

April 2024

VITA

I. PERSONAL DATA

Name: David P. Sly
Title: Director, Engineering Entre. Initiative
ISU Rank: Teaching Professor
ISU Department: Industrial and Manufacturing Systems Engineering
ISU Office Address/Phone: 3031 Black Engineering Building/515-294-2442
Home Address: 603 T Ave, Nevada, IA 50201
Cell Phone: 515-450-2335
PE License: State of Iowa, 1991
ORCID: [0000-0001-7978-0158](https://orcid.org/0000-0001-7978-0158)
SCOPUS: 7006135548

II. EDUCATION

Ph.D. Iowa State University, Industrial Engineering, 2004
M.B.A. Iowa State University, College of Business, Marketing, 1994
M.S. Iowa State University, Industrial Engineering, 1990
B.S. Iowa State University, Industrial Engineering, 1985

III. ACADEMIC EXPERIENCE

Teaching Professor 2019- Present
Director, Start Something College of Engineering 2019-Present
Senior Lecturer (Professor of Practice), Industrial and Manufacturing Systems Engineering, 2004-2019
IMSE DOGE Professional Programs, 2014 thru 2017
Lecturer, LOMIS Department, College of Business, 2003-2014

IV. INDUSTRY EXPERIENCE AND SPECIALIZATION

Proplanner, President and Founder, Ames, Iowa, 2002-June 2024
UGS/EDS, Director of e-Factory LOB, Ames, Iowa, 2000-2002
Engineering Animation, Vice President e-factory Division, Ames, Iowa, 1997-2000
CIMTECHNOLOGIES, President and Founder, Ames, Iowa, 1987-1997

Design and Development of Shop Floor Information and Control Systems. Specific focus on assembly facilities and continuous flow plants. Industry consulting at Automotive/Recreational: Tesla, Nissan, Ford, GM, Chrysler, Demco, Leonardo Defense, Amazon Robotics, Whirlpool, Electrolux, Polaris; Ag/Industrial: Deere, Caterpillar, CNH, AGCO.

V. HONORS AND AWARDS

COE Award for Excellence in Extension and Outreach 2022
Miller Faculty Fellowship Award 2022 (Course Dev on Entre/ABET in COE)
Don Grant Faculty Award 2011, 2015 (Excellence in Undergraduate Education)
First Place "Innovations in IE Curriculum Award", Sales Engineering Course, IIE Conference 2010

Graduate Student Award, IMSE Department, 2003
 “Winner”-Best Business Plan Competition” – Chicago Software Association, 2002
 Professional Progress in Engineering Award, ISU, College of Engineering, 2000
 Cadalyst/Cadence “Product of the Year”, Factory CAD/FLOW, 2000
 Graphic World Innovative Technology Award, Innovative Technology
 Award, 1998.

VI. ACADEMIC AREAS OF SPECIALIZATION

Courses Taught in IMSE Department:

Engr. 160	Engineering Problems with Computer Applications; 2004F; 2005S/F; 2006F; 2007F; 2008S, 2009F
IE 148	Information Engineering (Visual Basic); 2005F; 2006S/F; 2007S/F; 2008S/F, 2009F, 2010F, 2011S/F, 2012F, 2013S
IE 271	Applied Ergonomics and Work Design; 2005S; 2006S; 2007S
IE 305	Engineering Economic Analysis; 2004S/SS; 2005S/SS; 2006S/SS/F; 2007S/SS/F; 2008S/SS/F; 2009S/SS/F/EDE, 2010S/SS/F/EDE; 2011SS/F/EDE, 2012S/SS, 2013S/SS, 2014SS, 2015SS, 2016SS, 2017SS
IE 422X	Design Applications for Systems Improvement, 2018F, 2019S
IE 430	Entrepreneurial Product Engineering, 2018F, 2022S/F, 2023S/F, 2024S
IE 434X	Product Engineering Design Project, 2019S
IE 431X/432	Industrial Electronic Control Systems, 2008S, 2012S, 2013S
IE 441	Capstone, 2013F, 2014S/F, 2015S/F, 2016S/F, 2017S/F, 2018 S/F, 2019 S/F, 2020 S/F, 2021 S/F, 2022S/F, 2023S/F, 2024S
IE 448	Manufacturing Systems Engineering, 2020S
IE 481/581	Manufacturing eCommerce, 2021S, 2022S
IE 450X	Technical Sales for Engineers, 2008F, 2009S/F/EDE, 2010S/F/EDE, 2011S/F/EDE, 2012F/EDE, 2013F/EDE, 2014F/EDE
IE 451X	Technical Sales for Engineers II, 2009S, 2010S, 2011S, 2012S/EDE, 2013S/EDE, 2014S/EDE
IE 570	Project Management (Dual Degree) F2013
IE 587X	Manufacturing Information Systems and Data Exchange in Ecommerce, 2005F; 2008SS, 2012F
IE 590	Capstone Business Simulation (Dual Degree) S2014

Courses Taught in LOMIS Department, College of Business

POM 320	Production Operations Management, 2004F
Trans Log 360	Logistics and Supply Chain Mgmt, 2003SS, 2004F, 2005S, 2006S
SCM 301	POM/Logistics Intro 2010F
MIS 434	E-Commerce, 2005SS
SCM 422	Supply Chain Planning, 2007S
SCM 522	Supply Chain Planning and Control Systems, 2008F
SCM 524	Process Analysis and Improvement, 2009S, 2010S
MIS 533	Data Management for Decision Makers, 2006SS
MIS 537	Project Management 2011S, 2012S, 2013F, 2014

VII. TECHNICAL PUBLICATIONS

GoogleScholar h-index, All	GoogleScholar h-index, last 5 years	GoogleScholar i10-index, All	GoogleScholar i10-index, last 5 years	GoogleScholar Citations, All	GoogleScholar Citations, last 5 years
9	5	9	2	239	67

Kirpes, Carl, Sly, Dave, Hu, Guiping, “Applied Research on Electronic Documentation and 3D Product Model Deployment to Production and Assembly Processes.”, *Industrial and Manufacturing Engineering – Applied System Innovation*, 2023

Kirpes, Carl, Hu, Guiping, Sly, Dave, “The 3D Product Model Research Evolution and Future Trends: A Systematic Literature Review.”, *Industrial and Manufacturing Engineering – Applied System Innovation*, 2022

Kirpes, Carl, Sly, Dave, Hu, Guiping, “Quantitative Model for the Value of the 3D Product Model Use in Production Processes”, *Industrial and Manufacturing Engineering – Applied System Innovation*, Nov 2021

Sly, Baumbauskas, Carberry, “Selling Technical Sales to Engineering Learners”, (Spring 2017), *Advances in Engineering Education (AEE)* 6(1).

Sly, Dave, March 2011, "Handling Material Problems As They Arise", *Cutting Tool Engineering*, pp 30.

Sly, Peters, Baumbauskas, "Development of a Sales Program", *IIE Innovations in Curriculum Competition*, May 2011

McLean, C., F. Riddick, D. P. Sly, and S. Moorthy. 2001. Manufacturing simulation and visualization: a discussion plan for NIST's assumption of SDX standardization activities. *MEL/NIST*.

Sly, D. P. 1999. Sim factors. *Computer Graphics World*.

Sly, D. P. May 1996. Using CAD for space planning and asset management. *Industrial Engineering Solutions*, 36-44.

Sly, D. P., M. Benoit, and E. Grajo. 1996. Layout design and analysis software. *Industrial Engineering Solutions*, 18-24.

Sly, D. P. 1995. Automatic optimal route flows in AutoCAD. *Industrial Engineering Solutions*.

Sly, D. P. 1995. Issues and techniques for using CAD to draw factory layouts. *Industrial Engineering Solutions*.

Sly, D. P. August 1995. Computerized facilities design and management: a survey of factory layout design and analysis software. *Industrial Engineering Solutions*, 43-51.

Sly, D. P. 1995. Material flow analysis and space planning of automotive manufacturing plants. *Automotive Manufacturing International*.

Sly, D. P. 1994. New s-curve analysis capability improves design by over 50%. *Industrial Engineering Solutions*.

- Sly, D. P. 1993. Fairtron scores big with new cabinet production layout redesign. *Industrial Engineering*, **3**, 34-36.
- Sly, D. P. 1990. Plant layout and material handling analysis using interactive graphics. *Industrial Engineering*, **6**.
- Sly, D. P. March 1988. What is Xenix? a viable alternative to Ms/DOS. *Cadence*, 120-122.
- Sly, D. P. 1987. Taking a part from CAD to CAM. *Versatility Magazine*(11), 34-36.
- Sly, D. P., D. Eichner. 1985. Computer assisted techniques for solving math and geometry associated with CNC machining. *Journal of Computers and Industrial Engineering*, **9**, 223-226.

Conference Proceedings:

- Kirpes, Carl, Sly, Dave, Hu, Guiping, “Value of 3D Product Model use in Assembly Processes”, IISE Proceedings Annual Conference, May 2020
- Sly, D P, “Running Capstone Like a Business – Focus on the Client”, Engineering Capstone Conference, June 2018
- Sly, D P, “Internet Based eKanban/eKitting Involving Suppliers”, FAIM 2018 Conference, Columbus OH.
- Sly, D P, “Reconciling the Bill of Materials to the Bill of Process for Configured Assemblies”, FAIM 2018 Conference, Columbus OH.
- Sly, D P, “Integrating 3D Product Models with Assembly Line Balancing Via Process Consumption”, FAIM 2018 Conference, Columbus OH.
- Sly, Helwig, Hu, “Improving the Efficiency of Large Manufacturing Assembly Plants”, June 2017, FAIM Conference, Modena Italy.
- Sly, Baumbauskas, Carberry, June 2013, “Evaluation of Perceptual Changes in an Engineering Sales Program”, ASEE Annual conference.
- Sly, D.P. May 2009, Addressing Real-World Constraints for Line Balancing within Large and Complex Assembly Plants. *Institute of Industrial Engineers Conference*.
- Sly, D.P. September 2009, Digital Factory – Practical methods for integrating assembly processes and layouts, *Bentley Systems Conference*.
- Sly, D.P. Sept. 2008, Computer Based Part and People Flow Diagramming Methods, *SME International Machine Tool Show Conference*.

- Sly, D.P. Dec. 2008, Factory Floor Layout – Trends and Technologies, *Autodesk University*.
- Sly, D. P. May 2008. Systematic design of tugger delivery routes. In *Institute of Industrial Engineers Research Conference*.
- Sly, D. P. 2002. Presentation of metrics for the design and benchmarking of automotive assembly plants. PhD colloquium. In *Winter Simulation Conference*.
- Sly, D. P. 1997. Success stories: manufacturing chair: Dave Sly (Cimtechnologies Corporation). In *Winter Simulations Conference*.
- Sly, D. P. 1997. Before dynamic simulation: systematic layout design from scratch. In *Simulation Conference Proceedings*, 645-648.
- Sly, D. P. 1996. A systematic approach to factory layout and design with FactoryPLAN, FactoryOPT and FactoryFLOW. In *Simulation Conference Proceedings*.
- Sly, D. P. 1995. Plant design for efficiency using AutoCAD and FactoryFLOW. In *Winter Simulation Conference*, 437-444.
- Sly, D. P. 1995. Material flow analysis of automotive assembly plants using FactoryFLOW. In *Winter Simulation Conference*, 902-908.
- Sly, D. P. 1995. Methodology for simulation application to virtual manufacturing environments. In *Winter Simulation Conference*.
- Sly, David. 1995. Material Analysis of Large scale manufacturing facilities. In *Winter Simulation Conference*.
- Sly, D. P. 1993. AutoCAD based industrial layout planning and material flow analysis in FactoryFLOW and PLAN. In *Winter Simulation Conference*, **3**, 34-36.

Other Publications:

- IISE Problem Solved Podcast on Entrepreneurship, Summer 2021
- Sly, David and Kirpes, Carl, Building and Managing the Bill of Process to Streamline the Enterprise – An Emerging Technology-Enabled Systems Approach, *IISE Emerging Frontiers Book*, CRC Press, June 2019.
- Textbook Chapter: *Digital Product Management, Technology and Practice*, Troy Strader, Business Science Reference, New York, 2011
- Sly, David, 2009. PFEP (Plan for Every Part) Logistics Planning and Execution System versions 1.0 to 1.2. *Integrated in-plant part logistics planning and e-Kanban/Supermarket Kitting management data models and associated software applications. Launched to Case New Holland and BAE Systems in August 2009*.
- Sly, David. 2005. Benchmark study of the MTM-B standard versus that of MTM-UAS. *MTM Association*.

Sly, David. 2004. Workplace planner application versions 1.0 to 2.6. *Workplace design, simulation and animation application with parsers for MTM, MODAPTS, MOST and User-defined systems. Includes full Lean analysis capabilities*, 2004-present.

Sly, David. 2004. Flow Path Calculator Application Versions 1.0 to 2.6. *Plant layout and material flow analysis application with detailed diagramming, analysis and reporting capabilities. Based on MS and PhD research in Industrial Engineering*, 2004-present.

Sly, D. P. 2003. MS. NET time study parser, MTM-1, 4M MTM-VAS and MTM-B.

Theses/Dissertation:

Dissertation, Transport Effort, a Metric for the Evaluation and Benchmarking of Automotive Assembly Plants, ISU Press, Ames, Iowa, (2004).

Thesis, A Method for Industrial Plant Layout and Material Flow Analysis in Autocad, ISU, (1990).

X. PRESENTATIONS

IISE Problem Solved Podcast on Entrepreneurship, Summer 2021

Integrating 3D Models with Process Engineering, MSUG (Michigan Simulation Users Group), October 2019

FAIM Conference 2017 (Italy), 2018 (Ohio)

IISE Annual Conference, PLM for Manufacturing Assembly, May 2017, May 2018

Systematic Analysis of Tugger Delivery Systems, MSUG (Michigan Simulation Users Group), October 2016, October 2017, October 2018

Digital Manufacturing Technology for Today, ABI Conference, Altoona, Iowa, October 2016

Mixed Model Line Balancing for Automotive Assembly Plants Using the Comsoal Method, Michigan Simulation Users Group, Dearborn, Michigan, 2007.

Integrating Products and Processes from PDM to ERP via MPM, Michigan Simulation Users Group, Dearborn, Michigan, 2005.

Panel Presentation: MPM – Deployment Issues Surrounding Manufacturing Planning Systems, CPD PLM Conference, Detroit Michigan, 2005.

Benchmark Study of the MTM-B Standard versus that of MTM-UAS MTM Association, Chicago, Illinois, 2005.

MPM – Leveraging PLM Downstream, Product to Process Integration, CPD PLM Conference, Detroit, Michigan, 2004.

XI. EXTENSION AND OUTREACH

Professional Practice:

Successfully developed and sold manufacturing software products to over 1,800 companies in 38 countries. Obtained global dominance in the factory software market, 1987 - present

Cyber Innovation Institute, Market Research, 2008

SME Magazine, Waurzyniak, Patrick, Lead Story for magazine, contributing expert, 2001

Featured expert, Alan S Brown, Role Models, Mechanical Engineering, 1999

Featured expert, Dave Sly featured expert, Tom Anail, Get It Right Before Its Real, Material Handling Engineering, 1999

Featured Expert, CAD/CAM: Designing in Harmony, Server/Work Station Expert, 1999

Featured Expert, Pamela Waterman, The Virtual Factory, Desktop Engineering, 1999

Featured Expert, Miller, Robert and Schmitz, Barbara, Manufacturing Goes Virtual, Computer Aided Engineering, 1998

Extension:

Facilities Layout Course (CIRAS October 2017)

Creation of RFID design and applications video series for EDE, 2009

Regularly present seminars on entrepreneurship and technical sales for various groups throughout central Iowa, 1999 - present

Plant Layout and Material Flow Analysis, taught over 100 seminars at international companies, society meetings, and university extension programs at Iowa State University, University of Wisconsin, University of Nebraska, and George Washington University, 1999 – present

International Experience:

FAIM Conference, June 2017 (Italy)

Consulting, Aston Martin, United Kingdom; Renault, France; Fiat-CNH, Ferrari Italy, 2008

Engineering Distance Education, Valencia Spain, Taught IE 305 to visiting ISU Students, 2007

Fiat Automotive Consulting, Turin Italy, Assisted with design of processes to integrate ergonomics and time estimation, 2007

Sales Engineering, Europe, Travelled to Germany, Italy, UK, Sweden, France, to assist clients and distributors with process engineering software and methods for Proplanner, 2002 - 2007

Cordys IT Conference, Denmark, Travelled with IMSE department head to a conference that was planned to be hosted at ISU's IMSE department in the following year, 2006

Automotive Consulting, Mexico, Travelled several times to GM, and Ford factories, as well as many key suppliers. Efforts involved automating engineering processes, 2004 - 2005

Sales/Mgmt Engineering, Europe, Asia, Travelled extensively (every 2 months) to countries such as, Taiwan, Japan, Germany, Italy, Sweden, France, UK, Mexico. Developed distribution for industrial engineering software products and managed country managers, 1997 - 2002

Sales, Consulting, Management, Europe, Asia, Countries included, Japan, Mexico, Italy, Germany, France, UK, Sweden. Developed international distribution and support for new factory layout engineering products, 1990 – 1997.

XII. SERVICE AND PROFESSIONAL ACTIVITIES

Professional Societies Membership and Leadership

Hosted National Sales Engineering Conference at ISU 2017

Institute of Industrial Engineers – current senior member

Computer and Information Systems, Board member, 2000-2006
Society of Manufacturing Engineers – current senior member
Past President of Des Moines Chapter, 1990
Rotary International Member, Ames Morning Chapter, 2005 to current
Modapts Time Measurement Association, 2004-2009
Methods and Time Measurement Association, MTM
Board Member, 2000-2018

XIII. PROFESSIONAL DEVELOPMENT

Seminars/Conferences/Classes Attended:

IISE Annual 2017 (and many years prior)
FAIM 2017, 2018
Capstone Engineering Conference (2014, 2016, 2018)
Deming Institute Conference, 2012 (organized in Ames), 2014,
2015(organized in Ames)
MTM Card Certification, 2003 - present
Commercial/Instrument Rated Pilot, 1997 - 1999
Dale Carnegie Sales Training, Attendee, 1991

IX. UNIVERSITY ACTIVITIES

University:

Judge for the Caterpillar Fall Innovation Challenge (2016F)
Iowa State University Research Foundation (ISURF)
Board of Directors, 2000-2011 (VP 2009 to 2011)
Pappajohn Scholar Grant Committee, 2005-2010, 2012, 2013, 2014, 2015, 2016
Judge for College of Ag Entrepreneurship Competition 2013S, 2014S, 2015F, 2016S,
2017F, 2018S, 2019F, 2020 S/F, 2021 S, 2023 S
Judge for Entrepreneurship Learning Community Competition 2012S, 2013S, 2014S,
2016S, 2016F, 2017F, 2018S, 2019F, 2022 F
Judge for the Okoboji Entrepreneurship Institute, August 2008 thru 2019
Speaker for the COB Entrepreneurship Course, 2008S, 2009S, 2010S, 2011F, 2013S,
2014S, 2014F, 2015S, 2015F, 2016S, 2016F, 2017F, 2018S
Speaker for the ISU COE course in Engineering Leadership, 2005-2010, 2015

College/Department:

DMDII Award Won (\$1.8 million with Guiping Hu as PI)
DOGE of Professional Programs 2014 to 2017
IE 305 Large Course Assessment Organizer (2013/2014, 2014/2015)
Deming conference organizer, 2012 F, 2015F
Fundamentals of Engineering Course Presenter/Reviewer, 2005-2007
Order of the Ring Ceremony Master, 2005-present
Entrepreneurship Curriculum Development Committee, 2003-present
Industry Advisory Board Member, 1997-1999
Sales Engineering Club Advisor, 2009-present
Kappa Sigma Fraternity Advisor, 2006-present
ISU Automotive Enthusiasts Advisor 2015-present
Engineering Entrepreneurship Club Advisor 2019-present