multi-stage Machining Economics Including Cutting Fluid Related Costs."
- Kyriaki Kalaitzidou, MSME from MTU, March 2002 (with E. Aifantis), "Gradient Theory: Application on Dislocation Dynamics and Adiabatic Shear Bands Formed in Metal Cutting."
- Ram Kuchibhotla, MSME from MTU, May 2002, "An Investigation Into the Effects of Lubrication, Surface Finish, and Clearance on Machine Tool Slideway Damping and Friction."
- David Pariseau, MSME from MTU, August 2002 (with D. J. Michalek) (Ford/MTU M.S. Program), "Development of a Computational Fluid Dynamics Model for Assessment of Lubricant Performance in a Manual Transmission Gear Mesh."
- Eric Barrett, MSME from MTU, September 2002 (Ford/MTU M.S. Program), "A Comparison of Electric Power Assist Steering with Hydraulic Power Assist Steering for Automotive Applications."
- Siddhartha Kinare, MSME from MTU, October 2002 (with D. J. Michalek), "An Experimental Investigation of Cutting Fluid Mist Removal by an Atomizer System."
- Kiran Khadke, MSME from MTU, January 2003, "An Energy Model for Discrete Product Manufacturing."
- Karl Haapala, MSME from MTU, August 2003, "A Model for Predicting Manufacturing Waste in Product Design and Process Planning."
- Jaime Krull, MSME from MTU, 2004 (with W. J. Endres & J. K. Gershenson), "A Method to Identify Promising Materials - An Enabling Technology for Sustainable Development."
- Lisa Kukula, MSME from MTU, May 2004 (with D. J. Michalek), "An Experimental Investigation of Metal Working Fluid Mist Formation During the Wet Turning Process and Mist Reduction Using a Kinematic Coagulation System."
- Prasad Shirodkar, MSME from MTU, September 2006, "Characterization of Value Flow During The Product Life Cycle."
- Daniel P. Adler, MSME from MTU, May 2007, "Comparing Energy and Other Measures of Environmental Performance in the Manufacturing and Remanufacturing of Engine Components."
- David Pauken, MSME from MTU, May 2009, "Statistical Modeling of the Ford Superduty Brake Pedal Feel Attribute."
- Cheryl Williams, MSME from MTU, May 2009, " Optimization of Conversion of North American Left Hand Drive Vehicles for Importation into Right Hand Drive Markets."

**Advisor -- M.S. Students – Coursework Option (7 students)**

- Doug Trudeau, MSME from MTU, May 1993, coursework option.
- Jeffrey P. Webb, MSME from MTU, August 1993, coursework option.
- Abigail R. Clarke, MSME from MTU, 2006, coursework option.
- Margot J. Hutchins, MSME from MTU, August 2007, coursework option.
- Julio L. Rivera, MSME from MTU, August 2008, coursework option.
- Kari L. Brown, MSME from MTU, December 2008, coursework option.
- Mohit Law, MSME from MTU, December 2008, coursework option.

**Postdoctoral Advisees**

- Soumitra Basu
- Jianfeng Li
- Serdar Tumkor
- Vishesh Kumar
- Karl Haapala

**M.S. Graduate Students Currently Being Advised**

- Erin Bates, MSME from MTU (Ford/MTU M.S. Program).

**Ph.D. Graduate Students Currently Being Advised**

- Abigail Clarke, Ph.D. in ME-EM from MTU (with Q. Zhang).
- Dan Bee, Ph.D. in ME-EM from MTU.
- Christina Herrman, Ph.D. in ME-EM from MTU.
- Margot Hutchins, Ph.D. in ME-EM from MTU.
- Tim Jenkins, Ph.D. in ME-EM from MTU.
- Julio Rivera, Ph.D. in ME-EM from MTU (with D. J. Michalek).
- Fengli Zhang, Ph.D. in ME-EM from MTU.

**Thesis / Dissertation Committee Service**

- Richard J. Matulis, Ph.D. in Animal Science from UIUC, October 1991, "The Development of Low-fat / Low-salt Frankfurters," F. K. McKeith – advisor.
- William J. Endres, Ph.D. in Mechanical Engineering from UIUC, 1992, "A Dual Mechanism Approach to the Prediction of Machining Forces for Metal-Cutting Processes," R. E. DeVor and S. G. Kapoor - advisors.
- Steve K. Kernosky, MSME from MTU, 1992, "An Experimental Characterization of the Formability of Mild Steel Coated with Aluminum by a Physical Vapor Deposition Technique and the Determination of the Integrity of the Coating," K. J. Weinmann - advisor.
- Greg Leece, MSME from MTU, 1993, "The Effects of Cycling Frequency and Temperature on the Mechanical Fatigue Life of 60 Tin / 40 Lead Solder," I. Miskioglu and D. Nelson - advisors.
- Jukka P. Runola, MSME from MTU, 1993 "The Effect of Tool Wear on a Turned Surface Profile," K. S. Moon - advisor.
- Hans G. M. Vlieger, MSME from MTU, 1993 "Development of Methods Towards the Effective Automated Disassembly of Electronic Equipment," K. J. Weinmann - advisor.
- Ghanashyam A. Joshi, Ph.D. in ME-EM from MTU, 1993 "Holistic Image Processing Via DDS," S. M. Pandit - advisor.
- Kevin Christenson, MSOM from MTU, 1993 "A Simulation Generator for Just-In-Time Manufacturing Systems," C. Dogan - advisor.
- Parag Lalsare, MSOM from MTU, 1993 "Evaluating Backward Scheduling and Sequencing Rules for Assembly Shop Environment," M. Keaton - advisor.
- Shreyes N. Melkote, Ph.D. in ME-EM from MTU, 1993 "The Modeling of the Surface Texture in the End Milling Process," A. R. Thangaraj - advisor.
- Sundeep Kankanala, MSME from MTU, 1993 "A Model of the Plasma Spraying Process," A. R. Kashani - advisor.
- Paula Feira Zenner, MSOM from MTU, 1993 "Enrollment Management: A Case Study of the Mechanical Engineering - Engineering Mechanics Department at Michigan Technological University," P. Nelson - advisor.
- Shyam V. Narayan, MSME from MTU, 1993 "Object Oriented Approach to Feature Representation and Recognition: A Framework for Automated Manufacturing," Z. K. Ling - advisor.
- Amit Makhecha, MSME from MTU, 1993 "A Mechanistic Model for the Prediction of Drilling Thrust and Torque Through Non-Linear Optimization," A. R. Thangaraj - advisor.
- Richard Meldrum, MSOM from MTU, 1994 "An Integrated-View and Analysis of a Company's Product Design Process," B. Rahali - advisor.
- Dolores C. Oreskovich, Ph.D. in Foods and Nutrition from UIUC, 1994 "The Assessment of the Composition and Sensory Properties of Cooked Pork," B. P. Klein - advisor.
- S. Hande, MSME from MTU, 1994 "Isothermal Fatigue Behavior of a Eutectic Solder," I. Miskioglu and D. A. Nelson - advisors.
- Mustafa U. Unuvar, Ph.D. in ME-EM from MTU, 1994 "A Process Development Methodology: An Expert System Coupled to a Mathematical Model for Slip Casting Development," J. Lowther and S. M. Pandit - advisors.
- Lars Olson, MSOM from MTU, 1994 "Cost Management in a Just-In-Time Environment," C. Dogan - advisor.

- Anu K. P. Puukko, MSOM from MTU, 1994 "Applying Activity-Based Costing at a Printed Circuit Board Manufacturing Company: A Case Study," B. Rahali - advisor.
- Debabrata Paul, Ph.D. in ME-EM from MTU, 1995 "Condition Monitoring and Defect Diagnosis in Manufacturing Processes using DDS and Wavelets," S. M. Pandit - advisor.
- Gokce Bezmez, MSOM from MTU, 1995 "A Simulation Metamodeling Approach to Kanban-Controlled Manufacturing Systems," C. Dogan & H. Aytug - advisors.
- Qiong Sun, MSME from MTU, 1995 "Extending SADT Methodology for Modeling Manufacturing Systems by Applying Modern Control Mathematics," W. Olson - advisor.
- Salvatore N. Grupido, MSME from MTU, 1995 "Characterization of the Transient Behavior of a Die Shoulder Sensor," K. Weinmann - advisor.
- Pasi J. Koski, MSOM from MTU, 1995 "Developing Activity-Based Costing Software and Applying Activity-Based Costing Information in a Printed Circuit Board Manufacturing Company: A Case Study," C. Dogan - advisor.
- Bagus Prihastono, MSEE from MTU, 1995 "Nonlinear Model Reference Adaptive Control of Longitudinal Vehicle Dynamics," C. Yang - advisor.
- Katri H. Karhinen, MSOM from MTU, 1996 "A Case Study: Accounting Processes for Governmental Grants in the City of Houghton, Michigan," R. Michael - advisor.
- Ashar A. Pasha, MSOM from MTU, 1996 "Simulation Analysis of Decision Rules in a Kanban-Controlled Assembly System," C. Dogan & H. Aytug - advisors.
- H. Iyer, MSOM from MTU, 1996 "Environmental Impact and Cost Analysis of Waste Streams Generated in Machining Operations," A. Jambekar - advisor.
- G. R. Shaik, MS Metallurgical & Materials Engr. from MTU, 1996 "Consolidation of Nanostructured Metal Powders by Rapid Forging: Processing, Modeling, and Subsequent Mechanical Behavior," W. Milligan - advisor.
- Raymond Guo, Ph.D. in ME-EM from MTU, 1996 "Image Segmentation and Shape Recognition by Data Dependent Systems," S. M. Pandit - advisor.
- Atul Godbole, MSME from MTU, 1996 "Feasibility of Rough Surface Interferometry Using a He-Ne Laser Source," S. M. Pandit - advisor.
- Dean Stetson, MSOM from MTU, 1996 "A Graphical User Interface for Creating an Object-Oriented Database Representing a Generic Simulation Model," C. Dogan - advisor.
- Allen R. Sorgenfrei, Ph.D. in ME-EM from MTU, 1997 "Finite Element Modeling of Fine Blanking; Towards Supervisory Control of the Production Process," K.J. Weinmann - advisor.
- Aaron Hastings, MSME from MTU, 1997 "Modulation Based Metrics in Sound Quality with Application to Power Seat Adjusters," M. D. Rao - advisor.
- James Bowen, MSME from MTU, 1997 "Development of Fastening Systems to Endure Peel Loading for Thermoplastic Composite to Steel Joints," J. B. Ligon & I. Miskioglu - advisors.
- Yiding Wang, Ph.D. in ME-EM from MTU, 1998 "Modeling and Measurement for the Assessment of Surface Grinding with Vibratory Modulation," K. S. Moon - advisor.
- Andrew Fisher, MS Metallurgical and Materials Engineering from MTU, 1998 "Temperature and Strain Rate Sensitivity of Mechanical Behavior of a Bulk Nanostructured Metal," W.W. Milligan - advisor.
- Abishek Banka, MSME from MTU, 1998 "Dynamic Analysis and Control System Development for a Multi-stage Stewart Platform Manipulator," G. G. Parker - advisor.
- John Roth, Ph.D. in ME-EM from MTU, 1998 "Monitoring End-mill Wear and Predicting Tool Failure Using Accelerometers," S. M. Pandit - advisor.
- Xinhai Zhu, Ph.D. in ME-EM from MTU, 1999 "Theoretical Analysis of Sheet Metal Formability," S. A. Majlessi and E.C. Aifantis - advisors.
- Linhuo Shi, Ph.D. in ME-EM from MTU, 1999 "Modeling of Sink Mark Formation in Injection - Molded Plastic Parts by Finite Element Method," M. Gupta - advisor.
- Debabrata Sarkar, Ph.D. in ME-EM from MTU, 2000 "Elongational Viscosity Modeling and Estimation," M. Gupta - advisor.
- Marcella M. Velazquez Carrillo, M.S. in Environmental Engineering from MTU, 2000 "Selection of Manufacturing Materials based on Environmental and Safety Factors," J. Mihelcic - advisor.
- Ben Mathews, MSME from MTU, 2000 "A Computational Fluid Dynamics Model to Predict the Workpiece Temperature During Cylinder Boring," D. Michalek - advisor.



- Chin Chun Chen, MSME from MTU, 2000 "A Finite Element and Experimental Study of Sheet Deformation Characteristics of Sheet Metal Flow near the Drawbead End Vicinity."
- Heidi (Grenkowitz) McKenzie, MEng 2001 Ford Student, "Lamella Plate Pack Replacement Program," J. Gierke - advisor.
- Richard Vendlinski, MSME from MTU, 2001 "Evaluation of and Suggested Improvements for EPA's Equilibrium Partitioning Sediment Guidelines for Metals Mixtures," D. Hand - advisor.
- Prasad Patgaokar, MS Chemical Engineering from MTU, 2001 "Multi-Criteria Chemical Process Improvement," T. Rogers - advisor.
- Geoffrey J. Roelant, MS Chemical Engineering from MTU, 2001 "Development of an Energy Model for Automobile Assembly Paint Operations, Environmental and Economic Evaluation of Waste Heat Recovery Operations," D. Shonnard - advisor.
- Erik H. Weber, Ph.D. in Chemical Engineering from MTU, 2001 "Development and Modeling of Thermally Conductive Polymer/Carbon Composites," J. King - advisor.
- Sandeep Pavnaskar, MSME from MTU, 2001 "Developing a Structure Tool Set for Lean Product Developing," J. Gershenson - advisor.
- Richard T. Nesbitt, MSME from MTU, 2001 "Power Split Hybrid Electric Vehicle Controls with Data Dependant Systems Forecasting of Accessory Loads," S. Pandit - advisor.
- Wolfgang Neher, MSME from MTU, 2001 "Optimization of a Flexible Blankholder using Finite Element Analysis and its Effect on the Sheet Forming Process," K. Weinmann – advisor.
- Hong Wang, "Mechanics of Material Removal During the Formation of a Single-Grit Rotating Scratch with a Conical Tool," G. Subhash - advisor.
- Katie Torrey, MSChE from MTU, 2002 "Influence of Thermally Conductive Fillers on the Physical Properties of Waferboard," J. King - advisor.
- Steven Kubow, MSME from MTU, 2002 (with S. Pandit), "Speed Tracking and Time-Frequency Analysis of a Rotating Shaft Using Data Dependent Systems."
- Glen Lichtenberg, MSME from MTU, 2003 "Quality Improvement of a Manual Transmission Input Shaft Radial Lip Sealing System: Failure Analysis, Design and Manufacturing Assessment," L. Evers & M. Miller - advisors.
- Debrata Sarkar, Ph.D. in ME-EM from MTU, 2003 "Parameter Estimation for Elongation Viscosity of Polymer Melts," M. Gupta - advisor.
- Catherine A. Hagemeyer, MSME from MTU, 2003 "The Classification and Applications of Problem Solving Quality Tools," J. Gershenson - advisor.
- Peter Koepfgen, MSEnvE from MTU, 2003 "EcoDesign/Design for Environment: Interdivisional Consultant Engineering at LG Electronics Pyungtaek, South Korea," J. Crittenden – advisor.
- Ying Han, MS in Environmental Policy from MTU, 2003 "Factors Determining the Development and Marketing of Alternative-Fueled Vehicles in the U.S.: An Exploratory Study," B. Solomon/H. Gorman – advisors.
- Jaime A. Krull, MSME from MTU, 2004 "A Method to Identify Promising Materials - An Enabling Technology for Sustainable Development," J. Gershenson - advisor.
- Yuming Niu, Ph.D. in ME-EM from MTU, 2004 "Selection of Industrial Coating Based on Environmental Impact Characteristics," J. Gershenson - advisor.
- Mayur P. Shetty, MSME from MTU, 2004 "The Effects of Dwell on Surface Finish - An Experimental Study," W. Endres - advisor.
- Sandeep J. Pavnasker, Ph.D. in ME-EM from MTU, 2004 "A Systematic Method for Leaning Engineering Processes," J. Gershenson - advisor.
- Steven R. Case, MSME from MTU, 2004 "The Validation of a Classification Scheme for Lean Manufacturing Tools," J. Gershenson - advisor.
- Wilson Hii, Ph.D. in ME-EM from MTU, 2005 "Transient CFD Study of Machining Mist Removal Through Kinematic Coagulation," D. J. Michalek - advisor
- Daniel Leep, MSME from MTU, 2005 coursework only, J. Gershenson - advisor.
- Chris Copeland, M.S. in Chem Engr., 2005 "Dust Suppression in Iron Ore Processing Plants," K. Kawatra - advisor.
- Xiaorui Fan, Ph.D. in ME-EM, 2005 "Force Modelling for Intermittent Grinding Process," M. Miller - advisor.

- Don Wilbur, MSME in ME-EM, 2005 “Automatic Transmission, Static Engagement Design Improvements Using a Systems Engineering Design Approach,” W. Shapton – advisor.
- S. George Luckey, Jr., Ph.D. in ME-EM, 2006 "Development of Finite Element Analysis Based Tools and Methods for the Design of Advanced Superplastic Forming Dies and Processes," K. Weinmann - advisor.
- Drew Vettel, M.S. in ME-EM, 2006 "Analysis of Engineering Processes Using Lean Manufacturing Tools: A Manufacturing Equipment Design Application," J. Gershenson - advisor.
- Xiaoli Ye, Ph.D. in ME-EM, 2006, "Using Product Family Evaluation Graphs and Attribute-Based Clustering Methodolgy in Product Family Design," J. Gershenson - advisor.
- Lacey Mason, M.S. in Forestry, 2007, "GIS Modeling of Riparian Zones Utilizing Digital Elevation Models and Flood Height Data," A. Maclean - advisor.
- Chris Copeland, Ph.D. in Chem Engr., 2007 "Suppression and Dispersion of Airborne Dust and Nanoparticulates," K. Kawatra - advisor.
- Eryn (Thomas) Devola, M.S. in ME-EM, 2007 "Analysis of Warranty Claim Trends Using a Data Dependent Systems Model," S. Pandit - advisor.
- Kiran Khadke, Ph.D. in ME-EM, 2007 "Engineering Design Methodology for Planned Product Innovation," J. Gershenson - advisor.
- Thimmaiah G. Kumbera, Ph.D. in ME-EM, 2008 "A New Approach To Chip Control in Machining," W. Predebon – advisor.
- Xiaoli Ye, Ph.D. in ME-EM, 2008 "Product Family Design and Evaluation Based on the Commonality/Variety Tradeoff," J. Gershenson – advisor.
- Lee J. Wells, M.S. in ME-EM, 2008 “Enhanced Dimension-Reduction (EDR) Method For Quality And Sensitivity-Free Reliability Assessment,” J. Camelio – advisor.
- Jeremy L. Rickli, M.S. in ME-EM, 2008 “A Modified Hotelling  $T^2$  Multivariate Control Chart For Enhanced Assembly Fixture Fault Detection,” J. Camelio – advisor.
- Kang Xie, Ph.D. in ME-EM, 2008 “Analysis, Prediction and Control of Variation Propagation and Accumulation for Non-linear Sheet Metal Assembly Process,” J. Camelio – advisor.
- Helen Muga, PhD from MTU, September 2008, “An Integrated Framework for Assessing The Sustainability of Components That Make Up The Built Environment,” – A. Mukherjee/J. Mihelcic – advisors.
- Karl Walczak, PhD from MTU, December 2008, “Immobilizing Bacteriorhodopsin on a Single Electron Transistor,” C. Friedrich – advisor.

## Selected Contracts, Grants, and Gifts

- Caterpillar Excellence Fund, "Design for Manufacturing and Assembly Course and Concurrent Engr. Laboratory," 1993-94, with Olson, gifts totaling \$18,000.
- State of Michigan Research Excellence Fund, "Development of a Magnetostriction Based Actuation System for the Turning Process," 1993-94, PIs: Sutherland and Moon, \$37,734.
- State of Michigan Research Excellence Fund, "A Research Program to Recycle, Remanufacture and Demanufacture Michigan Commercial Products," 1993-96, PIs: Sutherland and Olson, \$184,011 (93-94: \$67,210; 94-95: \$61,801; 95-96: \$55,000).
- General Motors, "The Development of Graduate Courses to Support GM North American Operations Technical Strategy to Achieve Energy and Environmental Leadership," 1994-95, PIs: Sutherland, Olson, Hutzler, and Rundman, \$50,000.
- PCB, Inc., "Equipment in Support of Active Control of Machining Project," 1995, PIs: Sutherland and Moon, gift of \$5,000 in equipment.
- U.S. Army Construction Engineering Research Laboratory, "Assessment of Quality of Jet Fuel Piping System at Ellsworth AFB," 1995, \$4,544.
- Center for Clean Industrial and Treatment Technologies (CenCITT), "Environmentally Conscious Design for Construction," 1995-96, PIs: Patty, Sutherland, Baillod, \$79,523.
- State of Michigan Research Excellence Fund, "Micro-Actuation in Precision Grinding of Ceramics," 1995-96, PIs: Miller, Moon, and Sutherland, \$35,917.
- SME Education Foundation, "Gifts of cash, software, etc.," 1994-99, PIs: Sutherland, Moon, Miller, Gupta, Olson, Majlessi, Parker, Schultze, Weinmann, and Thangaraj, \$813,388 (94-95: \$182,766; 95-96: \$414,538; 96-97: \$19,900; 97-98: \$142,184; 98-99: \$54,000).
- Center for Clean Industrial and Treatment Technologies (CenCITT), "Environmentally Conscious Design and Manufacturing," 1994-97, PIs: Sutherland and Olson, \$101,304 (94-95: \$35,574; 95-96: \$30,000; 96-97: \$35,730).
- National Science Foundation, "Faculty Early Career Development: Environmentally Conscious Machine Tool Systems," 1995-97, \$100,000 (\$50,000/yr).
- Ford Motor Company, "The Use of Cutting Fluids in Machining Aluminum," 1994-97, PIs: Sutherland and Olson, \$261,300 (94-95: \$76,300; 95-96: \$95,000; 96-97: \$90,000).
- NSF/ARPA - Machine-Tool / Agile Manufacturing Research Institute (MT-AMRI), 1994-99, DeVor-UIUC, Sutherland: PI from MTU, \$5,000,000, MTU share: \$455,000 (94-95: \$120,000; 95-96: \$100,000; 96-97: \$95,000; 97-98: \$85,000; 98-99: \$55,000).
- NSF-EPA, "Environmentally Conscious Design and Manufacturing with Input/Output Analysis and Markovian Decision Making," 1996-99, PIs: Olson, Pandit, and Sutherland, \$365,797.
- UM ERC for RMS - NSF, "On-Line Machine Tool Monitoring via Fiber Optic Interferometric Sensing," 1997, PIs: Sutherland and Chandra, \$61,000 (97: \$21,000; 97-98: \$40,000).
- National Science Foundation, "Presidential Early Career Award for Scientists and Engineers," 1997-2000, \$300,000 (97-98: \$100,000; 98-99: \$100,000/yr; 99-00: \$100,000).
- National Science Foundation, "REU Supplement - Measurement of Cutting Fluid Properties," 1997-2000, \$30,000 (97-98: \$10,000; 98-99: \$10,000; 99-00: \$10,000).
- Ford Motor Company, "Advising Support for Michael Mikula -- the Impact of Material Microstructure on Machinability," 1997-2000, \$75,000.
- Ford Motor Company, "Global Master of Mechanical Engineering Degree Program in ME-EM Department," 1997, PIs: Predebon, Grimm, Nelson, Sikarskie, Sutherland, and Weinmann, \$153,495.
- Caterpillar, "Support for Machining Process Research," 1997-98, \$21,000.
- U.S. Department of Education, "GAANN: Graduate Assistance in Areas of National Need -- Ph.D. Fellowships in Environmentally Conscious Manufacturing," PIs: Pandit and Sutherland, 1998-2000, \$450,918.
- CenCITT, "An Economic Analysis of Dry Machining," PIs: Basu, Sutherland, and Baker, 1998, \$19,396.
- A.W. Chesterton, "Modeling the Heat Transfer Behavior of Cutting Fluids Using Computational Fluid Dynamics," PIs: Michalek and Sutherland, 1998-99, \$15,000.
- SME PrISM, "A Program in Integrated Sustainable Manufacturing," PIs: McKimpson, Weinmann, Sutherland, et al., 1998-2000, \$350,000.

- U.S. Dept. of Energy, "Interdisciplinary Center for Advanced Propulsion (ICAP)," PIs: Abata, Anderson, Burl, Evers, Friedrich, Johnson, Michalek, Milligan, Morrison, Mullins, Rundman, Sutherland, and Yang, 1998-2000, \$200,000.
- National Science Foundation, "Aerodynamic Particle Sizer for Industrial Air Quality Sampling," 1999, \$40,850.
- NSF Action Agenda Grant, "Course Module on Industrial Health and Safety for COE Enterprise Program," 1999-2000, PIs: Sutherland, Crawl, Friedrich, Young, and Basu, \$7,500.
- UAW-GM, "Sampling of Small, Airborne Particles in the Auto Industry," PIs: Sutherland and Johnson, 1999-2001, \$350,000.
- National Science Foundation, "Investigation of a Kinematic Coagulation Mechanism to Improve Air Quality in Machining Environments," PIs: Michalek and Sutherland, 2000-03, \$365,310.
- Caterpillar Inc., "Support for Machining Process Research," 2000, \$12,000.
- UAW-GM, "Sampling of Small, Airborne Particles in the Auto Industry," PIs: Sutherland and Johnson, 2001, \$40,000 (funding supplement).
- National Science Foundation, "REU Supplement - Investigation of a Kinematic Coagulation Mechanism to Improve Air Quality in Machining Environments," PIs: Michalek and Sutherland, 2000-01, \$12,000.
- Research Excellence Fund, "Infrastructure Enhancement for P2A2," 2003-04, PIs: Predebon, Sutherland, Endres, and Hokanson, \$25,000.
- GM-PACE, "Hardware for Demanufacturing Laboratory," PIs: Bettig and Sutherland, 2004, valued at \$10,000.
- National Science Foundation, "Defining a Curriculum for Service Sector Engineering," PIs: Sorby, Bohmann, Mattila, Friendway, and Sutherland, 2004-05, \$99,976.
- National Science Foundation, Integrative Graduate Education and Research Traineeship (IGERT): "IGERT: Achieving Environmental, Industrial and Societal Sustainability via the Sustainable Futures Model," Project Director: Sutherland, ~ 20 PIs (from MTU and SUBR), 2004-09, \$3.6 million.
- NSF-IGERT-Supplement, 2004, \$33,264.
- NSF-IGERT-Supplement, 2005, \$36,180.
- Boston Scientific-SciMed, "Improving Manufacturing System Performance via Simulation Optimization," 2004-05, \$60,000.
- NSF (MUSES), "Renewable Energy from Forest Resources: A Planning Grant for Investigating the Complex Interrelated Issues Associated with Generating Automotive Fuels from Lignocellulosic Biomass," PIs: Maclean, Halverson, Shonnard, Sutherland, and Webster, 2004-05, \$114,498.
- Research Excellence Fund, "Infrastructure Enhancement for the Sustainable Futures Institute," PIs: Sutherland and Hokanson, 2004-05, \$25,000.
- NSF (MUSES), "MUSES: Renewable Energy from Forest Resources: An Investigation into the Viability of Large-Scale Production of Sustainable Transportation Fuels From Lignocellulosic Biomass," PIs: Maclean, Flaspohler, Halverson, Shonnard, Solomon, Sutherland, Webster, Hokanson, and Chadde, 2006-10, \$1,700,000.
- Caterpillar Inc., "Evaluation of Low Greenhouse Gas Bio-Based Energy Technologies," PIs: Shonnard, Johnson, Froese, Sutherland, and Solomon, 2006, \$180,000.
- Caterpillar Inc., "Predicting Environmental Performance of Manufacturing Operations," PIs: Sutherland and Haapala, 2005-07, \$141,311.
- Mr. & Mrs. Arthur Heim, Program Support Gift "Heim Quality and Sustainability Laboratory," 2006, \$50,000.
- NSF CCLI (Course, Curriculum and Laboratory Improvement Program), "Implementing a Curriculum for Service Systems Engineering," PIs: Sorby, Johnson, Bohmann, Mattila, and Sutherland, 2006-09, \$500,000.
- Caterpillar, "Engine Remanufacturing Assessment", PIs: Sutherland and Adler, 2006-07, \$23,855.
- Schneider National, "Application of Control Theory Principles to Improve the Performance of a Dynamic Trucking Network," PIs: Camelio and Sutherland, 2007, \$41,000.
- Dow Corning, "Reducing the Environmental Impact of Material Conversion Process," PIs: Zhang and Sutherland, 2007-2008, \$5000.
- NSF IUCRC Planning Grant in partnership with University of Michigan, "Assembled Systems," MTU PIs: Sutherland, Gershenson, Camelio, 2008, \$10,000.

- Colcom Foundation, "Assessing the Carrying Capacity of the Great Lakes Natural Environment of Western Michigan," PIs: Breffle, Mukherjee, Amato-Henderson, and Sutherland, 2008, \$115,088.
- Frontier Renewable Resources, "Feedstock Supply Chain Model," PIs: Sutherland, Johnson, Frendewey, Watkins, Solomon, Pickens, Graman, & investigators from MSU, 2009-2011, \$550,000.

**Research Proposals**

Information on file.

## Publications

### Books and Chapters in Books

1. Oreskovich, D. C., B. P. Klein, and J. W. Sutherland, "Procrustes Analysis and its Applications to Free-Choice and Other Sensory Profiling," Chapter 13 in Sensory Science Theory and Applications in Foods, Eds. H. T. Lawless and B. P. Klein, Marcel Dekker, 1991, pp. 353-393.
2. DeVor, R. E., T. H. Chang, and J. W. Sutherland, Statistical Quality Design and Control: Contemporary Concepts and Methods, Macmillan, 1992, 809 pages.
3. DeVor, R. E., T. H. Chang, and J. W. Sutherland, Solutions Manual - Statistical Quality Design and Control: Contemporary Concepts and Methods, Macmillan, 1992, 566 pages
4. Sutherland, J. W., and K. L. Gunter, "Environmental Attributes of Manufacturing Processes," Chapter 13 in Handbook of Environmentally Conscious Manufacturing, Ed. C. N. Madu, Kluwer Acad. Pub., 2001, pp. 293-316.
5. DeVor, R. E., T. H. Chang, and J. W. Sutherland, Statistical Quality Design and Control: Contemporary Concepts and Methods, Second Edition, Prentice-Hall, 2006, 942 pages.
6. Electronic version of Solutions Manual is available online at the Prentice-Hall website.
7. Rivera, J. L., D. J. Michalek, and J. W. Sutherland, "Air Quality In Manufacturing," Chapter 7 in Environmentally Conscious Manufacturing Handbook, John Wiley and Sons, 2007, pp. 145-178.
8. Jenkins, T. L. and Sutherland, J. W. "An Integrated Supply System for Forest Biomass," Chapter 5 in Renewable Energy From Forest Resources in the United States, Ed.: B. D. Solomon and V. A. Luzadis, Routledge, Oxfordshire, UK, November 2008, pp. 92-115.

### Volumes Edited

1. Manufacturing Science and Engineering, ASME Bound Volume - PED Vol. 64, Editor: K. F. Ehmann; J. W. Sutherland one of several Contributing Editors, 1993.
2. Industrial Virtual Reality: Manufacturing and Design Tool for the Next Millennium, ASME Bound Volume - MH Vol. 5/MED Vol. 9, Principal Editors: P. Banerjee & T. Kesavadas; J. W. Sutherland one of several Contributing Editors, 1999.
3. Manufacturing Science and Engineering, ASME Bound Volume - MED Vol. 10, Principal Editor: J. W. Sutherland, 1999.
4. Proceedings of the ASME Manufacturing Engineering Division, ASME Bound Volume - MED Vol. 11, Editor: R. J. Furness; J. W. Sutherland one of several Contributing Editors, 2000.
5. Proceedings of the ASME Manufacturing Engineering Division, in association with the ASME IMECE, Editor: L. Yao; J. W. Sutherland one of several Contributing Editors, 2004, appeared on CD-ROM.
6. Two special issues on Educating Students in Sustainable Engineering for the International Journal of Engineering Education, Editors: Lynn Katz and John Sutherland, first issue: Vol. 23/2 – 2007, second issue: Vol. 23/6 – 2007.

### Refereed Journal Articles

1. Sutherland, J. W., and R. E. DeVor, "Error Prediction in Flexible End Milling Systems," J. of Engineering for Industry, Trans. ASME, Vol. 108, No. 4, November 1986, pp. 269-279.
2. Richardson, S. J., M. P. Steinberg, R. E. DeVor, and J. W. Sutherland, "Characterization of the Oxygen-17 Nuclear Magnetic Resonance Water Mobility Response Surface," J. of Food Science, Vol. 52, No. 1, 1987, pp. 189-193.
3. Sutherland, J. W., R. E. DeVor, S. G. Kapoor, and P. M. Ferreira, "Machining Process Models for Product and Process Design," Soc. of Automotive Engrs. Technical Paper No. 880793, also in SAE Trans., Vol. 97, No. 5, 1988, pp. 215-226.
4. Sutherland, J. W., D. J. O'Brien, and M. S. Wagner, "An Algorithm for the Detection of Flute Breakage in a Peripheral End Milling Process," Trans. of NAMRI/SME, Vol. 17, May 1989, pp. 144-151.
5. Lin, S. C., R. E. DeVor, S. G. Kapoor, and J. W. Sutherland, "A New Approach to Estimating Cutting Process Damping Under Working Conditions," Trans. of NAMRI/SME, Vol. 18, May 1990, pp. 154-160.
6. Sutherland, J. W., and K. S. Moon, "Procrustes Analysis and its Application to Sensor Integration," Trans. of NAMRI/SME, Vol. 20, May 1992, pp. 347-354.
7. Sutherland, J. W., and W. J. Zdeblick, "Modeling the Thread Chasing Process for Improved Product Quality," Soc. of Automotive Engrs. Technical Paper No. 920919, also in the SAE Trans., J. of Materials and Manufacturing, Vol. 101, No. 5, 1992, pp. 711-719.

8. Mistry, A. H., S. J. Schmidt, S. R. Eckhoff, and J. W. Sutherland, "Alkali Extraction of Starch from Corn Flour," Starch/Stärke, Vol. 44, 1992, pp. 284-288.
9. Michler, J. R., K. S. Moon, J. W. Sutherland, and A. R. Kashani, "Development of a Cutting Tool Micropositioner," Trans. of NAMRI/SME, Vol. 21, May 1993, pp. 421-427.
10. Kashani, A. R., J. W. Sutherland, K. S. Moon, and J. R. Michler, "A Robust Control Scheme for Improved Machined Surface Texture," Trans. of NAMRI/SME, Vol. 21, May 1993, pp. 429-434.
11. Olson, W. W. and J. W. Sutherland, "Research Issues in Demanufacturing," Trans. of NAMRI/SME, Vol. 21, May 1993, pp. 443-450.
12. Moon, K. S. and J. W. Sutherland, "The Origin and Interpretation of Spatial Frequencies in a Turned Surface Profile," J. of Engineering for Industry, Trans. ASME, Vol. 116, No. 3, August 1994, pp. 340-347, also in Contact Problems and Surface Interaction in Manufacturing and Tribological Systems, ASME Bound Volume - PED Vol. 67, December 1993, pp. 343-351.
13. Vadrevu, S., K. Philipps, J. W. Sutherland, and W. W. Olson, "Loss Function Modeling of Time Varying Quality Characteristics," Trans. of NAMRI/SME, Vol. 22, May 1994, pp. 343-349.
14. Runola, J. P., K. S. Moon, and J. W. Sutherland, "The Effect of Tool Wear on the Wavelength Structure of a Turned Surface Profile," Trans. of NAMRI/SME, Vol. 22, May 1994, pp. 105-109.
15. Matulis, R. J., F. K. McKeith, J. W. Sutherland, and M. S. Brewer, "Sensory Characteristics of Frankfurters as Affected by Fat, Salt, and pH," J. of Food Science, Vol. 60, No. 1, 1995, pp. 42-47.
16. Matulis, R. J., F. K. McKeith, J. W. Sutherland, and M. S. Brewer, "Sensory Characteristics of Frankfurters as Affected by Salt, Fat, Soy Protein, and Carrageenan," J. of Food Science, Vol. 60, No. 1, 1995, pp. 48-54.
17. Savage, W. D, L. S. Wei, J. W. Sutherland, and S. J. Schmidt, "Biologically Active Components Inactivation and Protein Insolubilization during Heat Processing of Soybeans," J. of Food Science, Vol. 60, No. 1, 1995, pp. 164-168, 180.
18. Salisbury, E. J., K. S. Moon, and J. W. Sutherland, "Development of a Microscopic Laser Interferometry System for Precision Surface Measurement," J. Eng. for Ind., Trans. ASME, Vol. 117, November 1995, pp. 619-624, also in Contact Problems and Surface Interaction in Manufacturing and Tribological Systems, ASME Bound Volume - PED Vol. 67, December 1993, pp. 333-341, authors: K. S. Moon, E. J. Salisbury, and J. W. Sutherland.
19. Salisbury, E. J., K. S. Moon, and J. W. Sutherland, "Phase Shift Estimation: A Method for Improving the Accuracy of Phase Shift Interferometers," Trans. of NAMRI/SME, Vol. 23, May 1995, pp. 345-350.
20. Zheng, Y., J. W. Sutherland, and W. W. Olson, "A Predictive Heat Generation Model in Orthogonal Cutting Visco-Plastic Material," Journal of the Mechanical Behavior of Materials, Vol. 6, No. 3, 1996, pp. 245-261.
21. Philipps, K, W. W. Olson, and J. W. Sutherland, "Shearing of Automotive Grade Polypropylene and Acrylonitrile-Butadiene Styrene to Facilitate Recycling," Trans. of NAMRI/SME, Vol. 24, May 1996, pp. 217-222.
22. Huang, J., W. W. Olson, J. W. Sutherland, and E. C. Aifantis, "On the Shear Instability in Chip Formation in Orthogonal Machining," Journal of the Mechanical Behavior of Materials, Vol. 7, No. 4, 1996, pp. 279-292.
23. Sutherland, J. W., T. Cao, C. M. Daniel, Y. Yue, Y. Zheng, P. Sheng, D. Bauer, M. Srinivasan, R. E. DeVor, S. G. Kapoor, and S. Skerlos, "CFEST: An Internet-Based Cutting Fluid Evaluation Software Testbed," Trans. of NAMRI/SME, Vol. 25, May 1997, pp. 243-248.
24. Batzer, S. A., J. W. Sutherland, and W. W. Olson, "Chip Morphology and Bending Moment Models for Orthogonal Machining with Flat Faced Tools," Trans. of NAMRI/SME, Vol. 25, May 1997, pp. 231-236.
25. Sutherland, J. W., E. J. Salisbury, and F. W. Hoge, "A Model for the Cutting Force System in the Gear Broaching Process," Int. J. of Mach. Tools and Manufacture, Vol. 37, No. 10, 1997, pp. 1409-1421.
26. Haan, D. M., S. A. Batzer, W. W. Olson, and J. W. Sutherland, "An Experimental Study of Cutting Fluid Effects in Drilling," Journal of Matls. Processing Tech., Vol. 71/2, November 1997, pp. 305-313.
27. Wentland, C. J., N. Soni, W. W. Olson, and J. W. Sutherland, "Development and Application of a Reprocessability Index System for Discrete Rotational Parts," Engineering Design and Automation, Vol. 4, No. 1, 1998, pp. 47-55.
28. Wang, Y., G. Zhang, K. S. Moon, and J. W. Sutherland, "Compensation for the Thermal Error of a Multi-axis Machining Center," Journal of Matls. Processing Tech., Vol. 75/1-3, March 1998, pp. 45-53.
29. Ranganath S., D. Liu, and J. W. Sutherland, "A Comprehensive Model for the Flank Face Interference Mechanism in Peripheral Milling," Trans. of NAMRI/SME, Vol. 26, May 1998, pp. 249-254.

30. Daniel, C. M., W. W. Olson, and J. W. Sutherland, "Modeling the Effects of Component Level Geometric and Form Deviations on Machine Tool Slideway Errors," Trans. of NAMRI/SME, Vol. 26, May 1998, pp. 347-352, also appeared as SME Technical Paper No. MS98-266, 1998.
31. Liu, D., J. W. Sutherland, K. S. Moon, T. J. Sturos, and A. R. Kashani, "Surface Texture Improvement in the Turning Process via Application of a Magnetostrictively Actuated Tool Holder," Trans. ASME, J. of Dyn. Sys., Meas., and Control, Vol. 120, June 1998, pp. 193-199.
32. Batzer, S. A., D. M. Haan, P. D. Rao, W. W. Olson, and J. W. Sutherland, "Chip Morphology and Hole Texture in the Drilling of Cast Aluminum Alloys," Journal of Matls. Processing Tech., Vol. 79/1-3, July 1998, pp. 72-78.
33. Daniel, C. M., W. W. Olson, and J. W. Sutherland, "Research Advances in Dry and Semi-Dry Machining," SAE Technical Paper No. 970415, also in the SAE Trans., J. of Materials and Manufacturing, Vol. 106, 1997, pp. 373-383.
34. Milacic, D., H. A. Gowaikar, W. W. Olson, and J. W. Sutherland, "A Proposed LCA Model of Environmental Effects with Markovian Decision Making," SAE Technical Paper No. 971174, also in the SAE Trans., J. of Passenger Cars, Vol. 106, 1997, pp. 2174-2181.
35. Gunter, K. L. and J. W. Sutherland, "An Experimental Investigation into the Effect of Process Conditions on the Mass Concentration of Cutting Fluid Mist in Turning," Journal of Cleaner Production, Vol. 7, No. 5, 1999, pp. 341-350.
36. Yue, Y., K. L. Gunter, D. J. Michalek, and J. W. Sutherland, "An Examination of Cutting Fluid Mist Formation in Machining," Trans. of NAMRI/SME, Vol. 27, May 1999, pp. 221-226, also appeared as SME Technical Paper No. MS99-180, 1999.
37. Cozzens, D. A., P. D. Rao, W. W. Olson, J. W. Sutherland, and J. M. Panetta, "An Experimental Investigation into the Effect of Cutting Fluid Conditions on the Boring of Aluminum Alloys," J. of Mfg. Sci. & Engr., Trans. ASME, Vol. 121, No. 3, August 1999, pp. 434-439.
38. Melkote, S. N., J. W. Sutherland, and C. King, "The Effect of Tool Flexibility on Back-Cutting in End Milled Surfaces," J. of Mfg. Sci. & Engr., Trans. ASME, Vol. 121, No. 3, August 1999, pp. 532-537.
39. Ranganath, S., K. Narayanan, and J. W. Sutherland, "The Role of Flank Face Interference in Improving the Accuracy of Dynamic Force Predictions in Peripheral Milling," J. of Manf. Sci. and Engr., Trans. ASME, Vol. 121, No. 4, November 1999, pp. 593-599.
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42. Zheng, Y., H. Li, W. W. Olson, and J. W. Sutherland, "Evaluating Cutting Fluid Effects on Cylinder Boring Surface Errors by Inverse Heat Transfer and Finite Element Methods," J. of Manf. Sci. and Engr., Trans. ASME, Vol. 122, No. 3, August 2000, pp. 377-383.
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44. Li, J., and J. W. Sutherland, "Multi-Channel Data Transmission System for Rotating Elements Using a Non-Contacting Slip Ring," Review of Scientific Instruments, Vol. 71, No. 11, November 2000, pp. 4319 - 4322.
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46. Batzer, S. A., and J. W. Sutherland, "A Geometric Analysis of Semi-spiral Chip Morphology in Orthogonal Machining," Machining Science and Technology, Vol. 5, No. 1, 2001, pp. 63-76.
47. Eppert, J. J., K. L. Gunter, and J. W. Sutherland, "Development of a Cutting Fluid Classification System Using Cluster Analysis," Tribology Transactions, Vol. 44, No. 3, 2001, pp. 375-382.
48. Li, J., and J. W. Sutherland, "Multi-Channel Dynamic Data Collecting System of Rotors," Journal of Modelling, Measurement & Control, Series B, Vol. 70, No. 4, 2001, pp. 1-10.
49. Li, J., X. Zhang, and J. W. Sutherland, "Identification of Gear Transmission System Dynamics; Part I: Model Development," Journal of Advances in Modelling & Analysis, Series C, Vol. 56, No. 1, 2001, pp. 1-12.



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#### **Abstracts, Published Papers, and Posters**

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5. Moon, K. S., M. H. Miller, A. Chandra, and J. W. Sutherland, "Abrasives work at MTU," Abrasives Magazine, June/July 1996, pp. 17, 27-29.

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12. Shonnard, D.R., Jensen, J.R., Naber, J., Polonowski, C., Zhang, Q., Maclean, A., Halvorsen, K.E., Jenkins, T., Sutherland, J.W., Froese, R.E., and Miller, C.A., "Wood-to-Wheels: A Multidisciplinary Research Initiative in Sustainable Transportation Utilizing Fuels and Co-Products from Forest Resources," Future of Biofuels/Keystone conference, Snowbird, Utah, 2009.
13. Clarke-Sather, A. R., Jenkins, T. L., Haapala, K. R. and Sutherland, J. W., "Sustainable Production," Encyclopedia of Geography, Warf, B., SAGE Publications, Inc., Thousand Oaks, CA, to appear 2010.

#### Lectures, Seminars, and Presentations

1. "On the Geometry of End Milled Surfaces," presented at the 14th North Am. Manf. Res. Conf., Univ. of Minnesota, May 1986. See paper above.
2. "An Improved Method for Cutting Force and Surface Error Prediction in Flexible End Milling Systems," presented at the ASME WAM, Anaheim, California, December 1986. See paper above.
3. "Machining Process Models for Product and Process Design," presented at the 39th SAE Earthmoving Industry Conference, Peoria, Illinois, April 1988. See paper above.
4. "The Geometry of Surfaces Generated by the Bottom of an End Mill," presented at the 16th North Am. Manf. Res. Conf., Univ. of Illinois, May 1988. See paper above.
5. "An Integrated Approach to Machine Tool System Analysis, Design, and Control," presented at the 3rd Int. Conf. on Comp-Aid. Prod. Engr., Univ. of Michigan, June 1988. See paper above.
6. "A Dynamic Model of the Cutting Force System in the End Milling Process," presented at the ASME WAM, Chicago, Illinois, November 1988. See paper above.
7. "An Algorithm for the Detection of Flute Breakage in a Peripheral End Milling Process," presented at the 17th North Am. Manf. Res. Conf., Ohio State University, May 1989. See paper above.
8. "A Quality-Engineering-Based Approach to the Simultaneous Engineering of Products and their Manufacturing Processes," presented at the 5th Int. Conf. on Comp.-Aid. Prod. Engr., Univ. of Edinburgh (Scotland), November 1989. See paper above.
9. "A New Approach to Estimating Cutting Process Damping Under Working Conditions," presented at the 18th North Am. Manf. Res. Conf., Penn. State Univ., May 1990. See paper above.
10. "Taguchi's Contributions to Quality Engineering," invited presentation for the Danville, Illinois Section of the American Society for Quality Control, April 1991.
11. "Modeling the Thread Chasing Process for Improved Product Quality," presented at the 43rd SAE Earthmoving Industry Conference, Peoria, Illinois, April 1992. See paper above.
12. "Procrustes Analysis and its Application to Sensor Integration," presented at the 20th North Am. Manf. Res. Conf., Wash. State Univ., May 1992. See paper above.
13. Two-day seminar on *Statistical Methods for Quality Design and Improvement* through the Office of Continuing Engineering Education and the Institute for Competitive Manufacturing of the University of Illinois, August 3-4, 1992.
14. "Improved Image Information Via Procrustes Analysis," presented at the ASME WAM, Anaheim, California, November 1992. See paper above.
15. "Introduction to Two-Level Factorial Designs," invited seminar for University of Illinois Cooperative Extension Service (FN 420), Oak Brook, Illinois, March 2, 1993.
16. "A Robust Control Scheme for Improved Machined Surface Texture," presented at the 21st North Am. Manf. Res. Conf., Okla. State Univ., May 1993. See paper above.

17. "The Role of Computer-Based Simulation in Manufacturing Laboratories," presented at the ASEE Annual Conference, Univ. of Illinois at Urbana-Champaign, June 1993. See paper above.
18. "Questioning the Traditional Role of Cutting Fluids in Machining," invited presentation at the SME - Advances in Metalworking Fluids Workshop, Fort Mitchell, Kentucky, March 29, 1995.
19. "Programmatic Activities in Manufacturing at MTU - Development of a Magnetostrictive Actuator," invited seminar at the United Technologies Research Center, East Hartford, Connecticut, July 31, 1995.
20. "Programmatic Activities in Manufacturing at MTU - Grinding Research," invited seminar at the Norton Company - World Grinding Technology Center, Worcester, Massachusetts, July 31, 1995.
21. "Activities in Environmentally Conscious Design and Manufacturing at MTU," invited presentation for USCAR's (GM, Ford, Chrysler) Vehicle Recycling Partnership, Detroit, Michigan, September 1, 1995.
22. "Determination of Design Effort Distribution for an Environmentally Conscious Product Using a Pairwise Comparison Approach," presented at the ASME IMECE, San Francisco, California, November 1995. See paper above.
23. "Application of an Actively Controlled Magnetostrictive Actuator for Vibration Abatement in the Turning Process," presented at the ASME IMECE, San Francisco, California, November 1995. See paper above.
24. "An Experimental Investigation into the Effect of Cutting Fluid Conditions on the Boring of Aluminum Alloys," presented at the ASME IMECE, San Francisco, California, November 1995. See paper above.
25. "MT-AMRI and MTU Programs in Environmentally Conscious Machining," presented to the Dry Machining of Aluminum Team Meeting at NCMS, December 4, 1995.
26. "Working with Graduate Students," presented to MTU Chapter of the American Society of Engineering Education, Houghton, Michigan, January 25, 1996.
27. "Environmentally Conscious Machining Activities at Michigan Technological University," presented to the Ford Motor Company, Livonia, Michigan, February 23, 1996.
28. Co-Organizer, MT-AMRI Workshop on Environmentally Conscious Machining, Ford Scientific Research Laboratories, Dearborn, Michigan, May 14, 1996.
29. "Adaptive Feedforward Control for Periodic Disturbance Rejection with Application to Machining Processes," presented at the 24th North Am. Manf. Res. Conf., Univ. of Michigan, May 1996. See paper above.
30. "Development of an Internet-Based Cutting Fluid Evaluation Software Testbed," invited presentation at the SME - Metalworking Fluids Workshop, Troy, Michigan, June 5, 1996.
31. "Effect of Cutting Fluid Properties and Application Variables on Heat Transfer in Turning and Boring Operations," presented at the Japan - U.S.A. Symposium on Flexible Automation, Boston, Massachusetts, July 1996. See paper above.
32. "The Frequency Component Structure of a 3-D Grinding Wheel Surface and its Effect on Ground Surface Texture," presented at the Japan - U.S.A. Symposium on Flexible Automation, Boston, Massachusetts, July 1996. See paper above.
33. "Environmental Issues Associated with Machining Processes," presented at the First Euroconference and U.S. Workshop on Material Instabilities in Deformation and Fracture, Porto Carras, Greece, September 1996.
34. "Environmentally Conscious Manufacturing," presented at the CenCITT SAC meeting, Houghton, Michigan, September 1996.
35. "Environmentally Conscious Machining," presented at Louisiana State University, Baton Rouge, Louisiana, October 1996.
36. "Cutting Fluid Mist Formation in Machining Via Atomization Mechanisms," presented at ASME IMECE, Atlanta, Georgia, November 1996. See paper above.
37. "Machine Tool Research at Michigan Technological University," presented to the Ingersoll Milling Machine Company, Rockford, Illinois, December 9, 1996.
38. "Enhancing EMSIM - Incorporating a Ploughing Model to Achieve Process Damping," presented at the MT- AMRI Process Modeling Workshop, Urbana, Illinois, December 10, 1996.
39. "Research on Environmentally Conscious Machining," a poster for 1997 NSF Design & Mfg. Grantees Conf., Seattle, Washington, January 16-18, 1997.
40. "Research on Environmentally Conscious Machining - Dry Machining," presented to GM (Mark Gillman), Pontiac, Michigan, February 17, 1997.
41. "The Role of Cutting Fluids in Machining Process Performance," presented to Monsanto, Urbana, Illinois, February 21, 1997.

42. "Research on Environmentally Conscious Machining," presented at Iowa State University, Ames, Iowa, February 27, 1997.
43. "An Overview of Environmentally Conscious Machining at Michigan Technological University," presented to the Ford Motor Company, Livonia, Michigan, March 24, 1997.
44. "Characterizing the Role of Cutting Fluids in Machining Processes," invited presentation at the SME - Advances in Metal Working Fluids Workshop, Fort Mitchell, Kentucky, April 9, 1997.
45. "Environmentally Conscious Machining: Recent Developments Relating to Cutting Fluids and Dry Machining," invited presentation at Cooper Industries (Crouse-Hinds), Syracuse, New York, June 6, 1997.
46. "Short Course on Design of Experiments," Corn Products, Argo, Illinois, July 29-30 and August 13-14, 1997.
47. Co-Organizer, MT-AMRI Workshop on Environmentally Conscious Machining, Ford QMP Facility, Dearborn, Michigan, September 19, 1997.
48. "Overview of the Programs and Activities of the Machine Tool Agile Manufacturing Research Institute," invited presentation at the DARPA/NSF Agile Manufacturing Initiative Principal Investigators Meeting, Alexandria, Virginia, September 23, 1997.
49. "Global M.S. Degree in Mechanical Engineering," presented at Ford FTDC, Dearborn, Michigan, September 25, 1997.
50. "Research Issues Associated with Environmentally Conscious Machining," presented at the University of Florida, Gainesville, Florida, October 21, 1997.
51. "Research on the Role of Cutting Fluids in Machining Processes and Technology Transfer via a Software Testbed," presented at the Cincinnati Milacron Consumable Products Division's Annual Engineering and Development Technical Seminar, Cincinnati, Ohio, October 23, 1997.
52. "Dry Machining - Examining the Role of Metalworking Fluids," invited presentation at the SME - Advances in Metal Working Fluids Workshop, Chicago, Illinois, April 29, 1998.
53. "Pollution Prevention in Machining" presented at the National Pollution Prevention Roundtable Spring Conference, Cincinnati, Ohio, April 30, 1998.
54. "A Comprehensive Model for the Flank Face Interference Mechanism in Peripheral Milling," presented at the 26th North Am. Manf. Res. Conf., Georgia Tech., May 1998. See paper above.
55. "Modeling the Effects of Component Level Geometric and Form Deviations on Slideway Errors," presented at the 26th North Am. Manf. Res. Conf., Georgia Tech., May 1998. See paper above.
56. "Environmentally Conscious Manufacturing," presented at the CenCITT SAC Meeting, Chicago, Illinois, September 28, 1998.
57. "Active Vibration Abatement in a Turning Process by Applying a Magnetostrictively Actuated Tool Holder" presented at ASME IMECE, Anaheim, California, November 1998. See paper above.
58. "Waste Reduction in Machining Processes," at U.S. EPA Region 5 Waste Minimization Conference in Chicago, Illinois, December 14-16, 1998.
59. "Research on Environmentally Conscious Machining," a poster for 1999 NSF Design & Mfg. Grantees Conf., January 7-8, 1999.
60. "Application of Gradient Theory in Machining: Localized Chip Formation," presented at Plasticity '99 in Cancun, Mexico, January 12, 1999. See paper above.
61. "Environmentally Conscious Manufacturing," invited presentation at Iowa State University, April 26-27, 1999.
62. "Examining the Role of Metal Working Fluids in Machining," at Metalworking Fluids Clinic, Romulus, Michigan, May 11-12, 1999.
63. "Effects of Cutting Fluid Composition on the Dimensional Accuracy of Tapped Threads," presented at the 27th North Am. Manf. Res. Conf., Berkeley, California, May 1999. See paper above.
64. "An Examination of Cutting Fluid Mist Formation in Machining," presented at the 27th North Am. Manf. Res. Conf., Berkeley, California, May 1999. See paper above.
65. "The Role of Cutting Fluids in Machining," invited presentation at 3M, St. Paul, Minnesota, July 19, 1999.
66. "Michigan Tech's Research on Dry Machining and the Role of Cutting Fluids in Machining," invited presentation at NCMS Fall Workshop Series, Dearborn, Michigan, September 27-28, 1999.
67. "An Orthogonal Cutting Model Based on Finite Deformation Analysis Part I: Model Development, and Part II: Constitutive Equations and Experimental Verification," presented at ASME IMECE, Nashville, Tennessee, November 1999. See paper above.
68. "Cutting Fluids in Machining: Heat Transfer and Mist Formation Issues," NSF Grantees Conference, January 5-7, 2000. See paper above.

69. "Environmentally Responsible Manufacturing Research," invited presentation at Notre Dame University, February 28-29, 2000.
70. "Use of a Manufacturing Process Classification System for Improved Environmental Performance," presented at SAE Congress, Detroit, Michigan, March 6-9, 2000. See paper above.
71. Speaker and organizer of panel on "Green Manufacturing," for National Manufacturing Week, Chicago, Illinois, March 15, 2000.
72. "Environmentally Responsible Manufacturing Research," invited presentation at Penn. State University, March 27-28, 2000.
73. "Research on Environmentally Responsible Manufacturing," invited presentation at Georgia Tech, Atlanta, Georgia, May 2-3, 2000.
74. "Mechanistic Prediction of Drilling Forces Incorporating a Minimum Cutting Energy Model for Chip Flow Angle," presented at the 28th North Am. Manf. Res. Conf., Lexington, Kentucky, May 2000. See paper above.
75. "The Role of Cutting Fluids in Machining," invited presentation at Coolants/Lubricants for Metal Cutting & Grinding Conference, Chicago, Illinois, June 5-7, 2000.
76. "Modeling of Cutting Fluid System Dynamics," presented at 2000 Japan - U.S.A. Symposium on Flexible Automation, Ann Arbor, Michigan, July 2000. See paper above.
77. "Input-Output Modeling for Environmental Impact Analysis of Manufacturing Processes," presented at 2000 Japan - U.S.A. Symposium on Flexible Automation, Ann Arbor, Michigan, July 2000. See paper above.
78. "An Experimental Investigation of Air Quality in Wet and Dry Turning," presented at the 50th CIRP General Assembly, Sydney, Australia, August 20-26, 2000. See paper above.
79. "Cutting Fluid Mist Formation in Turning Via Atomization, Part 1: Model Development, and Part 2: Experimental Validation," presented at 2000 ASME IMECE, Orlando, Florida, November 2000. See paper above.
80. "Environmentally Benign Manufacturing," invited presentation at Sigma Xi meeting, MTU, Houghton, Michigan, November 30, 2000.
81. "Characterizing the Role of Cutting Fluids in Machining," invited presentation at annual CIRP meeting, Paris, France, January 2001.
82. "Research on Environmentally Responsible Manufacturing," invited presentation at Virginia Tech, 2001.
83. "Wet Versus Dry Turning: A Comparison of Machining Costs, Product Quality, and Aerosol Formation" presented at SAE, in Detroit, Michigan, March 5, 2001. See paper above.
84. "Research on Environmentally Responsible Manufacturing," invited presentation at Penn State, March 2001.
85. "Industrial Ecology and the Automobile: Assessing the Sustainability of the Automobile Material Life Cycle," presented to GM, Detroit, Michigan, September, 2001.
86. "Industrial Ecology," NSF-STC Site Visit, MTU, Houghton, Michigan, October 28, 2001.
87. "Environmentally Benign Manufacturing (An NSF Sponsored Global Benchmarking Study)," invited speaker at Society for Environmental Engineering, MTU, Houghton, Michigan, November 8, 2001.
88. "Development of a Model for the Prediction of the Energy Partition in a Peripheral Milling Operation," presented at 2001 ASME IMECE, New York, New York, November 2001. See paper above.
89. "Sampling of Small Airborne Particles in the Auto Industry," presented (with J. Dasch, J. D'Arcy, and A. Gundrum) to UAW-GM Natl. Joint Comm. on Health & Safety, Detroit, Michigan, December 2001.
90. "Research Status of MQL in Machining," invited presentation (with S. Liang) at annual CIRP meeting, Paris, France, January 2002.
91. "NSF Workshop on Environmentally Benign Manufacturing," invited presentation at SAE Congress, Detroit, Michigan, March 2002.
92. "A Model for Material Flows and Economic Exchanges Within the U.S. Automotive Life-Cycle Chain and its Sensitivity to Systemic Changes," presented at CIRP Life Cycle Conference, Erlangen, Germany, April 2002. See paper above.
93. "Sustainable Futures," presented with John Crittenden to Ford, GM, Visteon, Delphi, BASF, Detroit, Michigan, May 2002.
94. "Sustainable Manufacturing Research at Michigan Tech," presented to Steelcase, May 2002.
95. "Automotive Industry – Sustainable Futures," presented to College of Engineering Industrial Advisory Board, Chrysler-Liberty, Detroit, Michigan, May 2002.

96. "Thoughts on Submitting a Career Proposal to the National Science Foundation," presented to untenured faculty, Houghton, Michigan, May 2002.
97. "An Experimental Study of the Fume Particulate Produced by the Shielded Metal Arc Welding Process," presented at 30th North Am. Manf. Res. Conf., West Lafayette, Indiana, May 2002. See paper above.
98. Sutherland's student, Ken Gunter, presented "A Framework for Characterizing the Impact of Product Design Decisions on Environmental Performance," at Japan-USA Symposium on Flexible Automation, Hiroshima Japan, 2002. See paper above.
99. "A Model for Improving Economic Performance of a Demanufacturing System for Reduced Product End-of-Life Environmental Impact," presented at 2002 CIRP General Assembly, San Sebastian Spain. See paper above.
100. "Environmentally Responsible Manufacturing Enterprises – A Key to Sustainable Development," invited presentation at MIM, Milwaukee Wisconsin, 2002.
101. "Manufacturing Research Activities at Michigan Tech," invited presentation at Caterpillar, Mossville, Illinois, October 22, 2002.
102. "Quantifying the Impact of Cutting Fluids on Machining Operations," invited presentation at the UNIST-organized seminar on MQL, Grand Rapids, Michigan, October 24, 2002.
103. Sutherland's student, Chuanxi Ju, presented "Application of an Imaging System to Study Machining Mist Formation via an Atomization Mechanism," at ASME IMECE 2002, New Orleans, Louisiana. See paper above.
104. "An Investigation into the Effect of Process Parameter Settings on Air Emission Characteristics in the Lost Foam Casting Process," presented at the 2003 AFS Conference, Milwaukee Wisconsin. See paper above.
105. "Sustainable Futures – Recent & Planned Initiatives," invited presentation to the Office of Educational Opportunity Board Meeting, April 2003.
106. "The Future of Continued Use of Flood Coolants in Machining Operations," invited presentation at UNIST workshop, Grand Rapids, Michigan, June 4-5, 2003.
107. "An Education Program in Support of a Sustainable Future," presented at ASME-IMECE 2003, Washington D.C. See paper above.
108. "Environmentally Responsible Manufacturing Research at Michigan Technological University," invited presentation at Virginia Tech, Blacksburg, Virginia, February 9-11, 2004.
109. "Reducing the Use of Cutting Fluids in Operations," invited presentation at International Symposium on Ecological Challenge in Manufacturing Systems, Yokohama Japan, February 24-29, 2004. See paper above.
110. "Environmentally Responsible Manufacturing Research at Michigan Technological University," invited presentation at Univ. of Cincinnati, May 12-13, 2004.
111. "A Model for Material Flows and Economic Exchanges Within the U.S. Automotive Life Cycle Chain," presented at NAMRC 2004, Univ. of North Carolina-Charlotte, June 2004. See paper above.
112. Sutherland's student, Vishesh Kumar presented "An Enhanced Input-Output Model for Material Flow Analysis of Manufacturing Processes," presented at Japan-USA Symposium of Flexible Automation, Denver, Colorado, 2004. See paper above.
113. "Predicting Manufacturing Waste and Energy for Sustainable Product Development via WE-Fab Software," presented at the Global Conference on Sustainable Product Development and Life Cycle Engineering, Berlin Germany, September 2004. See paper above.
114. Sutherland's student, Vishesh Kumar presented "Analytical Models for Economic Demanufacturing Inventory Management," at ASME-IMECE, Anaheim, California, 2004. See paper above.
115. "An Update on the Sustainable Futures IGERT," presented at CIRP Paris Meeting, January 2005.
116. "Environmentally Responsible Manufacturing," invited presentation at International Workshop on Manufacturing, Pretoria, South Africa, January 2005.
117. "Research and Collaboration Opportunities with Michigan Tech," invited presentation at International Workshop on Manufacturing, Johannesburg, South Africa, January 2005.
118. "Sustainable Futures Institute: An Overview," presented to MTU COE IAB, Houghton, Michigan, April 2005.
119. "Development of a Magnetostrictive-Actuated Tool Holder for Dry Deep Hole Drilling," presented at NAMRC 2005, Columbia Univ., New York, May 2005. See paper above.
120. "Towards Manufacturing/Mechanical Engineering Curricular Change in Support of a Sustainable Future." 3rd SME International Conference on Manufacturing Education, San Luis Obispo, California, June 2005. See paper above.

121. Invited panelist, "Sustainability in Manufacturing/Mechanical/Industrial Engineering Curricula," 3rd SME International Conference on Manufacturing Education, San Luis Obispo, California, June 2005.
122. "Integrating Societal Considerations into LCA: An Exploratory Discussion," presented at CIRP General Assembly, Antalya, Turkey, August 2005.
123. Colleague James D'Arcy presented work undertaken with J. Dasch, J. Johnson, J. Sutherland, D. Carlson, and A. Gundrum, "Fine and Ultrafine Particle Emissions from Current Manufacturing Technologies," at the 2<sup>nd</sup> International Symposium on Nanotechnology and Occupational Health, Minneapolis, Minnesota, October 3-6, 2005.
124. Sutherland's student, Karl Haapala, presented "Issues Associated with MQL Implementation: Effect on Peripheral Milling Process Performance and Impact on Machining Economics," ASME IMECE, Orlando, Florida, November 2005. See paper above.
125. Invited presentation, "Education – A Key to Sustainability," ASME IMECE, Orlando, Florida, November 2005.
126. Sutherland's student, Vishesh Kumar, presented "Towards Sustainable Product and Material Flow Cycles: Identifying Barriers to Achieving Multi-use and Zero Waste," ASME IMECE, Orlando, Florida, November 2005. See paper above.
127. Invited panelist to BRTD session, "Sustainable Manufacturing," ASME IMECE, Orlando, Florida, November 2005.
128. Sutherland's post-doc, Serdar Tumkor, presented "Electrical and Electronic Equipment Recovery and Recycling in Turkey," ASME IMECE, Orlando, Florida, November 5-11, 2005. See paper above.
129. Sutherland's student, Xuefei Hu, presented the two-part paper "Characterizing the Effect of 319 Aluminum Microstructure on Machinability, Part 1: Model Development and Part 2: Model Validation," ASME IMECE, Orlando, Florida, November 5-11, 2005. See paper above.
130. Invited presentation at the University of Michigan, "Activities of the Sustainable Futures Institute at Michigan Tech," Ann Arbor, Michigan, March 2006.
131. Sutherland's student, Margot Hutchins, presented "The Role of the Social Dimension in Life Cycle Engineering," at the 13th CIRP International Conference on Life Cycle Engineering, Leuven, Belgium, June 2006. See paper above.
132. Sutherland's post-doc, S. Tumkor, presented "New Engineering Design Concepts for the Sustainable Products," at the American Society for Engineering Education - 113th Annual Conference and Exposition, Chicago, Illinois, June 18-21, 2006. See paper above.
133. Sutherland, J. W., presented paper authored by Tim Gutowski (MIT) on "Electrical Energy Requirements for Manufacturing Processes," at the 13th CIRP International Conference on Life Cycle Engineering, Leuven, Belgium, June 2006.
134. Sutherland, J. W., presented "Environmentally Responsible Process Selection via Life Cycle Analysis," at the International Symposium on Flexible Automation, Osaka, Japan, July 10-12, 2006. See paper above.
135. Sutherland's student, L. R. Garcilaso, presented "Conversion of Products to Services (Dematerialization) to Promote Sustainability," at the 16th CIRP International Design Seminar - Design & Innovation for Sustainable Society, Kananaskis, Canada, July 16-19, 2006. See paper above.
136. Sutherland's student, Abigail Clarke, presented "Distributed or Centralized Production: Impacts to the Environment, Industry, and the Economy," National Science Foundation Design, Manufacturing and Innovation Grantees Conference, St. Louis, Missouri, July 24-27, 2006.
137. Sutherland's student, Abigail Clarke, presented "Sustainable Product Realization: The Future Scientific Formalism for Global Manufacturing Enterprises in 2025," American Society of Mechanical Engineers – Design Engineering Technical Conference, Philadelphia, Pennsylvania, September 10-13, 2006.
138. Sutherland's mentee, M. E. Jarvie presented "Exploring Value Flow in the Product Life Cycle to Promote Successful Value Recovery" at Sustainable Manufacturing IV Global Conference on Sustainable Product Development and Life Cycle Engineering, Sao Carlos, Sao Paulo, Brazil, October 3-6, 2006. See paper above.
139. Sutherland's colleague, S. A. Sorby, presented "Defining a Curriculum for Service Systems Engineering," at IBM Service Science, Management, and Engineering (SSME) Conference, October 7-8, 2006. See paper above.
140. Sutherland's colleague, D. R. Shonnard, presented "Graduate Education in Sustainability for Engineering and the Social Sciences: An NSF-Sponsored Intercampus Program," AIChE 2006 Annual Meeting, San Francisco, California, November 16, 2006.



141. Sutherland's colleagues, D. M. Johnson & L. J. Bohmann, led a workshop on "Curriculum Model for Service Systems," Annual Meeting of the Production and Operations Management Society, January 2007. See paper above.
142. Johnson, D. M., L. J. Bohmann, K. G. Mattila, J. W. Sutherland, S. A. Sorby, and N. Onder, "Curriculum Model for Service Systems," Poster for Annual Meeting of Production and Operations Management Society, January 2007.
143. Sutherland's post-doc, V. Kumar, presented "Achieving Higher Material Recovery Rates from End-of-Use Vehicles," NAMRC 35, University of Michigan, May 22-25, 2007. See paper above.
144. "A Life-Cycle Comparison of Clothes Washing Alternatives," 14th CIRP Conference on Life Cycle Engineering, Tokyo, Japan, June 11-13, 2007. See paper above.
145. "Sustainable Manufacturing Trends in the United States & Discussion Topics," invited speaker at 14th CIRP Conference on Life Cycle Engineering, Tokyo, Japan, June 11-13, 2007.
146. "Sustainable Manufacturing: Global Benchmarking Study & NSF Workshop," Ford Motor Company, Dearborn, Michigan, July 13, 2007.
147. "Sustainability at Michigan Tech," invited presentation at Univ. of Nebraska-Lincoln, August 14, 2007.
148. Sutherland's student Karl Haapala presented, "Optimization of Steel Production to Improve Lifecycle Environmental Performance," CIRP General Assembly, Dresden, Germany, August 18-25, 2007. See paper above.
149. Invited speaker, "Potential Economic Impact of a Wood-based Biorefinery," Michigan Bio-Economy Summit, Lansing, Michigan, September 12-13, 2007.
150. Invited Conference Keynote Lecture, with J. Mihelcic, "Sustainable Engineering," 2007 ASEE North Midwest Sectional Conference, Houghton, Michigan, September 20-22, 2007.
151. Sutherland's student, K. Brown, presented "Engineering Design Curricula Review," at the 2007 ASEE North Midwest Sectional Conference, Houghton, Michigan, September 20-22, 2007.
152. Sutherland's student, K. R. Haapala, presented "Education, Research, and Training Aspects of the Sustainable Futures NSF IGERT Project," 2007 ASEE North Midwest Sectional Conference, Houghton, Michigan, September 20-22, 2007. See paper above.
153. Hutchins, M. J., C. Walck, and J. W. Sutherland, Workshop on "Addressing the Social Dimension of Sustainability in Engineering Education," 2007 ASEE North Midwest Sectional Conference, Houghton, Michigan, September 20-22, 2007.
154. Bohmann, L. J., D. Johnson, K. Mattila, S. Sorby, and J. Sutherland, "Educating Students for the Service Economy: An Undergraduate Curriculum in Service Systems Engineering," 16th Frontiers in Service Conference, San Francisco, California, October 4-7, 2007. See paper above.
155. Sutherland's student T. J. Eatmon, poster presentation, "An Internet-Based Model of the Domestic Adoption of Climate Change Policy in the Absence of U.S. Federal and International Mandatory Policy," Conference for Sustainability IGERTs: Integrating Sciences to Understand Social-Ecological Systems, University of Alaska, Fairbanks, Alaska, October 11-13, 2007.
156. Sutherland's student M. J. Hutchins, poster presentation, "Incorporating the Social Dimension of Sustainability into Decision Making," Conference for Sustainability IGERTs: Integrating Sciences to Understand Social-Ecological Systems, University of Alaska, Fairbanks, Alaska, October 11-13, 2007.
157. "Comparing Energy & Other Measures of Environmental Performance in the Original Manufacturing and Remanufacturing of Engine Components," ASME Manufacturing Science and Engineering Conference, Atlanta, Georgia, October 16-18, 2007. See paper above.
158. Invited speaker, presentation on "Quality Activities at MTU," American Supplier Institute (ASI), Inc., Livonia, Michigan, November 9, 2007.
159. Bohmann, L. J., D. M. Johnson, K. G. Mattila, N. Onder, and J. W. Sutherland, "Update on Service Systems Engineering Curriculum - One Year Later," 38th Annual Meeting of Decision Sciences Institute, Phoenix, Arizona, November 2007.
160. Sutherland's student, K. Brown, presented "An Examination of the Barriers and Benefits of Implementing WEEE Recovery and Recycling," King-Chavez Parks Future Faculty Fellowship Conference, Ferris State University, Big Rapids, Michigan, March 3-April 1, 2008.
161. "Climate Change and Manufacturing," invited speaker at the 15th CIRP International Conference on Life Cycle Engineering, Sydney, Australia, March 17-19, 2008.
162. Sutherland's student, A. Clarke, presented "Selection of Remanufacturing Facility Locations to Minimize Cost and Environmental Impact," at the 15th CIRP International Conference on Life Cycle Engineering, Sydney, Australia, March 17-19, 2008. See paper above.

163. Sutherland's colleague M. Gale presented "Carbon Footprint Assessment and Reduction: A Driver of Research Collaborations and Curriculum Innovation at Michigan Tech," Higher Learning Commission, Chicago, Illinois, April 13, 2008.
164. Sutherland's student, K. Haapala, presented "A Life Cycle Environmental and Economic Comparison of Product-Service Systems," 36th Annual North American Manufacturing Research Conference, Monterrey, Mexico, May 20-23, 2008. See paper above.
165. "Challenges for the Manufacturing Enterprise to Achieve Sustainable Development," Invited Keynote for 41st CIRP Conference on Manufacturing Systems, Tokyo, Japan, May 2008. See paper above.
166. Bohmann, L., D. Johnson, K. Mattila, N. Onder, and J. Sutherland, "Designing a First Course in Service Systems Engineering," 2008 ASEE Conference – NSF Grantees' Poster Session, Pittsburgh, Pennsylvania, June 23, 2008, poster.
167. "A Comparison of Manufacturing and Remanufacturing Energy Intensities with Application to Diesel Engine Production," CIRP General Assembly, Manchester, England, August 24-30, 2008. See paper above.
168. "Sustainable Development: What are the Challenges for the Manufacturing Enterprise?" Invited Keynote for International Conference on Sustainable Manufacturing, Hefei, China, September 26-27, 2008.
169. Sutherland's student, J. Rivera, presented "Reducing the Environmental and Social Impacts of E-Waste Recovery in Developing Countries Through Technology and Policy," Global Conference on Sustainable Product Development and Life Cycle Engineering Sustainability and Remanufacturing VI, Busan, Korea, September 29 – October 1, 2008, see paper above.
170. Sutherland's student, J. Rivera, presented "The Role of Nanotechnology in Sustainable Manufacturing," Global Conference on Sustainable Product Development and Life Cycle Engineering Sustainability and Remanufacturing VI, Busan, Korea, September 29 – October 1, 2008, see paper above.
171. "Overview of the Sustainable Futures Institute," invited presentation at IRI 2008 Member Summit, Denver, Colorado, October 14-16, 2008.

#### Reports/Theses

1. Sutherland, J. W., "An Analysis of Factors Contributing to Variability in Machined Aluminum Casting Alloy Surfaces," M.S. Thesis, University of Illinois, 1982.
2. Sutherland, J. W., "A Dynamic Model of the Cutting Force System in the End Milling Process," Ph.D. Thesis, University of Illinois, 1987.
3. Sutherland, J. W., and W. J. Endres, "Analysis of the Cylinder Boring Operation – Report 1," submitted to Outboard Marine Corporation by Process Design and Control, Inc., July 1989.
4. Sutherland, J. W., and W. J. Endres, "Analysis of the Cylinder Boring Operation – Report 2," submitted to Outboard Marine Corporation by Process Design and Control, Inc., December 1989.
5. Sutherland, J. W., and W. J. Endres, "Analysis of the Cylinder Boring Operation - Report 3," submitted to Outboard Marine Corporation by Process Design and Control, Inc., February 1990.
6. Sutherland, J. W., and W. J. Endres, "Analysis of the Cylinder Boring Operation - Final Report," submitted to Outboard Marine Corporation by Process Design and Control, Inc., March 1990.
7. Sutherland, J. W., "Hydrant Fueling System Reliability Assessment," submitted to U.S. Army Construction Engineering Research Laboratory by Process Design and Control, Inc., July 1990.
8. Sutherland, J. W., "Quality of Jet Fuel Piping System at Ellsworth AFB," submitted to U.S. Army Construction Engineering Research Laboratory, October 1995.
9. WTEC Panel Report, Panelists: D. Allen, D. Bauer, B. Bras, T. Gutowski, C. Murphy, T. Piwonka, P. Sheng, J. Sutherland, D. Thurston, and E. Wolff, Environmentally Benign Manufacturing, Loyola College, Baltimore, Maryland, April 2001.
10. Shonnard, D.R., Q. Zhang, D. M. Johnson, R. E. Froese, J. W. Sutherland, B. D. Solomon, J. H. Whitmarsh, J. R. Waterstraut, A. R. Martín-García, C. A. Miller, T. L. Jenkins, and G. J. Wright, "Evaluation of Low Greenhouse Gas Bio-Based Energy Technologies," a report prepared for Caterpillar, Peoria, Illinois, November 2006.

#### Citations

Information on file.

## Teaching

### Courses Taught

Analysis of Manufacturing Processes - UIUC  
 Industrial Quality Control - UIUC  
 Statistical Design of Experiments - UIUC  
 Accuracy, Modeling, and Control of Machining Processes - UIUC (course development)  
 Quality Engineering - MTU (course revision)  
 Experimental Design in Engineering - MTU  
 Introduction to Manufacturing Processes - MTU  
 Machining Processes - MTU  
 Numerical Control of Manufacturing Processes – MTU  
 Production Planning – MTU  
 Seminar in Manufacturing Systems Engineering - MTU  
 Advanced Topics in Machining - MTU (course development)  
 Concurrent Engineering - MTU (course development)  
 Design and Manufacturing for the Environment - MTU (course development)  
 Engineering for the Environment - MTU (course development)  
 Introduction to Engineering for the Environment - MTU (course development)  
 Introduction to Manufacturing Systems - MTU (course development)  
 Process Design and Optimization - MTU (course development)  
 Service Processes and Systems - MTU (course development)  
 Service System Dynamics and Design - MTU (course development)

### Teaching Evaluations at MTU (Fall 1999-present)

Students' responses to questions on Evaluation Form (Rated 1 - 5, with 5 being excellent or strongly agree) - University Average is approximately 4.0.

Q8. "The instructor communicated the course materials clearly."

Q19. "Given the opportunity, I would take another course from this instructor."

Q20. "Taking everything into account, I would consider this instructor to be an excellent teacher."

Term	Course	# students	Q8	Q19	Q20
F99	ME 464	46	4.62	4.82	4.82
	ME 590				
	ME 590 (Ford)	6			
	ME 505	15			
W99-00	ME505	18			
	asst. w/ ME591B (Ford)	6	4.50	4.50	4.50
	ME 591B (GM)	51			
	MEEM 4650	44	4.59	4.79	4.83
	MEEM 5650, 5650 (Ford)	5, 4			
S00					
F00	MEEM 4650	29	4.24	4.31	4.41
	MEEM 5650	6	4.83	4.67	4.67
S01	MEEM 5990	5	4.50	4.75	4.75
	MEEM 5990 (Ford)	10	4.33	4.67	4.67
F01	MEEM 4650	29	4.59	4.79	4.83
S02	MEEM 4685	28	3.84	3.79	3.89
	MEEM 5685, 5685 (Ford)	(6, 6)	4.50	4.50	4.67
F02	MEEM 4650	39	4.38	4.29	4.32
	MEEM 5650, 5650 (Ford)	(6, 3)			
S03	MEEM 5990 - DOE	8	4.88	4.88	4.88
F03	MEEM 4650	42	4.70	4.81	4.85
	MEEM 5650	11	4.63	4.63	4.63

S04	MEEM 4685	18	4.33	5.00	5.00
	MEEM 5685	15	4.33	4.42	4.42
F04	MEEM 4650	33	4.31	4.48	4.48
	MEEM 5650	9	4.33	4.56	4.22
S05	MEEM 5990 - DOE	10	4.50	4.78	4.78
F05	MEEM 4650	37	4.19	3.92	3.89
	MEEM 5650	19	4.47	4.32	4.42
S06	MEEM 4990	10	4.11	4.67	4.70
	MEEM 5990 - Serv. Proc. & Sys.	10			
	ENG 5530 – Grad Colloq in Sust	7	4.40	4.50	4.40
F06	System Dynamics	5			
	MEEM 4650	37	4.49	4.41	4.35
	MEEM 5650	4	4.50	4.25	4.50
S07	MEEM 4990 – DOE	8	4.50	4.38	4.50
	MEEM 5990 – DOE	10	4.80	4.30	4.40
F07	ENG 5530 – Grad Colloq in Sust	4+12			
	MEEM 4650	52	4.28	4.18	4.28
	MEEM 5650	11	4.83	5.00	5.00
	MEEM 5990 - Networks	5			
S08	SSE 2300	~5			
	MEEM 4990	~10	4.00	4.25	4.50
	ENG 5530 – Grad Colloq in Sust	1+15			
F08	MEEM 4650	32	4.22	4.13	4.31
	MEEM 5650	12	4.82	4.91	4.91
	MEEM 5685	13	4.15	4.15	4.31
	ENG 5530	17			

### Teaching Evaluations at MTU (1991-1999)

Students' responses to first 5 questions on Michigan Technological University - Faculty Evaluation Form, (Rated 1 - 5, with 5 being excellent or strongly agree) - University Average is approximately 4.0.

- Q1. "How would you characterize the instructor's ability to explain ..."
- Q2. "This course was well organized ..."
- Q3. "Did the instructor treat you with respect ..."
- Q4. "The instructor encourages students' enthusiasm for continued learning ..."
- Q5. "Taking everything into account, I consider this instructor ..."

Term	Course	# students	Q1	Q2	Q3	Q4	Q5
F 91	ME 303	32	4.42	4.42	4.77	4.42	4.65
	ME 303	33	4.76	4.40	4.76	4.56	4.72
W 91-92	ME 303	21	4.61	4.28	4.78	4.28	4.67
	ME 406	31	4.44	4.00	4.74	4.52	4.56
S 92	ME 464	92	4.80	4.70	4.83	4.67	4.81
F 92	ME 303	40	4.67	4.55	4.67	4.61	4.64
	ME 505	14	5.00	4.15	4.85	4.77	5.00
W 92-93	ME 303	26	4.80	4.60	4.80	4.87	4.80
	ME 303	57	4.56	4.64	4.74	4.62	4.72
S 93	ME 464	129	4.72	4.57	4.64	4.73	4.69
F 93	ME 490 (Conc. Engr)	43	4.39	3.92	4.58	4.69	4.44
	ME 569	19	4.71	4.59	5.00	4.75	4.88
W 93-94	ME 303	17	4.62	4.77	4.69	4.46	4.69
	ME 406	36	4.44	4.38	4.81	4.41	4.53
S 94	ME 464	115	4.55	4.40	4.63	4.50	4.62
F 94	ME 464	47	4.73	4.52	4.79	4.58	4.78

	ME 442	39	4.18	3.04	4.56	4.32	3.96
W 94-95	ME 491 (Engr Env)	9	4.43	4.17	5.00	5.00	4.57
	ME 403	38	4.81	4.31	4.81	4.78	4.77
S 95	ME 464	91	4.59	4.53	4.65	4.56	4.58
F 95	ME 590 (Machining)	12	5.00	5.00	5.00	5.00	5.00
	ME 464	49	4.82	4.71	4.88	4.71	4.85
W 95-96	ME 491 (Mfg Sys)	20	4.69	4.13	4.75	4.63	4.69
	ME 491 / ME 591 (GM - Engr Env)	5 / 7 30+					
S 96	ME 464	75	4.68	4.56	4.73	4.71	4.75
	ME 592 (GM - ECDM)	8 20+					
	ME 303 (GM)	40+					
F 96	ME 464	30	4.60	4.30	4.60	4.60	4.65
	ME 590 / EM 590	5					
W 96-97	ME 468	53	4.44	4.12	4.65	4.44	4.35
	ME 491 / CE 490 / GN 350	28					
S 97	ME 464	81	4.53	4.62	4.73	4.59	4.56
F 97	ME 464	31	4.8	4.5	4.8	4.5	4.7
W 97-98	ME 491 / ME 591 (GM - Engr Env)	6 / 8 50					
S 98	ME592 (GM - Engr Env)	6 42					
	ME464	43	4.9	4.6	4.7	4.7	4.9
F98	ME464	31	4.82	4.86	4.77	4.64	4.91
	ME590A	5					
	ME490A (Ford)	4	4.6	4.5	4.6	4.5	4.5
	ME505	14					
W98-99	ME505	14					
	ME491A (DOE)	2					
	ME591A	9	4.67	4.33	4.50	4.50	4.50
	ME 591 <sup>a</sup> (Ford)	13					
S99	ME505	14					

#### Other Teaching Activities

- Served as advisor for student group entered in the PADNOS design competition (11/93 - 5/94). The team consisted of Srikanth Vadrevu, Robert Wade, Chris Essenburg, Tiam-Hock Eng, and C. K. Dakshinamurthy. The PADNOS competition seeks to recognize innovative senior engineering design projects which are environmentally responsible.
- Instructor for GN 350 (Engineering for the Environment) sponsored by the Westinghouse Foundation (Project Directors: C. R. Baillod and N. J. Hutzler). Effort was aimed at developing an environmental engineering course for all engineering disciplines.
- Guest Lecturer for MA 299 (Continuing Mathematics) - "Concepts from Calculus used to Study Properties of Different Surfaces."
- Guest Lecturer for MA 580, Spring 1996.
- Guest Speaker for ME 101, Winter 1997-98.
- Guest Speaker, MTU Summer Institute, Summer 1999.
- Guest Speaker for ME 101, Winter 1999-00.
- Guest lecturer for FW 5850, Fall 2005 "Proposal Advice"
- Special lecture to Perspectives on Sustainability Class, "Perspectives on Sustainability," Michigan Tech, September 9, 2008.

### Undergraduate Student Project Advising

- Lisa Crosby, ME 492, Spring 1992, "Multivariate Statistical Process Control."
- Kevin Wittrup, Spring 1992, "Characterization of Machining Dynamics."
- Ronda Reister, ME490, Summer/Fall 1992, "Procrustes Analysis."
- Scott Reynolds, ME 491, Winter 1993, "Integration of Finite Element and Cutting Process Models."
- Bill Frederick, ME 492, Spring 1993, "Design and Manufacture of Plastic Fatigue Specimens" - with J. Williams (Chem. Engr.).
- Mark Rodaer, ME 492, Spring 1993, "Design and Manufacture of Plastic Fatigue Specimens" - with J. Williams (Chem. Engr.).
- Matt Eyre, ME 492, Spring 1993, "Design and Manufacture of Plastic Tensile and Flexure Bars" - with J. Williams (Chem. Engr.).
- Chris Korson, ME 492, Spring 1993, "Design and Manufacture of Plastic Tensile and Flexure Bars" - with J. Williams (Chem. Engr.).
- Jeff Vlahos, ME 492, Spring 1993, "Design and Manufacture of Plastic Tensile and Flexure Bars" - with J. Williams (Chem. Engr.).
- Mike Reiter, ME 492, Spring 1993, "Design and Manufacture of Plastic Hexbloks" - with J. Williams (Chem. Engr.).
- Paul Hildebrand, ME 492, Spring 1993, "Design and Manufacture of a Plastic Mixing Cup" - with J. Williams (Chem. Engr.).
- Ken Shear, ME 492, Spring 1993, "Design and Manufacture of a Plastic Mixing Cup" - with J. Williams (Chem. Engr.).
- Brad Mullen, ME 490, Fall 1993, "Robust Design."
- Scott Sodini, ME 492, Spring 1994, "Surface Texture and the Grinding Process."
- Oliver Kirchhof, German intern, Summer 1994, "Disassembly - The first Step in Demanufacturing Discarded Products" - with W. Olson.
- Udo Berthold, German intern, Summer 1994, "Design for Recycling and Reuse" - with W. Olson.
- Leah Soules, ME 490, Fall 1994, "Modal Analysis of a Machine Tool Spindle."
- Alex Unger, German Intern, Summer 1995 - with W. Olson.
- Felix Santana, ME 490, Summer-Fall 1995.
- Dale Harris, ME 490, Summer-Fall 1995.
- Shawn Powers, ME 490, Fall 1995.
- Yiqiao Chang, ME 492, Spring 1996.
- Ryan Adragna, ME 492, Spring 1996.
- Lawrence Mahaffy, ME 492, Spring 1996.
- Bert Mueller, German Intern, Summer 1996 - with W. Olson.
- Erik Weber, undergraduate researcher - supported under NSF/REU program, Summer 1997-Summer 1998.
- Joe Eppert, undergraduate researcher - supported under NSF/REU program, Summer 1997-Fall 1999.
- Angela Caligiuri, ME492, Spring 1998.
- Daniel Vannest, ME492, Spring 1998.
- Jeremy Willett, ME492, Spring 1998.
- Steve Behm, undergraduate researcher - supported under NSF/REU program, Spring 1998.
- Kevin Zuidema, undergraduate researcher - supported under NSF/REU program, Spring 1998-Spring 1999.
- Marc Greca, undergraduate researcher - supported under NSF/REU program, Spring 1998-Fall 1999.
- Luke Keranen, undergraduate researcher - supported under NSF/REU program, Spring 1999-Winter 2000.
- Mike Behm, undergraduate researcher - supported under NSF/REU program, Spring 1999-Winter 2000.
- Pat Ellison, undergraduate researcher - supported under NSF/REU program, beginning Spring 1999.
- Mary Ann Parr, undergraduate researcher - supported under NSF/REU program, beginning Fall 1999.
- Eric Brust, undergraduate researcher - supported under NSF/REU program, beginning Winter 1999/2000.
- Zack Sionakides, undergraduate researcher-supported under NSF/REU program, beginning Winter 2000.
- Paul Vagts, undergraduate researcher-supported under NSF/REU program, started Winter 2000.
- Robert Hamel, undergraduate researcher - supported under NSF/REU program, beginning Winter 2000.
- Mark Haen, ME447, Winter 1999/2000.
- Vincent Skalski, ME447, Winter 1999/2000.

- Kyle VanderWall, ME447, Winter 1999/2000.
- Jason Verboomen, ME447, Winter 1999/2000.
- Justin Kendig, undergraduate researcher - supported under NSF/REU program, started Spring 2000.
- Donnie Wilson, undergraduate researcher - supported under NSF/REU program, started Spring 2000.
- Kevin Herrera, undergraduate researcher - supported under NSF/REU program, Spring 2000-Fall 2000.
- Paul Miller, undergraduate researcher - supported under NSF/REU program, started Spring 2000.
- Marlena Santti, undergraduate researcher - supported under NSF/REU program, started Spring 2000.
- Nicholas Mehl, undergraduate researcher - supported under NSF/REU program, Spring 2000-Summer 2000.
- Deepankar Bodapati, undergraduate researcher - supported under NSF/REU program, Fall 2000-Spring 2001.
- Jessica Apel-Milsud, undergraduate researcher - supported under NSF/REU program, Spring 2001-Spring 2001.
- John Oommen, undergraduate web-designer, started Spring 2001.
- Blake Fecteau, undergraduate researcher - supported under NSF/REU program, started Fall 2001.
- Daniel Moore, undergraduate research - supported under NSF/REU program, Spring 2001.
- Scott Krahn, undergraduate researcher - supported under NSF/REU program, started Spring 2001.
- John Thompsen, undergraduate researcher, started Spring 2003.
- Ian Kowalczyk, undergraduate researcher, started Spring 2003.
- Mike Svendsen, undergraduate researcher, 2003-04
- Chris Anton, undergraduate researcher, 2003-04
- Dan Adler, undergraduate researcher, 2004
- Frederick Rickert, undergraduate researcher, 2004
- Ryan Fox, undergraduate researcher, 2004
- David Bell, undergraduate researcher, 2005
- Chris Davis, undergraduate researcher, 2006
- Joe Studinger, undergraduate researcher, 2006
- Daniel Graham, 2007- present – Michigan Tech Carbon Footprint Project
- Kaari Nevanen, 2007- present – Michigan Tech Carbon Footprint Project
- Jillian Schubert, 2007- present – Michigan Tech Carbon Footprint Project
- Kyle D. Franks, undergraduate researcher, 2007.
- Andre Gomez, undergraduate researcher, 2008.
- Joshua Johnson, undergraduate researcher, 2008.
- Kyle Larson, undergraduate researcher, 2008.
- Noah Schuster, undergraduate researcher, 2008.
- Matthew Trombley, undergraduate researcher, 2008.
- Brandon Quig, undergraduate web-designer, 2008.
- Garrett Hoffman, undergraduate web-designer, 2008.
- Chuck Workman, independent study, 2009

#### **Notable Education Activities at the University of Illinois:**

- Member of instruction team for course on *Statistical Methods for Quality and Productivity Design and Improvement* through the Office of Continuing Education and Public Service - Division of Conferences and Institutes, Univ. of Illinois, 1981-86, taught once/year.
- Member of instruction team for course on *Computer Aided Manufacturing* through the Office of Advanced Engineering Studies, Univ. of Illinois, Spring 1984.
- Development of computer-based games to teach the principles of statistical process control and statistical experimental design for courses on those subjects at the UIUC.
- Instructor, Industrial Quality Control (IE 335), for the Office of Continuing Education at UIUC, Fall 1990.
- Development of software for the simulation of machining processes for use in introductory manufacturing processes course.
- Faculty advisor for Alpha Pi Mu, the Industrial Engineering Honor Society, Fall 1987.

- Coordinator for the Junior Engineering Technical Society (JETS) and Minority Introduction to Engineering (MITE) programs for the Dept. of Mech. and Ind. Engr., Summer 1987 and 1988.
- Member, Organizing Committee for NAMRC Spring 1988.

**Teaching Evaluations at UIUC (1984-1991)**

Students' responses to questions 1 and 2 on UIUC Instructor and Course Evaluation Form (ICES form), (Rated 1 - 5, with 5 being the highest) - Dept. average was approximately 3.8 - 3.9.

Q1. "Rate the instructor's overall teaching effectiveness ..."

Q2. "Rate the overall quality of this course ..."

Sem.	Course	Title	# stds.	Q1	Q2
F 84	ME 285	Analysis of Manf. Processes	133	4.1	*
S 85	ME 285	Analysis of Manf. Processes	86	4.5	*
F 85	ME 285	Analysis of Manf. Processes	125	4.6	*
S 86	ME 285	Analysis of Manf. Processes	45	4.7	*
	ME 285	Analysis of Manf. Processes	42	4.6	*
F 86	ME 285	Analysis of Manf. Processes	79	4.4	3.8
S 87	ME 285	Analysis of Manf. Processes	42	4.4	4.0
	ME 285	Analysis of Manf. Processes	51	4.2	3.6
F 87	ME 285	Analysis of Manf. Processes	113	3.9	3.5
S 88	ME 285	Analysis of Manf. Processes	57	4.4	3.8
F 88	ME 285	Analysis of Manf. Processes	110	4.3	3.8
S 89	IE 336	Industrial Design of Experiments	62	4.4	4.1
F 89	IE 335	Industrial Quality Control	90	4.0	4.1
S 90	IE 336	Industrial Design of Experiments	43	4.6	4.6
F 90	IE 335	Industrial Quality Control	76	4.5	4.3
S 91	IE 336	Industrial Design of Experiments	62	4.4	4.1

\* This question did not appear on the ICES form during these semesters.



## Service

### Michigan Technological University

- Department of Mechanical Engineering - Engineering Mechanics
  - Frequent Member/Chair of Mfg./Ind. Engr. Area Ph.D. Qualifying Exam Committee.
  - Member, Faculty Development (Promotion & Tenure) Committee, 1991-92, 1996-97, 2006-2008.
  - Member, ME-EM Department Chair Search Committee, 1992-93.
  - Member, Laboratory Committee, 1992-2001.
  - Member, GM Fellowship Committee, 1993-95.
  - Faculty Advisor, Michigan Technological University Student Chapter of the Society of Manufacturing Engineers, 1995-97.
  - Ford Global MSME degree ("Bradford") Committee, 1996-98.
  - ME-EM Manufacturing Initiative Committee, 1996-98.
  - Adhoc Committee on Workload and Merit, 1997-98, 2002-04.
  - ME-EM Director of Graduate Studies, 1997-2001.
    - Chair, ME-EM Graduate Committee, 1997-2001.
    - ME-EM Executive Committee, 1997-2001.
    - Coordinated preparations for review of ME-EM Dept. Graduate Program, April 14-15, 1999 (reviewers: W. Winer & G. P. (Bud) Peterson).
  - ME-EM Honors & Awards Committee, as needed.
  - Faculty Recruiting Committee, 2001-2007.
  - Selection Committee, Michigan Technological University's Presidential Council of Alumnae (PCA), 2004.
  - Faculty mentor for the following junior faculty: Gordon Parker, John Gershenson, Donna Michalek, William Endres, Roshan D'Souza, Bernhard Bettig, Jeffrey Naber, Jaime Camelio, Spandan Maiti.
  - Graduate Committee, 2006-07
  - Member, ME-EM Academy Nomination Committee, 2006-present
- College of Engineering
  - Member, Department Chair Search Committee, Department of Metallurgical and Materials Engineering, 1996.
  - College of Engineering Promotion and Tenure Committee, 2003-04, 2005-06.
  - Service Systems Engineering Program, 2006-present.
- University
  - Member, Total Quality Education Steering Committee, 1992-93.
  - Technical Advisor to Total Quality Education Coordinator, 1993.
  - Graduate Faculty Council, 1997-2001.
  - Served on the Merit Award Selection Committee, 1999.
  - Participant in Michigan Tech Board of Control and Administration Retreat, March 9-10, 2000.
  - UGR Scholarship Selection Committee for Off. of Ed. Op., 2002, 2003.
  - Co-Director, Sustainable Futures Institute, 2004-07.
  - Graduate Faculty of Southern University-Baton Rouge with Adjunct Doctoral Faculty status, 2004-present.
  - University Campus Campaign Committee, 2004-present.
  - Graduate School Dean Search Committee, 2005.
  - Search Committee, position within the Office of Vice President for Research, 2005.
  - Blue Ribbon Panel, Improving University Rankings, 2005-06.
  - University Provost Search Committee, 2006-07.
  - Carbon Footprint Initiative – Campus AQIP project, 2007-present.
    - Proposal to establish a Green Campus Enterprise.
  - Director, Sustainable Futures Institute, 2007-present.
  - Chair, Strategic Faculty Hiring Initiative Search Committee, 2007-2008.
  - Associate Member, Energy Advisory Group, 2008-present.
  - Advance Committee, 2008-present
  - Grievance Committee, 2009-present

**Briefings/Meetings/Workshops**

- Sustainable Futures Institute
  - Educating Engineers for Sustainability Workshop, January 2003, Houghton, Michigan.
  - SFI Orientation/Professional Development Week, August 2004.
  - Invited participant, Next Generation Manufacturing Technology Initiative (NGMTI) Safe, Secure, Reliable and Sustainable Manufacturing (SSRS) Operations Workshop, May 2-4, 2005, Orlando, Florida.
  - SFI Orientation/Professional Development Week, August 2005.
  - 1st Annual Sustainable Futures Institute Advisory Board Meeting, Michigan Tech, Fall 2005.
  - IGERT Summit Teleconference, November 30, 2005.
  - "Industry Canada" visit – December 2005.
  - IGERT Summit at Michigan Tech, April 24-26, 2006.
  - SFI Orientation/Professional Development Week, August 2006.
  - 2nd Annual Sustainable Futures Institute Advisory Board Meeting, Michigan Tech, September 19-21, 2006.
  - "Sustainable Futures Institute and IGERT Update," presented to ME-EM EAB, October 4, 2006.
  - IGERT Summit at Southern University, April 4-6, 2007.
  - "Sustainable Futures Institute and IGERT Update," presented to ME-EM EAB, April 23, 2007.
  - SFI Orientation/Professional Development Week, August 2007.
  - 3rd Annual Sustainable Futures Institute Advisory Board Meeting, Michigan Tech, October 10-11, 2007.
  - "Sustainable Futures Institute & IGERT Update," presented to MEEM EAB, October 3, 2007.
  - IGERT Project Review at Southern University, November 12, 2007.
  - "Sustainable Futures Institute & IGERT Update," presented to MEEM EAB, April 21, 2008.
  - Sustainable Futures Institute Advisory Board Meeting/Teleconference, Michigan Tech, May 15, 2008.
  - NSF IGERT PI Workshop, Arlington, Virginia, May 18-20, 2008.
  - "Industry Midwest" visit – August 2008.
  - "Sustainable Futures Institute and Sustainability Efforts Related to Design, Materials, & Manufacturing," Ford Symposium, Michigan Tech, August 19, 2008.
  - SFI Orientation/Professional Development Week, August 2008.
  - Welcome Luncheon, New Faculty of MTU, Michigan Tech, September 16, 2008.
  - Visit by John 'Fritz' Raffensperger, University of Canterbury, October 3, 2008.
  - Visit by Susann Nordrum, Midyear Commencement Speaker, December 12, 2008.
- Wood-to-Wheels
  - Visit by Senator Carl Levin and his staff, July 3, 2006.
  - Visit by Michigan Economic Development Corporation (MEDC), March 16, 2007.
  - Community Power Visit, May 8, 2007.
  - Visit by Mascoma personnel, June 6, 2007.
  - Visit by State Representatives Mike Lahti and George Cushingberry, July 21, 2007.
  - Kickoff Meeting: GM-Sponsored Project "A Systems Approach to Improve Processing Efficiency of Forestry Biomass for Co-Production of Biofuels and Biopolymers," July 26, 2007.
  - Visit by State Senators Mike Prusi and Bruce Patterson, August 13, 2007.
  - Organized "Wood to Wheels Campus Seminar," MTU, September 13, 2007.
  - Invited presentation, "Wood to Wheels," Great Lakes IT Report Tech Tour, September 28, 2007.
  - Invited participant, Alternative Energy Roundtable Discussion, Governor Jennifer Granholm host, New Page Corporation, Escanaba, Michigan, December 3, 2007.
  - Visit by Senator Debbie Stabenow, February 9, 2008.
  - Visit by NORAMCO Engineering Corporation and Ponsse Group, North America, March 27, 2008.
  - Visit by Michigan State University, December 2, 2008.
  - COEE Visit Spring 2009
- Service Systems Engineering
  - Service Systems Engineering Booth at Open House Expo, MTU, October 7, 2006.
  - Service Systems Engineering Workshop, Michigan Tech, August 2-3, 2006.
  - SSE Workshop, Honolulu Hawaii, June 27, 2007.

- Service Systems Engineering Booth at Open House Expo, MTU, September 29, 2007.
- Service Systems Engineering Curriculum Development Meeting, MTU, January 9, 2008.
- Service Systems Engineering Booth at Preview Day, MTU, March 29, 2008.
  
- Other
  - Attended week-long workshop on Managing Total Quality, held by 3M in St. Paul, Minnesota, February 22-26, 1993.
  - Attended 3-day workshop on Total Quality Management (3M - MTU Partnership), St. Paul, Minnesota, August 9-11, 1993.
  - Visit by Dr. Lesia Crumpton-Young, National Science Foundation (NSF), October 5-6, 2008.

## Professional Activities

### Society of Manufacturing Engineers

- Senior member in the North American Manufacturing Research Institution of the Society of Manufacturing Engineers (NAMRI/SME), elected May 1986.
- Member, Organizing Committee for the 16th North Am. Manf. Res. Conf., held at the University of Illinois at Urbana-Champaign, 1988.
- Member of Proposal Review Committee for the Manufacturing Engineering Education Foundation of the Society of Manufacturing Engineers, March 1993.
- Co-chair of Organizing Committee for the 23rd North Am. Manf. Res. Conf., held at Michigan Technological University, 1995.
- Member, Scientific Committee of NAMRI/SME, 1991-present.
- Member, NAMRI/SME Program Committee, 1993-95.
- Member, Organizing Committee for the 25th North Am. Manf. Res. Conf., held at the University of Nebraska-Lincoln, 1997.
- Member, Board of Directors, NAMRI/SME, 1998-2004.

### American Society of Mechanical Engineers

- Co-Organizer (with S. Smith, R. J. Stango, P. FitzPatrick, and L. Chen), symposium for the 1993 ASME Winter Annual Meeting, "Modeling, Monitoring and Control Issues in Machining Processes," ASME Bound Volume, PED Vol. 64.
- Elected to the Executive Committee of the Manufacturing Engineering Division of the American Society of Mechanical Engineers. Served on the Committee from 1996-2001.
- Organizer, ASME Student Manufacturing Design Competition in conjunction with the 1997 International Mechanical Engineering Congress and Exposition (IMECE).
- Secretary, ASME Manufacturing Engineering Division, 1997-98.
- Program Chair for 1999 IMECE, ASME Manufacturing Engineering Division, 1998-99.
- Vice Chair, ASME Manufacturing Engineering Division, 1999-2000.
- Chair, ASME Manufacturing Engineering Division, 2000-01.
- Co-Organizer (with J. Pratt), symposium for the 2000 ASME IMECE, "Environmentally Responsible Design and Manufacturing," ASME Bound Volume, MED Vol. 11.
- Advisory Committee for ASME MED, 2001-03.
- Long-range Planning Committee for ASME MED, 2001-03.
- At large member, ASME Manufacturing Technical Group, 2001-02.
- Vice Chair, ASME Manufacturing Group, 2002-05.
- Co-Organizer (with H. C. Zhang), symposium for the 2004 ASME IMECE, "Environmental Issues in the Product Life-Cycle," appeared on CD-ROM.
- Member, Merchant Medal Selection Committee, ASME, 2004-06.
- ASME/CRTD Research Committee on Sustainable Products and Processes, 2006-present.
- Climate Change Task Force (CCTF), ASME, 2007-present.
- ASME Manufacturing Technology Group (MTG), Divisions Operations Chair, 2008-present.

### CIRP

- Associate (Corresponding) Member, 2003-present.

- Vice Chair of CIRP Working Group (WG) on Engineering as Collaborative Negotiation, 2006-2008.
- Chair, CIRP Collaborative Working Group (CWG) on “Energy and Resource Efficiency and Effectiveness,” 2009-present.

Other

- Program Committee for the 1994 S. M. Wu Symposium.
- Program Committee for the 1996 S. M. Wu Symposium.
- Session Organizer, Japan-U.S.A. Symposium on Flexible Automation, Boston, Massachusetts, 1996.
- Program Committee for Japan-U.S.A. Symposium on Flexible Automation - 1998, Ohtsu, Japan, July 1998.
- Program Committee for CIRP International Workshop on Modeling of Machining Operations, Atlanta, Georgia, 1998.
- Program Committee for Japan-U.S.A. Symposium on Flexible Automation, Univ. of Michigan, Ann Arbor, Michigan, 2000.
- Program Committee for 7th Mechatronics Forum International Conference, Atlanta, Georgia, September 2000.
- Organizer, Panel Session on Green Manufacturing at National Manufacturing Week, Chicago, Illinois, March 2000.
- Program Committee for 7th Mechatronics Forum International Conference, Atlanta, Georgia, September 2000.
- Program Committee, Third International Conference on Metal Cutting and High Speed Machining, Metz, France, June 2001.
- Organizing Committee, NSF Workshop on Environmentally Benign Manufacturing, September 2001.
- Program Committee for Japan-U.S.A. Symposium on Flexible Automation - 2002, Hiroshima, Japan, 2002.
- Scientific Committee, 4<sup>th</sup> International Conference on Metal Cutting and High Speed Machining, Darmstadt, Germany, March 19-21, 2003.
- Program Committee for Japan-U.S.A. Symposium on Flexible Automation - 2004, Denver, Colorado, 2004.
- Scientific Committee, Fifth International Conference on High Speed Machining, Metz, France, March 2006.
- Program Committee for International Symposium on Flexible Automation, Osaka, Japan, July 2006.
- Scientific Committee for CIRP International Conference on Life Cycle Engineering, Leuven, Belgium, May 31-June 2, 2006.
- Program Committee for CIRP High Performance Machining Conference, Vancouver, British Columbia, June 10-13, 2006.
- Program Committee for International Symposium on Flexible Automation, Osaka, Japan, July 9-14, 2006.
- International Scientific Committee, CIRP International Design Seminar, Kananaskis, Canada, July 16-19, 2006.
- Scientific Committee for CIRP High Speed Machining Conference, San Sebastian, Spain, March 21-22, 2007.
- Scientific Committee for CIRP International Conference on Life Cycle Engineering, Tokyo, Japan, June 10-13, 2007.
- Scientific Committee, International Conference on Agile Manufacturing (ICAM), Durham University, U.K., July 9-11, 2007.
- Scientific Committee, 15<sup>th</sup> CIRP International Conference on Life Cycle Engineering, Sydney, Australia, March 17-19, 2008.
- Scientific Committee, 7<sup>th</sup> International High Speed Machining Conference, Darmstadt, Germany, May 28-29, 2008.
- Chair, Organizing Committee for DeVor-Kapoor Symposium, Urbana, Illinois, October 24-25, 2008.
- Subject Matter Expert to the Sustainability in R&D Group for the Industrial Research Institute (IRI), 2008-2009.

**Journal Editorships Held**

- Associate Technical Editor, Transactions of the American Society of Mechanical Engineers, Journal of Manufacturing Science and Engineering (formerly Journal of Engineering for Industry), 1991-97.

- Guest Editor, International Journal of Engineering Education, 2005-07, two special issues on Educating Students in Sustainable Engineering, Lynn Katz and John Sutherland, editors.
- Regional Editor – International Journal of Sustainable Manufacturing, 2007-present.

#### **Journals, Proceedings, and Organizations Reviewed for**

Transactions of the North American Manufacturing Research Institution of the Society of Manufacturing Engineers (NAMRI/SME); Journal of Engineering for Industry - Transactions of the American Society of Mechanical Engineers; Journal of Manufacturing Science and Engineering - Transactions of the American Society of Mechanical Engineers; Journal of Dynamic Systems, Measurement, and Control - Transactions of the American Society of Mechanical Engineers; Journal of Engineering Materials and Technology - Transactions of the American Society of Mechanical Engineers; International Journal of Machine Tools and Manufacture; Society of Automotive Engineers (SAE) Transactions; Mechatronics; Motorola Six Sigma Research Institute; IEEE Control Systems Magazine; West Educational Publishing Co.; Institute of Industrial Engineers Transactions; Journal of Experimental Techniques; Manufacturing Review; MTU - State of Michigan Research Excellence Fund Program; National Science Foundation; Society of Manufacturing Engineers Foundation; National Institute of Standards and Technology; Addison Wesley Longman; Journal of Manufacturing Systems; RCIM (Research Centre for Integrated Microsystems), iNEER (International Network for Engineering Education & Research), Journal of Cleaner Production, Journal of Manufacturing Processes, Machining Science and Technology, International Conference on Agile Manufacturing (ICAM), International Journal of Production Research, The Israel Science Foundation (ISF)

#### **Public Service**

- Instructor on Statistical Methods for number of organizations, including: Ford, Caterpillar, Borg Warner, GM, Dayco, Stewart-Warner, Sci-Med Life Systems, Hyster, Central Data, and Pioneer Laboratories.
- Instructor, one day course on Statistical Methods for the Central Illinois Section of ASQC, October 27, 1984.
- Coordinator for the Junior Engineering Technical Society (JETS) and Minority Introduction to Engineering (MITE) programs for the Dept. of Mech. and Ind. Engr., Summer 1987 and 1988.
- Instructor, preparatory course for the ASQC Certified Quality Technologist (CQT) Exam, Spring 1991.
- Instructor for course on Statistical Methods for Quality Design and Improvement through the Office of Continuing Engineering Education and the Institute for Competitive Manufacturing of the University of Illinois, August 3-4, 1992.
- Participant in the MTU Career Center's Corporate Advisory Board Discussion Group Meeting, April 1994.
- Participant in the Michigan State Board of Education Summer Institute for the Arts, Sciences, and Technology Career Roundtable, June 29, 1994.
- Participant in MTU Workshop on Diversity, March 16, 1995.
- Participant in the MTU Career Center's Corporate Advisory Board Discussion Group Meeting, April 27, 1995.
- 2-day visit with participants in GM - B.S. in Engineering (Mechanical Engineering Concentration) program.
- Participant in NSF sponsored WTEC Study of Environmentally Benign Manufacturing, Arlington, VA, October 4-5, 1999; Site Visits in Japan, October 15-25, 1999; Site Visits in Europe, April 1-9, 2000; Site Visits in U.S., June 6-7, 2000; Arlington, Virginia, July 11-14, 2000.
- NSF IGERT Workshop on Interdisciplinary Research, Arlington, VA, May 2008.

#### **Additional Information on File**

- Research Proposals
- Citations
- Conference/Meeting Participation