

## **Dr. John L. Irwin**

### **Curriculum Vitae**

58555 Hwy US 41  
Kearsarge, MI 49913  
(906) 337-2527

### **Education**

Wayne State University, Detroit, MI, 2002-2005 [www.wsu.edu](http://www.wsu.edu)

- **EdD** Curriculum and Instruction
- Dissertation: “Engaging Teachers and Students in Problem-based Simulation Activities”

Ferris State University, Big Rapids, MI, 1990–1992 [www.ferris.edu](http://www.ferris.edu)

- **MS** Occupation Education, Training for Business & Industry.
- Graduated with highest distinction.

Ferris State University, Big Rapids, MI, 1982–1984 [www.ferris.edu](http://www.ferris.edu)

- **BS** Trade-Technical Teacher Education, Vocational Drafting.
- Athletic Coaching & Tool Design minors.
- Graduated with highest distinction.

Michigan Technological University, Houghton, MI, 1980–1982 [www.mtu.edu](http://www.mtu.edu)

- **AAS** Mechanical Design Engineering Technology.
- Graduated with honor.

### **Teaching Certifications**

Continuing Certificate, State of Michigan, Department of Education, Grades 7-8 All Subjects,  
Grades 9-12 Vocational Technical and Physical Education, October 1991.

Full Vocational Authorization, State of Michigan, Department of Education, Drafting,  
November 1991.

### **Teaching Positions**

Associate Professor, Mechanical Engineering Technology, 2006-present, Michigan Technological University, Houghton, MI <http://www.tech.mtu.edu/TMET/index.html>

- Chair, Industrial Technology, 2006-present.  
<http://www.tech.mtu.edu/ITECH/index.html>

Professor, Design Engineering Technology, 1993–2006, Mott Community College, Flint, MI [http://www.mcc.edu/3\\_academics/tt\\_design\\_engineering.shtml](http://www.mcc.edu/3_academics/tt_design_engineering.shtml)

- Manufacturing Simulation Technology Program Coordinator 2002-2006.  
[http://www.mcc.edu/3\\_academics/tt\\_man\\_sim.shtml](http://www.mcc.edu/3_academics/tt_man_sim.shtml)
- Design Engineering Technology Program Coordinator 1998-2002.
- MCC High School Design Contest Coordinator 1995-2002.

- MCC Design Engineering Student Club Advisor 1995-1998.
- MCC Men's Varsity Cross Country Head Coach 1997-2006.
- MCC Track & Field Club Advisor 2004-2006.

Adjunct Professor, Teacher Education, 2004-2006, Ferris State University Southeast Michigan Regional Center, Flint, MI

[http://www.ferris.edu/htmls/colleges/educatio/dept\\_program.cfm?DepartmentID=1](http://www.ferris.edu/htmls/colleges/educatio/dept_program.cfm?DepartmentID=1)

- Teaching courses in Instructional Planning and Practice, Pre-Student Teaching Field Experience, Curriculum Design and Evaluation, Foundations of Education, and Principles of Teaching and Learning.

Engineering/Computer Drafting Instructor 1988–1993, Averill Career Opportunities Center, Saginaw, MI

[http://www.saginawcareercomplex.com/career\\_pathways/technical\\_engineering\\_systems.asp](http://www.saginawcareercomplex.com/career_pathways/technical_engineering_systems.asp)

- VICA student advisor 1989-1993.
- Novell network system administrator 1990-93.
- Adult education evening course instructor 1989-93.

Track and Field Head Coach, South Junior High School, Saginaw, MI, 1990-93.

## **Grant Research and Administrative Positions**

Developed curriculum, coordinated, and delivered (3) NSF funded 3-day workshops in Flint, MI and Dayton, Ohio at Mott Community College and Sinclair Community College, “Improving Design Education using Simulation Workshop”, May-June, 2006 utilizing Dynamic Designer and Inventor software. <http://www.design-simulation.com/DDM/index.php>

Project Manager for a National Science Foundation grant awarded to Mott Community College to enhance the Design Engineering Technology curriculum using problem-based learning computer simulation activities, 2002-06.

Web site developer for dissemination of NSF curriculum materials available at: <http://www.nsfsim.mcc.edu/>

Curriculum development team member for a NSF grant awarded to Mott Community College to develop an Associate Degree in Manufacturing Simulation Technology, 2000-02. [http://www.mcc.edu/3\\_academics/tt\\_man\\_sim.shtml](http://www.mcc.edu/3_academics/tt_man_sim.shtml)

Curriculum development team member for the Design Engineering Technology department transition to the Mott Community College Regional Technology MTEC Center, 2002-03. [http://www.mcc.edu/3\\_academics/tt\\_design\\_engineering.shtml](http://www.mcc.edu/3_academics/tt_design_engineering.shtml)

## **Industrial Experience**

Education and Training Service, Irwin Technical Training Inc., Saginaw, MI, 1994- present.

- Training for industry in topics of Total Quality Management, Blueprint Reading, Shop Mathematics, Descriptive Geometry, Civil Engineering, AutoCAD, and Unigraphics.

- Performed training over the years for companies such as Thomson Saginaw Ball Screw Company, Atlas Corporation, Wade Trim Corp., Troy Design, General Motors Corp., Spicer Group, and numerous others.

Computer Simulation Consultant, ICRC Engineering, TACOM/TARDEC, Warren, MI, August, 1998. <http://www.icrcsolutions.com/>, <http://tardec.army.mil/>, <http://www.tacom.army.mil/main/non-flashhome.html>

Part-time Manufacturing Tool Designer, Thomson Saginaw Ball Screw Company, Saginaw, MI, 1989-1993.

[http://www.danahermotion.com/products/product\\_detail.php?parent\\_id=209](http://www.danahermotion.com/products/product_detail.php?parent_id=209)

- Unigraphics design, layout and drafting of jigs, fixtures and gages for manufacturing Ball Screw joints.

Senior Designer, 1986–1988, Sigma Air Conditioning Inc. (presently known as: AITransit <http://www.aitransit.com/index.html>), Chicago, Illinois

- Supervising design department.
- AutoCAD design, layout and detailing air conditioning components for transportation industries.

Layout Drafter, 1984–1986, Thermotron Industries, <http://www.thermotron.com/> Holland, MI

- Design, layout and drafting of environmental simulation chambers.

## Research

Dissertation and Thesis:

Irwin, J., “Engaging Teachers and Students in Problem-based Simulation Activities”, EdD Dissertation, Wayne State University, DAI-A 66/11, p.161, May 2006.

Irwin, J., “An Investigation into CADD in the Saginaw area from the Viewpoint of Mechanical Drafting and Design Employers”, MS Thesis, Ferris State University, ERIC, 1992.

Conference Proceedings:

Irwin, J. (2006). *MTU MICUP Program and Industrial Technology Recruitment Efforts - Advancing Innovations 2006 Presentation*, Advancing Innovations in Engineering Technology: Ideas for a New Age.

Irwin, J. & Moseley, J., “Engaging Teachers and Students in Problem-based Simulation Activities”, 2006 ASEE Annual Conference & Exposition, Chicago, Illinois, June 2006.

Irwin, J., “A methodology for developing Unigraphics parametric assemblies for product design, tool design, and analysis”, 2002 ASEE Annual Conference and Exposition, Ontario, Canada, June 2002.

#### Course Workbooks:

Irwin, J. & Jackson, E., "Ergonomic Simulation Module", Mott Community College, 2005.

Irwin J., Wagner, M., "Introduction to Work Cell Simulation, Robotics and Simulation, and Advanced Topics in Simulation Modules", Mott Community College, 2002.

Irwin, J. & Hughes, D., "Blueprint Reading Telecourse Workbook", Mott Community College, 1994.

#### National Conference Presentations:

2006 Advancing Innovations in Engineering Technology: Ideas for a New Age, Tampa, Florida, November, 2006, "MTU MICUP Program and Industrial Technology Recruitment Efforts - Advancing Innovations 2006 Presentation" <http://www.njcate.org/>

2006 ASEE Annual Conference & Exposition, Chicago, Illinois, June 2006, "Engaging Teachers and Students in Problem-based Simulation Activities" <http://www.asee.org/conferences/annual/2006/>

2006 Innovations Conference, Atlanta, Georgia, March 2006, "Engaging Teachers and Students in Problem-based Simulation Activities" <http://www.league.org/i2006/>

ATEA 43rd National Conference on Technical Education, Louisville, Kentucky, March 2006, "Engaging Teachers and Students in Problem-based Simulation Activities" <http://www.ateaonline.org/>

2005 Advanced Innovations in Engineering Technology, San Diego, California, October 2005, "Engaging Teachers and Students in Problem-based Simulation Activities" <http://www.njcate.org/>

2004 Conference for Information Technology, Tampa, Florida, November 2004, "Manufacturing Simulation Technology."

2004 NSF ATE PI Conference, Washington DC, October 2004, "Design modules with imbedded simulations."

2003 NSF ATE PI Conference, Washington DC, October 2003, "Design modules with imbedded simulations."

2002 ASEE Annual Conference and Exposition, Ontario, Canada, June 2002, "A methodology for developing Unigraphics parametric assemblies for product design, tool design, and analysis."

Design Manufacturing Alliance Conference, Flint, Michigan, March 2002, "Problem-based simulation activities developed for threads, cams and gears"

PLM Solutions Unigraphics User Group Annual Conference, Orlando, Florida, May 2001, "A methodology for developing Unigraphics parametric assemblies for product design, tool design, and analysis."

#### Professional Associations, Committees and Awards

Member, American Technical Education association, 2006-present. <http://www.ateaonline.org>

Member, National Association of Industrial Technology, 2006-present. <http://www.nait.org>

Member, American Society for Engineering Education, 2001-2003, 2006-present. <http://www.asee.org/>

National Science Olympiad, Region V Robotics Competition Judge, Flint, MI, 2002-04.

Chairperson, Technology Department Travel Committee, Mott Community College, 2000-06.

Co-Chairperson, Committee for Excellence in Teaching and Learning, Mott Community College, 2000-04.  
Innovations Award, MCC, \$500.00, Lego Mechanisms for Engineering Drawing II, 2000.  
Chairperson, MCCEA Elections Committee, Mott Community College, 1998-2000.  
Innovations Award, MCC, \$500.00, High School Design & Drafting Competition, 1995.  
President, Vocational Industrial Clubs of America Advisors, Averill Career Opportunities Center, 1993.  
Outstanding Education Student award, Delta Kappa, Ferris State University, 1985.  
Vice President Michigan Occupational Education Association student chapter, Ferris State University, 1984.  
Treasurer, Mechanical Engineering Technology Society student chapter, Michigan Technological University, 1982.

### **Additional Training and Professional Experience**

Stratasys, Insight/FDM Training, Physical Prototyping Machine, Flint, MI, 2002.  
NSF Grant Showcase Exhibitor, ASEE Annual Conference, Albuquerque, NM, 2001.  
Inservice/Industry Training, Winter Simulation Conference, Orlando, FL, 2000.  
WIDS Basic and Coach Workshops, Wisconsin Instructional Design System, 1999 & 2000.  
Deneb Robotics, IGRIP robotic simulation software training, Detroit, MI, 1998.  
Inservice/Industry Training, Simulation & Education Conference, Orlando, FL, 1998.  
AEC Systems, Parametric Solid Modeling Seminar, Detroit, MI, 1998.  
Workcell Simulation, Sinclair Community College, Dayton, Ohio, 1998.  
Process Improvement through Modeling and Simulation, ASQC, Orlando, Florida, 1997.  
Autodesk University, 3D Visualization Seminar, Chicago, IL, 1997.  
Envisions Inc., Basic Unigraphics, Detroit, MI 1995.  
Trends in Occupational Studies Conference, Grand Rapids, MI, 1995.  
Total Quality Improvement, Edward Deming, Saginaw, MI, 1992.

### **References**

George Gutgesell, DET Professor, Mott Community College, 1401 East Court Street, Flint, MI, 48503, [ggutgesell@mcc.edu](mailto:ggutgesell@mcc.edu)  
Martin Wagner, Workforce Development Grant Project Manager, Mott Community College, 1401 East Court Street, Flint, MI, 48503. [martin.wagner@mcc.edu](mailto:martin.wagner@mcc.edu)  
Loralei Callcut, Director, Ferris State University, Southeast Michigan Regional Center, 1401 East Court Street, Flint, MI, 48503, [loralei\\_callcut@ferris.edu](mailto:loralei_callcut@ferris.edu)  
James L. Moseley, Associate Professor, Wayne State University, University Health Center 9D, 4201 St Antoine, Detroit, MI, 48201. [jmosele@med.wayne.edu](mailto:jmosele@med.wayne.edu)  
JoAnn Snyder, Director, College of Education, Wayne State University, 221 Education Building, Detroit, MI 48202. [aa5235@wayne.edu](mailto:aa5235@wayne.edu)