

Vitae

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PART I: LEADERSHIP SUMMARY

Leadership in the Industrial Engineering Profession

Dr. Bidanda has served on the Board of Trustees of the Institute of Industrial Engineers (IIE). In 2006/7, he also served as the Chair of the Council of Industrial Engineering Academic Department Heads (CIEADH). Recognizing the lack of interaction between practitioners and academics in industrial engineering, Dr. Bidanda played a major role (between the years 1996 and 2001) in integrating two separate conferences – the (practitioner based) IIE Solutions Conference with the IE research conference. He has previously served as the Program Chair for both conferences.

Research Stewardship

Over the last five years, doctoral graduates from the IE program at the University of Pittsburgh has joined the faculty of many diverse universities including: the University of Chicago (School of Business), the University of British Columbia, Iowa State University, Purdue University, University of Wisconsin – Madison, University of South Florida, University of Central Florida, Virginia Tech, Oregon State, Auburn University, Wayne State, Oklahoma, Case Western Reserve, etc. This was a result of a planned program of recruitment of high quality students, their mentorship and preparation for academic careers in order to enhance the stature of the IE program at Pitt. He has been the advisor for almost 15% of all Pitt IE doctoral degrees, many of whom are at major universities.

Faculty Development

As department chair, Dr. Bidanda implemented a policy that would reduce the teaching load of untenured faculty members. His vision that resources (funds or graduate student researchers) should not come in the way of any faculty initiatives (research or otherwise), was realized through alumni contributions and corporate foundation donations. He increased the development (or unrestricted) funds in the department by 500% in five years.

Academic Programs & Teaching Effectiveness

As department chair, Dr. Bidanda has played a key role in implementing many innovative academic programs including a flexible doctoral program (directed towards teaching faculty in South America), the establishment of M.S. program with a focus on Global Engineering Leaders, and initiated the Engineering/Business program of the Semester At Sea. During Dr. Bidanda's time as Chair, industrial engineering faculty members have won the school-wide Bietle-Veltri Teaching Award on numerous occasions. As part of an effort to deliver a progressive curriculum, the IE department is the first in the country to require all undergraduates to complete an international experience as part of their graduation requirement.

Innovative Research & Infrastructure Modernization

When Prof. Bidanda joined the University of Pittsburgh in 1987, the School did not have a single manufacturing based laboratory. Over the last 20 years he has worked closely with foundations and the Development Office and been involved with all manufacturing laboratories here by securing over \$7,000,000 in equipment and facilities. These now generate about \$2,000,000 in annual research expenditures. He used these laboratories to publish in the area of Manufacturing Systems, Automation, Reverse Engineering & Rapid Prototyping. He has also been responsible for undertaking a major renovation of facilities as Department Chair including establishing the Computing Laboratory for Innovation & Productivity (CLIP), and the Albert Holzman Learning Center.

Administration and Planning

- Co-Founder & Director, University of Pittsburgh Manufacturing Assistance Center (1993-present)
- Founding Director, Swanson Center for Product Innovation (1997-2001)
- Board of Directors, Doyle Center for Manufacturing Technology (in collaboration with CMU and Pitt), (2002-present)
- Member, Technology Transfer Committee, University of Pittsburgh (2004-2006)
- Pro-tem member (1998-present), University of Pittsburgh Senate Commonwealth Relations Committee that meets with local, state, and federal legislators to discuss funding and academic perspectives.
- Member, Allegheny County Task Force on Air Cargo Security (2001-2003)
- Board of Directors, Pittsburgh Robotics Initiative (2001-2003)
- Engineers for a Sustainable World, (Founding Faculty Advisor: University of Pittsburgh)
- Provost's Advisory Committee for Instructional Excellence at the University of Pittsburgh (2003-2007).
- Planning Committee, University of Pittsburgh Department Chair Retreat (2002, 2004, 2005)
- Organizing Committee, University of Pittsburgh New Department Chair's Orientation (2001, 2003)
- Chair, School of Engineering Promotion & Tenure Committee (1998)
- Director of Conferences, Institute of Industrial Engineers (1999-2001)
- Member, School of Engineering Budget Policy Committee (2000-2005)
- Founding Program Co Chair, Doctoral Colloquium for IIE (2003)

Honors and Awards

- Board of Trustees, Institute of Industrial Engineers ((2006).
- Faculty Honor Roll (2005), School of Engineering, University of Pittsburgh. Award for Outstanding Professor (voted by students).
- Chair, Council of Industrial Engineering Academic Department Heads (CIEADH). This council represents IE department heads across the United States and in many other countries. (May 2005)
- Senior Specialist, (J. Fulbright-Hays Foundation & U.S. Department of State), The Universidad de Montevideo (Fall 2004).
- Carnegie Science Center Award for Higher Education (Honorable Mention) (2004), for developing an innovative, interdisciplinary course in Product Realization along with faculty members from Electrical Engineering & Mechanical Engineering.
- 2002 Fellow of the Institute of Industrial Engineers
- Member of the Board, International Foundation for Production Research (2003-present)
- Associate Editor, Virtual & Physical Prototyping Journal.
- Outstanding Professor Award, Department of Industrial Engineering, University of Pittsburgh, 1996 (voted by students)
- Whiteford Faculty Fellow, (1995-199)
- The Alcoa Manufacturing Systems Faculty Fellow, (1991-1995)
- The Board of Visitors Award - awarded to a single faculty member each year for outstanding Research Productivity and Service, (1993-94)
- Fulton C. Noss Engineering Faculty Fellow, 1989-91

Diversity & Community Development Leadership

- ***Industrial Engineering Department Diversity*** – Almost 40% of our undergraduate student body are women/minorities. In our doctoral program, almost 50% of students are women or minorities. Over 70% of the incoming doctoral class consisted of members from under-represented groups.
- ***Engineers for a Sustainable World: Faculty Advisor (Pittsburgh Chapter- 2004,2005)***. Initiated a Textbook Transfer Program where students in engineering schools have the opportunity to donate their engineering textbooks. Student volunteers collect and consolidate these textbooks at the Department of Industrial Engineering at the University of Pittsburgh. These textbooks are then donated to engineering schools in developing countries that do not have the resources that we take for granted. The program is in its first year and these textbooks were donated to the Faculty of Science & Technology at the University of Botswana.
- ***Organized Diversity Seminars and Diversity Workshops***. These are co-sponsored by the Department of Industrial Engineering and the Office of Diversity and are open to all faculty, staff, and students at the School of Engineering.

PART II: EDUCATION

- Ph.D. Department of Industrial and Management Systems Engineering,
The Pennsylvania State University,
May 1987. (GPA 4.0/4.0)
- M.S. School of Science & Technology
Western Carolina University, North Carolina,
May 1983. (GPA 4.0/4.0)
- B.S. Department of Electrical Engineering, Graduated with Honors.
National Institute of Technology, (ex KREC - Surathkal), University of Mysore).
May 1976.

PART III: EXPERIENCE

Academic Positions

- 2000-present** **Ernest E. Roth Professor & Chairman**, Department of Industrial Engineering, University of Pittsburgh.
- 2008 - present** **Professor of Business Administration**, Katz Graduate School of Business, University of Pittsburgh (secondary appointment: effective, June 2008)
- Fall 2004** **Fulbright Senior Specialist**. Visited and delivered special lectures at the University of Montevideo. Met with 20+ Uruguayan companies to help foster industry-university collaborations within an engineering context.
- Summer 2004** **Professor**, Semester At Sea Program. Taught courses on *Manufacturing & the Global Supply Chain* to engineering and business students drawn from across the United States.
- 1998-present** **Professor**, Department of Industrial Engineering, University of Pittsburgh.
- 1992-1998** **Associate Professor**, Department of Industrial Engineering, University of Pittsburgh. (September 1992 - August 1998)
- 1987-1992** **Assistant Professor**, Department of Industrial Engineering, University of Pittsburgh.)
- 1984-1986** **Research Assistant**, The Pennsylvania State University, University Park, PA
Worked on a variety of industry and research projects funded by the National Science Foundation, Sperry-New Holland Inc., etc.
- 1981-1983** **Teaching Assistant**, The Pennsylvania State University, (1983-1986) and Western Carolina University (1981-1983).

Industry Positions

1993- 2000 Principal

B² Consulting Services
Pittsburgh, PA

Software application development for information systems and wireless applications. Manufacturing Modernization. Clients included Motorola, Symbol Technologies, Canadian Dept of National Defence, UPMC Health Care, Fed Ex Ground, UPS, Pitney Bowes, Duquesne Light, ALCOA, U.S. Airways, Latrobe Steel, Armstrong Industries and over two-dozen small and mid-size companies.

1995- 2000 Consultant

Center for Economic Transformation
A. J. Palumbo School of Business
Duquesne University

Developed and conducted industry workshops on Administrative Process Improvement, Manufacturing Cycle Management, Warehouse Management & Inventory Control, Cycle Counting, and Automated Data Collection

1976-1981 Engineer, Hindustan Aerospace Limited, India, Aero-Engine Toolroom (1978-1981), Production Planning and Control Department (1976-1978). Largest aerospace manufacturer in Asia. Produced British, French, and Russian aircraft and aero-engines.

PART IV: PERSONAL INFORMATION

- United States Citizen (naturalized in 1994).
- Married with two children.
- Spouse is a licensed Psychologist working part-time at Carnegie Mellon University and in private practice.
- Hobbies:
 - Running: New York Marathon (1996), Pittsburgh Marathon (1994,1995).
 - Squash (played in local leagues till about 5 years ago)
 - Climbing: Mt.Fuji (July 2004), Mt. Whitney (August 2006), and Mt. Kilimanjaro (planned in 2009).

PART V: RESEARCH & FUNDRAISING

Summary

- Over \$ 5,000,000 in research funding from federal and state agencies and also from foundations and the corporate sector. Funding sources include the National Science Foundation, the Kresge Foundation, the W.M. Keck Foundation, the U.S. Department of Education, the Pennsylvania Department of Community and Economic Development, the Heinz Endowments, and FedEx Ground.
- Authored/edited four innovative books published by McGraw Hill & Springer.
- Published over 100 refereed journal articles, book chapters, and refereed conference proceedings.
- Invited speaker at many international conferences in Mexico, Portugal, India, Taiwan, etc.
- Program Chair & Proceedings Co Editor, The Industrial Engineering Research Conference, 1998 (Banff, Canada). This is our profession's major national conference for academics.
- Program Chair & Proceedings Co Editor, The Industrial Engineering Solutions Conference, 1999 (Phoenix, Arizona). This is our profession's major national conference for industrial engineering practitioners.
- Research areas of interest: Computer Integrated Manufacturing Systems, Reverse Engineering, Cellular Manufacturing, Production Systems, Shared Manufacturing, Rapid Prototyping, New Product Development.

Grants & Gifts

The following grants and gifts represent those in which Dr. Bidanda was either a PI (Co-PI)

OEM PLM Research Initiative

Source: U.S. Air Force Research Laboratories (sub-contract via Doyle Center for Manufacturing Technology)
2005-07: 185,074

Off-shoring - The New Challenge for Engineering Educators

Source: National Science Foundation
(Joint PI with L. Shuman (PI), M. Fredley, K. Smialek, I. Diamond)
2004-05: \$ 99,433

Agile Robotics Development

Source: The Robotics Foundry (Prime: U.S. Department of Education)
2004 - 2005: \$59,883

A Conceptual Model for Engineering Curriculum Integration and Synthesis, with an Application to Industrial Engineering

Source: National Science Foundation
(Joint PI with B. Norman (PI), M. Besterfield-Sacre, K. Needy,
J. Rajgopal)

2003-05: \$ 100,000

State Employment & Training Demonstration Project

Source: PA Department of Labor through Allegheny County

(Joint PI with D.I. Cleland)

2006-07: \$ 200,000

2003-04: \$ 295,000

2002-03: \$ 345,000

2001-02: \$ 345,000

2000-01: \$ 345,000

Development of a Multi-disciplinary Fellowship Program in Product Realization

Source: US Department of Education

(Joint PI with M. Besterfield-Sacre, L. Lovell (PI), M. Mickle, B. Nnaji, S. Nwosu, L. Shuman)

2003-04: \$ 131,184

2002-03: \$ 115,668

2001-02: \$ 115,428

A Bridge 2 Employment

Source: Three Rivers Employment Service, Inc.

(Joint PI with D.I. Cleland)

2000-01: \$ 16,000

Kresge Foundation Science Initiative

Source: Kresge Foundation

(Joint PI with L. Shuman)

2000-01: \$ 250,000

SGER-Worker Assignment for Cellular Manufacturing Considering Human Issues

Source: National Science Foundation

(Joint PI with K. Needy and B. Norman)

1999-2001: \$ 99,695

Precision Grinding Instructional Laboratory at the Manufacturing Assistance Center

Source: The Pittsburgh Foundation

(Joint PI with D.I. Cleland)

1998-2000: \$ 100,950

Establishment of a Precision Grinding Instructional Lab at the MAC

Source: PA Department of Community and Economic Development

(Joint PI with D.I. Cleland)

1998-2000: \$ 211,300

New Product Development Initiative

Source: General Motors Foundation
(Joint PI with L. Shuman)
1998-2003: \$ 100,000

Evaluation of Training Needs of Western Pennsylvania Manufacturers

Source: The Heinz Endowments
(Joint PI with D.I. Cleland)
1998-99: \$ 20,000

Interactive Learning and Virtual Laboratory for Manufacturing

Source: Ben Franklin Technology Center of Western PA
(Joint PI with K. Needy)
1997-98: \$ 21,465

Development of Lapping Standards & Lapping Expert Advisor

Source: United States Products Inc., Pittsburgh PA
Ben Franklin Technology Center of Western PA
1997-98: \$ 20,157
1998-99: \$ 49,741

Rapid Design of Automated Storage & Retrieval Systems

Source: Universal Technology Inc., Pittsburgh PA
Ben Franklin Technology Center of Western PA
1997-98: \$ 52,155

Reverse Engineering & Rapid Prototyping Laboratory

Source: W. M. Keck Foundation
(Joint PI with B. Nnaji)
1997-2000: \$ 750,000

Process and Cost Control for the Plastics Recycling Industry

Source: Ben Franklin Technology Center of Western PA
(Joint PI with K. Needy)
1996-97: \$ 12,225

Modernizing Manufacturing Systems Engineering at the University of Pittsburgh

Source: Society of Manufacturing Engineers
(Joint PI with K. Needy)
1996-97: \$ 162,000

Manufacturing Extension Partnership - Technical Assistance Projects to Small & Medium Size Organizations

Source: National Institute of Standards & Technology
South West Pennsylvania Industrial Resource Center

(Joint PI with D.I. Cleland)

Year: 1996-97: \$ 42,000
1995-96: \$ 100,000
1994-95: \$ 110,000

Manufacturing Assistance Center Projects

(Joint PI with D.I. Cleland)

Source: Integra (National City) Bank Foundation

1995-98: \$ 60,000

Source: PNC Bank Foundation

1996-98: \$ 50,000

Source: Equitable Resources Foundation

1996-98: \$ 15,000

Source: PNC Bank Corp.

1996-98: \$ 50,000

Manufacturing Assistance Center Project, Continuation Project

Source: South Western PA Regional Development Council Appalachian
Regional Commission Area Development Program

(Joint PI with D.I. Cleland)

1995-96: \$ 139,426

Manufacturing Assistance Center, University of Pittsburgh

Source: PA Department of Commerce

(Joint with D.I. Cleland)

1995-96: \$ 200,000

Computer Aided Rapid Diagnostic System for Blow Molding Operations

Source: Double R Enterprises
Ben Franklin Challenge Grant Program

(Joint PI with R. Billo)

Year: 1996-97: \$ 77,516
1995-96: \$ 55,463
1994-95: \$ 40,000

Manufacturing Systems Technology Transfer Project

Source: Ben Franklin Challenge Grant Program
(Joint PI with D.I. Cleland)

Year(s):1997-98: \$ 50,000
1996-97: \$ 62,000
1995-96: \$ 75,500
1994-95: \$ 125,000
1993-94: \$ 100,000
1992-93: \$ 100,000

TalkMOST - Automated Voice Recognition for Work Measurement Systems

Source: H.B.Maynard & Company
Vocollect Inc.
Ben Franklin Challenge Grant Program
(Joint PI with R. Billo)

Year: 1996-97: \$ 57,423
1995-96: \$ 93,008
1994-95: \$ 98,106

Human Issues in Technology Implementation

Source: U.S. Air Force (Wright Patterson AFB)
Systems Exploration Inc. (Joint P.I. with D. Cleland)

Year(s):1993-94: \$ 97,000

Manufacturing Assistance Center Project

Source: U.S. Department of Commerce (EDA)
(Joint PI with D.I. Cleland)

Year(s) 1992-93: \$ 903,706

Automated Data Collection & Identification Laboratory

Source: National Science Foundation
AIM USA, Auto ID manufacturers (e.g. Symbol Technologies,
Monarch Marking, UPS, Zebra, etc.)
(Joint PI with R. Billo)

Year(s) 1992-95: \$ 250,000 (approx 92,000 from NSF, balance
from equipment manufacturers)

Feature Based Design of Countersink Tools

Source: Accumet Inc. and Ben Franklin Implementation Grant
Program
(Joint PI with R. Billo)

Year(s):1991-92: \$ 8,000

Deterministic Setup for the Economical Manufacture of Positive Rake Milling Cutters

Source: Accumet Inc., and Ben Franklin Implementation Grant
Program
(Joint PI with R. Billo)

Year(s):1991-92: \$ 5,053

Process Design for the Manufacture of Solenoid Actuated Directional Control Valves

Source: Frank Donnelly Inc. and Ben Franklin Implementation Grant
Program (Joint PI with R. Billo)

Year(s):1991-92: \$ 5,052

Manufacturing Systems Technology Transfer Workshops

Source: Ben Franklin Challenge Grant Program
(Joint PI with D.I. Cleland)
Year(s):1991-92: \$ 67,124

A Rule Based System for Sequence Dependent Setups

Source: Superior Valve Inc., Washington, PA
and Ben Franklin Challenge Grant Program
(Joint PI with J. Rajgopal)
Year(s):1991-92: \$ 71,573

Off-line Programming for Robots in Spray Glazing

Source: Eljer Plumbingware Inc., Ford City, PA
and Ben-Franklin Challenge Grant Program
Year(s):1991-92: \$ 51,044

Travel Grant to study Small & Medium Manufacturing Organizations in Taiwan

Source: Chinese Studies Program, University of Pittsburgh
Year(s):1991-92: \$ 1,500

A Programmable Automated Shoe-Floor Tester to Evaluate Floor Slipperiness

Source: University of Pittsburgh Small Grants Program
(Joint with PI with M. Redfern, School of Medicine)
Year(s):1990-91: \$ 11,122

Development of a Programmable Integrated Glaze Sprayer

Source: Eljer Plumbingware Inc., Ford City, PA
and Ben-Franklin Challenge Grant Program
Year(s):1989-90: \$100,033
1990-91: \$ 95,966

Feasibility Study for a Flexible Manufacturing System

Source: U.S. Dept. of Commerce - Economic Development Administration
(Joint PI with D.I. Cleland)
Year(s):1989-90: \$93,000

Society of Manufacturing Engineers: Manufacturing Engineering Education Grant for Capital Equipment and Faculty Development

Source: Society of Manufacturing Engineers
Year(s):1989-90: \$ 25,290

DataBase Development of CAD-Cephalometric Data

Source: Ben Franklin Challenge Grant Program
(Joint PI with G. Patterson, M.D., D.M.D., School of Dental Medicine)
Year(s):1987-88: \$ 30,000
1988-89: \$ 75,000

Publications

Authored/Edited Books

PROJECT MANAGEMENT CIRCA 2025, Project Management Institute, (expected: December 2008. (Editors: David Cleland and Bopaya Bidanda)

REVERSE ENGINEERING FOR MEDICAL, MANUFACTURING AND SECURITY APPLICATIONS, Springer Science Publishers, (expected: March 2009). (Editors: Bopaya Bidanda and Paulo Bartolo).

VIRTUAL PROTOTYPING & BIO-MANUFACTURING IN MEDICAL APPLICATIONS, Springer Science Publishers, 2007. (Editors: Bopaya Bidanda and Paulo Bartolo).

BIO-MATERIALS AND PROTOTYPING APPLICATIONS IN MEDICINE, under preparation for publication by Springer Science Publishers, 2007. (Editors: Paulo Bartolo and Bopaya Bidanda).

THE AUTOMATED FACTORY HANDBOOK: TECHNOLOGY AND MANAGEMENT, Tab Professional and Reference Books (Division of McGraw-Hill), Blue Ridge Summit, PA, 1990, Co-Editor with D.I. Cleland.

SHARED MANUFACTURING SYSTEMS: A GLOBAL PERSPECTIVE, McGraw-Hill Book Company, New York, 1993. Co-Author with D.I. Cleland & S. Dharwadkar.

Refereed Journals

Hu G., Wang L. and Bidanda B., A Multi-objective Model for Project Portfolio Selection to Implement Lean and Six Sigma Concepts, **International Journal of Production Research (In Press)**.

Bunce, M, Wang, L., and Bidanda B., Leveraging Six Sigma with Industrial Engineering tools in Crateless Retort Production, **International Journal of Production Research (In Press)**.

A. Dhawan, S. Srinivasan, P. Rajib and Bidanda B., Minimizing total cost and regular and emergency sources: a neuro-dynamic programming approach, **International Journal of Production Research (In Press)**

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Bidanda B., Ariyawongrat P., Needy K.L., Norman B.A, and Tharmmaphornphilas W., Human Related Issues in Manufacturing Cell Design, Implementation, and Operation: A Review & Survey. (2005), **International Journal of Computers & Industrial Engineering** (48), pp 507-523.

Bidanda B. and Bartolo P. (2004), Guest Editorial – Product Development, **International Journal of Product Development**, Vol. 1, No.2.

Bidanda B., and Desai S., (2004), Strategic planning models for prototyping and product development centers., **International Journal of Product Development**, Vol. 1., No.2.

Needy K.L., Nachtmann H., Roztocki N., Warner R.N., Bidanda B., (2003) Implementing Activity Based Costing Systems in Small Manufacturing Firms: A Field Study, **Engineering Management Journal**, 15(1), 3-10.

Needy, K. L., B. A. Norman, B. Bidanda, P. Ariyawongrat, W. Tharmmaphornphilas, and R. C. Warner, R. C., (2002), Assessing human capital: A lean manufacturing example, **Engineering Management Journal**, 14(3), 35-39.

Norman B.A., Tharmmaphornphilas, W., Needy K.L., Bidanda B., and Warner R.C. (2002), Worker Assignment in cellular manufacturing considering technical and human skills, **International Journal of Production Research**, 40(6), 1479-1492.

Carnahan, B., Warner, R. C., Bidanda, B., & Needy, K. L. (2000). Predicted glass furnace output using statistical and neural computing methods. **International Journal of Production Research**, 38 (6), 1255-1269.

Needy, K. L., Bidanda, B., & Gulsen, M. (2000). A model for the development, assessment, and validation of activity based costing systems for small manufacturers. **Engineering Management Journal**, 12 (1), 31-38.

Cohen Y., Bidanda B., and Billo R., Accelerating the Generation of Work Measurement Standards through Automatic Speech Recognition: A Laboratory Study, **International Journal of Production Research**. Vol. 36, No. 10, pp 2701-2715, 1998.

Petri K., Billo R., Bidanda B., A Neural Network Process Model for Abrasive Flow Machining Operations, **Journal of Manufacturing Systems**, Vol. 17, No. 1, pp 52-64, 1998.

Bidanda B., Kadidal M., and Billo R., "Development of an Intelligent Castability and Cost Estimation System", **International Journal of Production Research**, Vol. 36, No. 2, pp 547-568, 1998.

Billo R., Bidanda B., Cohen Y., Fei C.Y., Petri K. L., "Performance Standards and Testing of Two-Dimensional Bar Code Systems for Overhead Scanning, **Journal of Manufacturing Systems**, 15(5), pp 305-315, 1996.

Wilhelm M., Smith A.E., Bidanda B., "Integrating an Expert System and a Neural Network for Process Planning, **Engineering Design and Automation**, 1(4),259-269,1996

Cleland D., Bidanda B., and Chung C., "Human Issues in Technology Implementation - Part 2", **Industrial Management**, Vol. 37, No.5, pp 15-16, 1996.

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Bidanda B., and Billo R., "Parametric Design and NC Code Generation of Countersink Cutting Tools", **International Journal of Computer Integrated Manufacturing**, Vol. 9, No.2, pp 105-112, 1996.

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Benavides Sergio, Smith A., and Bidanda B., "Reducing Waste in Casting with a Predictive Neural Model", **Journal of Intelligent Manufacturing**, Vol. 5, pp 277-286, 1994.

Bidanda B., Rubinovitz J., and Narayanan V., "CAD-Based Interactive Off-line Programming of Spray Glazing Robots", **International Journal of Computer Integrated Manufacturing**, Vol 6., No. 6, pp 357-365, 1993.

Bidanda B. & Hosni Y., "Reverse Engineering and its Relevance to Industrial Engineering: A Critical Overview", **Computers and Industrial Engineering Journal**, Vol.26, No.2, pp 343-348, 1994.

Motavalli S., and Bidanda B., "Modular Software Development for Digitizing Data Analysis in Reverse Engineering", **Computers and Industrial Engineering Journal**, Vol.26, No.2, pp 395-410, 1994.

Bidanda, B., and Redfern, M., "Development of a Microcomputer Based Slip Tester," accepted (but not published), **Computers and Industrial Engineering Journal**.

Redfern, M. and Bidanda, B., "Slip Resistance of the Shoe-Floor Interface Under Biomechanically Relevant Conditions," **Ergonomics**, Vol. 37, No. 3, pp 511-524, 1994.

Ben-Brahim S., Smith A., and Bidanda B., "Relating Product Specifications and Performance Data with a Neural Network Model for Design Improvement", **Journal of Intelligent Manufacturing**, Vol. 4, pp 367-374, 1993.

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Book Chapters

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Doctoral Students Advised

Ph.D. -- Primary or co-advisor

Guiping Hu (will graduate in 2009). Working in the area of Sustainability and manufacturing operations.

Shengnan, Wu (co advisor with L. Shuman), will graduate in 2008. Working in the area of Disaster Simulation.

Arisoy, Ozlem, 2007 (co advisor with L. Shuman). *Integrated Decision Making for Global Networks with Off-shoring.*

Lai, Jyh-Pang. 2006. (co advisor with L. Shuman). *Simulation (Optimization) of Large-Scale Distribution Facilities.*

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Puthongsiriporn, Thanit. 2002. *Co-operative Query Answering for Approximate Answers with Nearness measures in Hierarchical structural information systems.*

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PART VI: TEACHING

Innovative Curriculum Development

- ABET (Accreditation Board for Engineering & Technology) visitor for about a decade. Visited many engineering schools as part of accreditation visits. Outside of his role as an ABET visitor, he has been an invited external evaluator for many engineering programs including the University of Oklahoma, Wayne State University, and California State University (Hayward).
- Developed an innovative flexible PhD. Program in Industrial Engineering that has been in place for 5+ years now.
- Developed an MBA-MSIE (Master of Science in Industrial Engineering) degree that is being offered jointly with the Katz Graduate School of Business.
- Developed an innovative interdisciplinary curriculum in Product Realization both at the undergraduate and graduate level. This effort was recently honored and received an award from the Carnegie Science Center.
- Developed and taught the first engineering courses to be offered on-board a ship (Summer 2004). This was implemented as part of the Semester at Sea Engineering Program (www.semesteratsea.com) titled **Manufacturing & the Global Supply Chain in the Pacific Rim**. These courses were taken by 31 students from 15 different universities. As part of the program, students visited factories in Alaska, Russia, Korea, China, Hong Kong, Vietnam, Taiwan, and Japan. This program has now been institutionalized by the Semester and Sea and the University of Virginia

Courses Developed & Taught

Undergraduate Courses

ENGR 1625	Engineering & Business Collaborations in India
IE/BUSQUOM 1662	Manufacturing Cultures in the Pacific Rim
IE 1661 -	Global Manufacturing Systems Engineering
ENGR 1050-	Product Realization
IE 1057 -	Computer Aided Manufacturing
IE 1060 -	Automated Data Collection Projects & Techniques
IE 1052 -	Manufacturing Processes & Systems Analysis
IE 1089 -	Reverse Engineering & Rapid Prototyping

Graduate Courses

IE 2000 -	Introduction to Industrial Engineering (taught)
IE 2051 -	Computer Integrated Manufacturing Systems
IE 3054 -	Industrial Robotic Applications
IE 3052 -	Computer Graphics and Machine Vision
IE 2006 -	Introduction to Manufacturing Systems
IE 3050 -	Advanced Topics in Manufacturing (course focused on developing researchable ideas from relevant industrial problems)
IE 3096 -	Teaching Practicum

Undergraduate Courses Taught

IE 1090 -	Senior Projects
IE 1040 -	Engineering Economic Analysis
IE 1051 -	Computer Aided Design
ENGR 0010-	Engineering Analysis

Seminars Organized

IE 1085 -	Undergraduate Seminar (1988-93, 2005-present)
IE 3095-	Graduate Seminar (1988-94)

Infrastructure Modernization & Center/Laboratory Development

As part of his consulting activities, he has been the lead industrial engineer for a variety of large construction projects ranging from the largest military project in Canada (the modernization of the Fleet Maintenance Facility in Victoria) to the establishment of a luxury watch re-manufacturing facility in mid-town Manhattan.

His infrastructure modernization efforts at Pitt include:

The Swanson Center for New Product Innovation: He helped found and identify the initial direction for the Center for New Product Development in 1999. As the primary person in this effort, he secured funding from a variety of funding sources including the Keck Foundation, the Kresge Foundation, and the US Department of Education. The three laboratories that he helped establish were the Design Laboratory, the Rapid Prototyping & Reverse Engineering Laboratory and the Rapid Manufacturing Laboratory. After establishing this Center, he became Department Chair and a faculty member from Mechanical Engineering was appointed to run the newly established set of laboratories. A MEMS laboratory was subsequently added. Over 200 industrial projects have been completed with over \$5 million in investment from a variety of funding sources including private donors, federal agencies, and foundations.

The Manufacturing Assistance Center is a 40,000 square foot technology transfer center equipped with a skilled staff and a working, state-of-the-art factory. This project was initially funded to complete a study on manufacturing needs in the region by the U.S. Department of Commerce. The exploratory study indicated a strong need for Shared Manufacturing Centers in the U.S. and resulted in the establishment of a Manufacturing Assistance Center (MAC) within the School of Engineering with a \$ 950,000 grant from the U.S. Department of Commerce. From an initial staff of 2 Co Directors, he now has 9 full-time staff, a budget of approximately \$600,000 and an organization that continues to be a source of ongoing funding, incoming revenue, and favorable national and regional publicity from the academic and industrial community.

The Automated Data Collection Laboratory. Soon after attending a workshop on *Automated Identification* at Ohio University, he recognized the potential for pioneering research in this rapidly growing technology, and the opportunity for Pitt to be recognized as a national leader in the area. A proposal to the National Science Foundation resulted in the University of Pittsburgh being awarded the first NSF sponsored Automated Data Collection (ADC) Laboratory in the country. Major research projects completed in these labs have changed our everyday lives and range from a computerized system for analyzing bar codes to the first independent research effort in establishing performance standards for the new 2D Bar Codes (that have now become an integral part of package delivery systems).

PART VII: SERVICE

Professional & Service Activities

Institute of Industrial Engineers

Student Interaction

Faculty Advisor, Student Chapter, IIE - During this period, the chapter was ranked nationally for first time in the Chapter's history as follows:

2005-present

1992-93: Awarded Wyllys G. Stanton Award (2nd place nationally)

1991-92: Awarded 7th place nationally

1990-91: Awarded 13th place nationally

1988-89: Awarded 11th place nationally

1987-88: Awarded 12th place nationally

Regional Professional Activities

The local Senior Chapter experienced a difficult period where membership had declined drastically, attendance at monthly meetings was minimal, and the chapter was close to folding. On the request of the IE faculty, he got involved as follows:

Director, Institute of Industrial Engineers - Pittsburgh Chapter 1995-97, 1998-1999

President, Institute of Industrial Engineers - Pittsburgh Chapter 1994-95

Vice - President, Institute of Industrial Engineers - Pittsburgh Chapter 1993-94.

As President and Vice-President, he helped install a young, enthusiastic team of IEs in key positions within the Chapter, and was recently told by IIE staff that it is now considered one of the most active Chapters in the nation.

National level

ABET Visitor for Industrial Engineering Program Accreditation (1996 - present)

IIE Outstanding Dissertation Award, Evaluation Committee - 1998

First IE Doctoral Colloquium, Developed the concept. Then planned and implemented the colloquium in 2001. It is now one of the most popular sessions at our national conference.

Executive Committee, IE Research Conference, 2002-present

Chair, Institute of Industrial Engineers Solutions Conference, Phoenix, 1999.

Co-Chair, Institute of Industrial Engineers Solutions Conference, Banff, 1998

Co-Editor, Industrial Engineering Research Conference (IERC) Proc., Miami, 1997.

Co-Editor, Industrial Engineering Research Conference (IERC) Proc., Minnesota, 1996.

Program Committee & Session Chair, IERC, 1996, 1997.

REVIEWER: ASME Transactions - Journal of Engineering for Industry, Natural Sciences and Engineering Research Council of Canada, IIE Transactions, Journal of Intelligent Manufacturing, Computers and Industrial Engineering Journal, Journal of Design & Manufacturing, International Journal of CIM, International Journal of Flexible Manufacturing Systems, National Science Foundation: OR & Production Systems Panel, Ben-Franklin Challenge and Seed Grant Review Panels, John Wiley & Sons, Addison Wesley Publishing Company, Chapman & Hall.

Memberships

- Fellow, Institute of Industrial Engineers
- Executive Committee Member & Past-President, Council of Industrial Engineering Academic Department Heads
- Senior Member, Society of Manufacturing Engineers
- Member, American Society for Engineering Education

Consulting Engagements

- U.S. Naval Surface Warfare Center, Carderock, MD.
- David Yurman Inc. NYC.
- Zippo, Bradford PA.
- The Pittsburgh Post-Gazette (labor standards & staffing). Pittsburgh PA.
- National Energy Technology Lab (NETL), US Department of Energy
- Department of National Defence, Canada, Ottawa, Canada: Specialist consultant in Manufacturing Systems in a major, multi-year shipyard re-engineering project that was Canada's largest military project.
- Fedex Ground
- Eaton Cutler Hammer, Beaver PA.
- Mid.Tec Corporation of St. Louis (sub-contract to the U.S.Air Force)
- US Airways, Pittsburgh PA
- Nova Chemicals, Monaca, PA
- Thermal Industries Inc., Murrysville, PA.
- Fox Chapel School District, Fox Chapel, PA
- Extrude Hone Inc, Irwin, PA
- Pitney Bowes, Danbury, Connecticut
- EMESS Lighting Inc., Ellwood City, PA
- MetPlas Inc., Natrona Heights, PA
- Latrobe Steel Inc., Latrobe, PA
- Schroeder Industries Inc., McKees Rocks, PA
- W.R. Case Inc, Bradford, PA
- E.A. Fischione & Co., Inc., Export, PA
- ServiStar Inc, Butler, PA
- Little Earth Productions Inc., Pittsburgh PA
- Cartier Inc., and Richemont of North America (manufacturer of luxury watches including Cartier, Vacheron Constantin, Piaget)
- US Naval Ship Yards at Portsmouth (Maine) and Pearl Harbor (Hawaii) (sub-contract from Unity Inc.)
- Armstrong Industries, Beaver PA.
- Bacharach Industries, RIDC Park, PA.
- Calgon Carbon, Pittsburgh PA.
- Gentile Manufacturing, Kittaning, PA.
- Robinson Industries, Zelionople, PA
- Symbol Technologies, Long Island, NY.
- The Horton Company, Pittsburgh PA.

- Ventana Plastics, Export PA.