

Cerry M. Klein

Professor

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Cerry Klein has been studying the computational aspects of optimization for over nineteen years. In particular, Dr. Klein has investigated nonlinear and linear integer programming, dynamic programming, network optimization, multi-criteria decision-making, supply chain optimization, e-commerce, rural entrepreneurship, and extended enterprises. Dr. Klein has also been involved in educational research involving freshman retention, the vertical integration of material, summer teacher training institutes, and programs to increase the number of women and minorities in engineering and the sciences. He has received as a PI or Co-PI over a total of \$3.3 million in funding from several industrial and government institutions including the National Science Foundation, the Office of Naval Research, Department of Education, Society of Manufacturing Engineers, McDonnell Douglas, Union Electric, Missouri Department of Transportation and Chesebrough-Pond's Inc. Dr. Klein has authored and co-authored over 150 technical publications.

Dr. Klein is a senior member of the Institute for Operations Research and Management Science, The Mathematical Programming Society, the Society for Industrial and Applied Mathematics, and Sigma Xi. He is past president of the Computers and Information Systems Society of the Institute of Industrial Engineers, past president of the ACORD, has served as a reviewer for the National Research Council and The National Science Foundation and is currently an area editor for the *International Journal of Operations and Quantitative Management*.

Education

Ph.D. in Industrial Engineering, School of Industrial Engineering, Purdue University, Dec. 1983.

M.S. in Applied Mathematics, Department of Mathematics, Purdue University, 1980.

B.S. in Mathematics, Northwest Missouri State University (highest honors), 1977.

Experience

Professor, Department of Industrial and Manufacturing Systems Engineering, University of Missouri-Columbia, September 1996 to present.

Chair, Department of Industrial and Manufacturing Systems Engineering, University of Missouri-Columbia, September 2000 to present.

Director of Graduate Studies, Department of Industrial and Manufacturing Systems Engineering, University of Missouri-Columbia, September 1992 to 2001, August 2002 - present.

Awards

Senior Faculty Research Award for Excellence in Research, College of Engineering, University of Missouri, 1999

Office of Naval Research Young Investigator, 1988-1991

UMC Outstanding Industrial Engineering Professor, voted by graduating seniors (17 times)

Outstanding Engineering Faculty Teaching Award, College of Engineering (twice)

Ralph R. Teetor Educational Award, Society of Automotive Engineers, 1989

William T. Kemper Fellowship for Teaching Excellence, University of Missouri, (\$10,000 stipend), 1992

Synergistic Activities:

Dr. Klein has developed a four-course sequence for freshman/sophomore engineering students introducing them to design, analysis, and computational activities. Dr. Klein has also developed summer workshops for elementary/middle school teachers that introduces them to physics and mathematics from a

hands-on learning scenario so they may more effectively teach their students. In addition, Dr. Klein in conjunction with other faculty from the university, has developed a summer institute for female high school students that teaches concepts of engineering, physics, chemistry and biology by having the participants build their own factory to produce a designated product. The goal being to increase the number of females entering engineering and science.

Relevant Publications (over 150 technical publications total):

“Optimal Inventory Policies for an Economic Order Quantity Model with Decreasing Cost Functions” by H. Jung and C.M. Klein, *European Journal of Operational Research* (accepted September 2003)

“A New Rule for Minimizing the Number of Tardy Jobs in Dynamic Flow Shops”, E. Lodree, Jr., W. Jang and C.M. Klein, *Journal of Operational Research*, (submitted March 2002, accepted March 2003)

“Single Machine Sequencing with Normally Distributed Processing Times Using Mathematical Programming” by D.K. Seo, C.M. Klein, and W. Jang, *Computers and Industrial Engineering*, (accepted January 2003)

“Minimizing the Expected Number of Tardy Jobs for the Stochastic Scheduling Problem” by W. Jang and C.M. Klein, *Operations Research Letters*, Vol. 30, No. 2, (2002), 100-106.

"A Lagrangian Based Approach to Single-Machine Scheduling with Sequence Dependent Setup Times" by X. Sun, J.S. Noble, and C.M. Klein, *IIE Transactions*, Vol. 31, No. 2 (1999), 113-124.

"A Solution for the Dual Constraint Inventory Problem: An Application for the Small Business World" by B.M. Maloney and C.M. Klein, *International Journal of Operations and Quantitative Management*, Vol. 3, No.1 (1997), pp. 27-40.

"An Efficient approach to Solving Fuzzy MADM Problems" by Chie-Bien Chen and C.M. Klein, *Fuzzy Sets and Systems*, Vol. 88 (1997) pp. 51-67.

"Modeling Uncertainty in Networks", by C.M. Klein, *Mathematical and Computer Modelling*, Vol. 17, No. 8, (1993) 31-40.

"A New Algorithm for Fuzzy Multi-Criteria Decision Making", by T.Y. Tseng and C.M. Klein, *International Journal of Approximate Reasoning*, Vol. 6, No. 1, (1992) 45-66.

"Span of Control and Organization Design", by S. Yeralan and C.M. Klein, *Applications of Fuzzy Set Methodologies in Industrial Engineering*, Elsevier Science, Amsterdam, (1989) 181-196.

Scientific Collaborators (last 48 months):

James Keller, Paul Gader, Charles Caldwell, Lanis Hicks, Allen Hahn, Hui-Ming Huang, James Noble, Jose Ventura, Rex Kincaid, Thomas Crowe, Lori Franz, Catharine Harmonosky, Woosung Jang, Elin Wicks, Meera Chandrashekar, and Mark Virkler.

Graduate Advisor : Thomas Morin, Purdue University

Ph.d. Advisees: T.Y. Tseng, Bill Maloney, Chie-Bien Chen, Ernesto Garcia, J.P. Kim, Charles Tai, Alan McKendall, and Hoon Jung