

CHELL A ROBERTS

Arizona State University
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FORMAL EDUCATION

Ph.D. – Industrial Engineering	1991	Virginia Polytechnic and State University, VA
M.S. Industrial Engineering	1989	University of Utah, UT
B.A. – Mathematics	1982	University of Utah, UT

ADMINISTRATIVE AND PROFESSIONAL EXPERIENCE

EXECUTIVE DEAN COLLEGE OF TECHNOLOGY AND INNOVATION <i>MARCH 2011 - PRESENT</i>	Responsible for all college academic programs and for college research administration including the development of strategic plans and operations for recruiting, retention and student engagement, the development of a college wide project orientation and industrial partnership program, and faculty development.
CHAIR OF ENGINEERING ARIZONA STATE UNIVERSITY <i>August 2004 – July 2011</i> <i>interim Chair of Technology Management 2009 - 2011)</i> <i>Scope: Engineering and Computing Programs</i>	Responsible for creating the innovative engineering and computing department from a clean slate, developing a culture of pedagogical excellence, articulating a vision for the programs and faculty, managing department budget, and facilitating the scholarly activities of the faculty. Accomplishments included: <ul style="list-style-type: none">▪ Hired founding faculty and grew faculty to 24.▪ Grew department to three undergraduate programs and one graduate program with approximately 400 students.▪ Developed new faculty evaluation system, P&T guidelines consistent with our innovative design, and a shared outcomes continuous improvement structure.▪ Developed a professional practice program where all two semester capstone projects are industry funded and mentored raising over \$400,000 in project funding▪ Developed a studio based learning environment with over 40,000 square feet of new space.▪ Led ABET accreditation process and structure.▪ Developed embedded K-12 engineering courses for the Phoenix metropolitan area.▪ Lead the development of K-12 engineering state standards.
DIRECTOR OF ENGINEERING PROGRAM DEVELOPMENT	Responsible for developing a strategic plan and vision for a new engineering department with programs based on pedagogical excellence – a private school model in a public school setting.

CHELL A. ROBERTS

ARIZONA STATE UNIVERSITY

July 2003 to August 2004

Accomplishments included:

- Benchmarked top undergraduate engineering programs from around the world.
- Developed department and program initiation proposals for Arizona Board of Regents
- Created implementation plan and vision for the new department.

ASSOCIATE CHAIR OF GRADUATE
STUDIES
ARIZONA STATE UNIVERSITY
INDUSTRIAL ENGINEERING

2002 to 2003

Responsible for developing and maintaining departmental graduate policies, procedures, and for advising all graduate students in the department.

Accomplishments included:

- Developed automated processes for graduate program.
- Developed graduate admissions analysis model.
- Led manufacturing department group and curricular program.

ASSOCIATE PROFESSOR
ARIZONA STATE UNIVERSITY
INDUSTRIAL ENGINEERING

1996 to 2003

Accomplishments included:

- Developed and directed the Integrated Manufacturing Engineering Laboratories (IMEL) – facilities for students to work on innovative engineering projects.
- Lead the redevelopment of the college of engineering freshman engineering experience.
- Led the Nationally Society of Computer Simulation (SCS) Western Multi-conference for many years.
- Participated in an NSF Nominated (Japan Funded) Sabbatical to the National Mechanical Engineering Laboratories in Japan

ASSISTANT PROFESSOR
ARIZONA STATE UNIVERSITY
INDUSTRIAL ENGINEERING

1990 to 1996

Accomplishments included:

- Several Major NSF and Industry Grants
- Curricular Development in Manufacturing Courses

GRANTS

TEACHING AND LEARNING
GRANTS

Roberts, C. Development of K-12 Curriculum, \$50,000, CK-12 Foundation, 2007.

Ganesh, T, Baker, D. Elser, M, Robinson-Kurpius, S., Krause, K., and Roberts, C., Learning Through Engineering Design and Practice: Using our Human Capital for an Equitable Future, \$1,079,985, NSF 0737616, (2007).

Morrell, D., Roberts, C., Henderson, M., Hinks, R., Grondin, R., Kuo, C.Y Developing Learner Centered Interfaces to Technical Content Modules, ABOR, \$27,461, 2005

Carlson, M., Krause, S., Oehrtman, M. and Roberts, C. “Developing

TRADITIONAL
RESEARCH GRANTS

and Promoting Learner Centered Instruction through Science and Engineering Based Projects in Pre-calculus and Introductory Calculus, ABOR, \$49,691, 2004

Roberts (Co-PI) with many. ASU Engineering & Education: DET Expansion for K-12 Teachers, NSF Bridges in Engineering Education, \$100,000, 2002.

Fowler, J. and Roberts, C. "Continuation of ECE394 Introduction to Manufacturing Engineering at Intel," Intel Corporation, \$20,000., 2002.

Fowler, J. Roberts, C., and Brown, S "Continuation of ECE394 Introduction to Manufacturing Engineering at Intel," Intel Corporation, \$20,000, .2001.

Roberts, C. "Financial Forecasting Tool Models Grounded in Part Family and Process Type Methodologies," Honeywell Aviation Aftermarket Services, \$22,814, ORSPA 031636, 2003.

Roberts, C. "Roberts, C. "Enabling Generative Process Planning through Accessibility Analysis," Ford Motor Company, \$22,000, 2002.

Hubele, N., Roberts, C., and Henderson, M. (1997), "Entropic Optimization Criteria in Capability Anaylsis, DMI-9700581 Mod-1, \$23,980.

Hubele, N., Roberts, C., and Henderson, M. (1997), "Cost, Time and Quality Manufacturing Evaluation, National Science Foundation, DMI-9700581, \$518,613.

Roberts, C. (1997) "Feasibility Study of Compressor Blade Remanufacturing," NAC Corporation, \$10,000.

Roberts, C. "Investigation of GM C/K Trucks" \$7,229, Arndt and Associates, ORCA #97-0201, 1996

Henderson, M., Hubele, N., and Roberts, C. "Feature-Based Manufacturing Evaluation", NSF, ORCA #93-0281, September 15, 1993 to September 14, 1996, \$251,788.

Shunk, D., Henderson, M., and Roberts, C. "AM3 Affordable Multi-Missile Manufacturing Program," \$325,286, ORCA #96-0491, (Hughes, Texas Instruments), January 1996.

Roberts, C. and Shunk C. "University / Industry Research Partnership, INFAC-2" #CRP 91018, IIT Research Institute, July 1992 to May 1993, \$108,794.

Nuno, P., Shunk, D., and Roberts, C., "World Class Manufacturing Program, Phase 2B," CRP No. 91469 Revised, Vilpac (Kenworth),

CHELL A. ROBERTS

1992, \$113,166.

Beaumariage, Terrence G., and Roberts, Chell A., "An Object Oriented Approach to Batch Expert System Management", Honeywell-ASU World Class Batch Process Research Advisory Committee, January 15, 1992 to August 15, 1992, \$24,000.

Roberts, Chell A. and Beaumariage, Terrence G., "Autonomous Metal Spray Path Programming", ASRI # 1-8014, Garrett Engine Division, Allied Signal, January 1, 1991 to July 15, 1991, \$8,000.

Roberts, Chell A. and Beaumariage, Terrence G., "Expert System Batch Process Manager", CRP 91226, ASRI # 1-8020, Honeywell-ASU World Class Batch Process Research Advisory Committee, December 1, 1990 to August 15, 1991, \$37,000.

OTHER GRANTS / EQUIPMENT GRANTS

Roberts, C. CIEE/CEAS Education Improvement Grant-in-Aid, Web-based Instructional Media for a Team-based Experience in Manufacturing Automation, \$6000.

Roberts, C. "Sabbatical to study Manufacturing Automation, " Japanese Institute of Science and Technology, 1998 (Approximately \$15,000)
Roberts, C. (1997) "Make-Buy Modeling," FMC Corporation, \$6000.

Roberts, C. "Combined Object-oriented Simulation for Control" Rockwell, \$10,000

Rivera, D. Roberts, C. and Si, J., "Honeywell/ASU Program", \$100,000, 1995.

Rivera, D. Roberts, C. and Si, J., "Honeywell/ASU Program", \$100,000, 1994.

Roberts, C. and Beaumariage, T., "Honeywell/ASU Program", \$28,737, 1993.

Roberts, C. and Beaumariage, T., "Honeywell/ASU Program", \$32,000, 1992.

Roberts, C. Object-Oriented Control and Simulation Modeling, Rockwell Inc. 8/93, \$10,000

Roberts, C., Industrial Control Research Support, Texas Instruments, 11/90, \$25,000

Roberts, C. (2001) CMM donation for Metrology in Semiconductor work from Intel Corporation, \$10,000, 2001.

Roberts, C. (2001) Summit Electrical Supply, Control Equipment for

IMEL, \$12,000.

Roberts, C. (1997), Watkins Johson, Robots and Control Equipment, \$94,877

Roberts, C. (1997), Motorola, Semiconductor Material Handling, \$52,100

Roberts, C. (1997), Motorola, Robotic Work Cells, \$74,000
Beaumariage, T. and Roberts, C. (1993) Manufacturing Dynamics and Control Comp., INTEL Corporation, \$16,680.

Roberts, C and Beaumariage, T., Brown and Sharp CMM Software and Hardware Metrology Grant, 12/91, \$9,000

Roberts, Chell, Texas Instruments Programmable Logic Controllers, Texas Instruments Programmable Controller Division, 10/90, \$40,000.

Roberts, Chell, Texas Instruments Programmable Logic Controller and Micro- Explorer Workstation, Texas Instruments Programmable Controller Division, 10/89, \$125,000.

SCHOLARLY WORK

BOOK CHAPTERS AND ARCHIVAL JOURNAL PUBLICATIONS

Roberts, C. "Future Tools for the Industrial Engineer, (2000)"
Industrial Engineering Handbook. McGraw Hill. (Book Chapter)

Roberts, C. "The Nature of Engineering, (2008), CK12 Foundation
(Book Chapter)

Dale Baker, Şenay Yaşar , Sharon Robinson-Kurpius, Steve Krause,
Chell Roberts, (2007) " Infusing Design, Engineering, and
Technology Into K-12 Teachers' Practice," International Journal of
Engineering Education, 25(3) pp. 894-893

Roberts, C. and Rawat, R. (2007) An Approach for Tool
Accessibility Analysis for Multi-Axis Machines, Computer Aided
Design Applications, 4(1-4), pp. 385-394

Wang, J., Roberts, C., and Danielson, S. (2007), Local and Global
Accessibility Evaluation with Tool Geometry, Computer Aided
Design Applications, 4(1-4), pp. 19 – 28,

Dale Baker, Steve Krause, Şenay Yaşar, Chell Roberts, Sharon
Robinson-Kurpius (2007) "An Intervention to Address Gender
Issues in a Course on Design, Engineering, and Technology for
Science Educators", Journal of Engineering Education, 96 (3), pp.

213-226.

Şenay Yaşar, Dale Baker, Sharon Robinson-Kurpius, Steve Krause, Chell Roberts, (2006) "Development of a Survey to Assess K-12 Teachers' Perceptions of Engineers and Familiarity with Teaching Design, Engineering, and Technology", *Journal of Engineering Education*, 95 (3), PP. 205-216.

Castillo, I, Roberts, C., and Peterman, K, (2003) Automatic Generation Of Control Software Using Discrete Event Control Networks, *International Journal of Industrial Engineering*, 10(3).

Castillo, I. And Roberts, C. (2001) "Real-Time Control Scheduling for Multi-Purpose Batch Plants," *Computers in Industrial Engineering*, 41, pp. 211-225.

Roberts, C. and Hermosillo, E. (2000) "An Automated Machining Cost Estimator," *Journal of Engineering Valuation and Cost Analysis*, vol.3, pp. 27-42.

Stage, R., Roberts, C. And Henderson, M. (1999) "Generating Resource Based Flexible Manufacturing Features through object Driven Clustering," *Journal of Computer Aided Design*, 31, pp. 119-130.

Roberts, C., Dessouky, M., and Dessouky, Y., (1999) "A Virtual Plant Modeler (VPMOD) for Batch Chemical Precesses," *Journal of Intelligent Manufacturing* 10:(2) pp.211-223.

Roberts, C. and Dessouky, Y., (1998) "An Overview of Object-Oriented Simulation," *Simulation*, 70(6), pp. 359-368.

Aurand, S., Roberts, C. A., and Shunk, D. (1998) "An Improved Methodology for Evaluating the Producibility of Partially Specified Part Designs," *IJCIM*, Vol.11. No.2, 153-172

Shanmugham, S.G. and Roberts, C. A. , (1998) "Applications of Graphical Specification Methodologies for Manufacturing Control Logic Development: A Classification and Comparison," *IJCIM*, Vol. 8, No.2, pp. 142-152

Roberts-C; Hubele-N; Henderson-M; Stage-R; Perez-J, (1997) "Manufacturing evaluation using resource-based, template-free features," *Journal-of-Intelligent-Manufacturing*. 8(4) p.323-31.

Dessouky, Y.M. and Roberts, C. A., (1997) "A Review and Classification of Combined Simulation," *CIE*, 32(2), pp. 251-264.

Dessouky, Y.M., Roberts, C.A., and Dessouky, M.M., (1996) "Scheduling Multi-Purpose Batch Plants with Junction Constraints," 34(2), 525-541, *International Journal of Production Research*.

Baweja, G., Roberts, C. A., and Beaumariage, T.G., (1996) "An

Open Control Interface for Multi-axis Manufacturing Entities,” IJICIM, Vol.9, No.6, pp. 419-433, 1996.

Dessouky, Y., Roberts, C. A., and Beaumariage, T. G., (1995) “An Object Oriented Simulation Architecture with Real-Time Capabilities,” International Journal of Production Research, 33(9), Sept 95.

Beaumariage, T.G., Roberts, C. A., and Baweja, G., (1995) “Representation of Manufacturing Systems in Terms of Entities and Relationships”, International Journal of Computer Integrated Manufacturing, 8(1), 43-53.

Shanmugham, S.G., Beaumariage, Roberts, C. A., and Rollier, D.A. (1995) "Manufacturing Communication: A Review of the MMS Approach," Computers in Industrial Engineering 28(1), 1-21, 1995.

Dessouky, Y. Beaumariage, T. G., Roberts, C. A., and Ogle, M., (1993) “An Intelligent System for Batch Scheduling for the Process Industries”, Computers in Industry, 22 233-247.

Beaumariage, T.G., and Roberts, C. A., (1992) “Object Oriented Modeling: Attempts at Improving Model Execution Speed,” SCS Simulation Series, 23(3), pp. 93-99

REFEREED CONFERENCE
PUBLICATIONS

Rogers, B., Henderson, M., and Roberts, C. (2008) Development of a Water Purification System for West Africa, Proceedings of the 2008 ASSE Annual Conference, Pittsburg, PA.

Morrell, D., Roberts, C. Bakers, D. Krause, S., Ganesh, T. (2008) Development of an Open Source High School Engineering Text, Proceedings of the 2008 ASSE Annual Conference, Pittsburg, PA.

Yasar, S., Henderson, M., Roberts, C. (2008) A Verbal Protocol Analysis of Freshman Engineering Teams" Proceedings of the 2008 ASSE Annual Conference, Pittsburg, PA. (Best Paper Award from the Design Division)

Yasar, S., Baker, D., Roberts, C. and Kruase, S. (2008) Development of a Team Interaction Observation Protocol And A Self-Efficacy Survey Using Social Cognitive Theory As A Framework, Proceedings of the 2008 ASSE Annual Conference, Pittsburg, PA.

Roberts, C. Morrell, D., Grondin, R, Henderson, M., Kuo, C., Hinks, R. and Sugar, T. (2007) An Update on the Implementation of a New Multidisciplinary Engineering Program, Proceedings of the ASEE 2007 Conference, Honolulu, Hawaii.

Roberts, C. Henderson, M., Morell, D. and Yasser, S. (2007)

Toward the Development of an Empirically Based Understanding of Engineering Design Teams, Proceedings of the ASEE 2007 Conference, Honolulu, Hawaii.

Grondin, R. Morrell, D., and Roberts, C. (2007) Electrical Engineering within a Multidisciplinary Program, Proceedings of the ASEE 2007 Conference, Honolulu, Hawaii.

S. Danielson, M. Henderson, C.-Y. Kuo, C. Roberts, D. Morrell, R. Grondin, R. Hinks, and T. Sugar, (2005) "A Clean Slate: Designing a Mechanical Systems Concentration Within a New Engineering Program," 2005 International Mechanical Engineering Conference and Exposition, November 2005.

D. Morrell, C. Roberts, R. Grondin, C.-Y. Kuo, R. Hinks, S. Danielson, and M. Henderson, "A Flexible Curriculum for a Multi-disciplinary Undergraduate Engineering Degree," FIE 2005, October 2005.

C. Roberts, D. Morrell, R. Grondin, C.-Y. Kuo, R. Hinks, S. Danielson, and M. Henderson, "Developing a Multidisciplinary Engineering Program at Arizona State University's East Campus," 2005 American Society for Engineering Education Annual Conference and Exposition, June 2005.

Dale Baker, Senay Yasar, and Sharon Robinson Kurpius Steve Krause and Chell Roberts "Making the Case: Evaluating the Impact of a Design, Engineering, and Technology Course on K-12 Teachers' Practice", 2005 ASEE Annual Conference

Steve Krause, Chell Roberts, Dale Baker, Senay Yasar, Sibel Uysal, Sharon Robinson Kurpius , "Navigating Rugged Terrain: Barriers and Benefits to Implementing an Elective Engineering Design Course in a High School Setting", 2005 Frontiers in Education Conference

Dale Baker, Senay Yasar, Sibel, Uysal, Sharon Robinson Kurpius, Steve Krause & Chell Roberts, Navigating Rugged Terrain: Barriers and Benefits to Implementing an Elective Engineering Design Course in a High School. FIE 2005

Steve Krause, Dale Baker, Chell Roberts, Sharon Kurpius, Senay Yasar, "Developing a Course to Help Infuse Design, Engineering and Technology into the Curriculum: Understanding the role DET in Science Instruction and Classroom Practice", Conference Proceedings 2004 Annual Meeting, National Association for Research in Science Teaching.

Dale Baker, Steve Krause, Senay Yasar, Chell Roberts, Sharon Kurpius. "An Intervention on Tinkering and Technical Self-Confidence, and the Understanding of the Social Relevance of Science and Technology", Conference Proceedings 2004 Annual Meeting, National Association for Research in Science Teaching.

Dale R. Baker, Chell A. Roberts, Stephen J. Krause, Antonio A. Garcia, Sharon E. Robinson Kurpius, James A. Middleton, D. L. Evans, Mary R. Anderson-Rowland, Debra L. Banks, Cheryl G. Gengler, Senay Yasar, "Designing a Graduate Education Course for Design, Engineering, and Technological Concepts for K-12, 2004.

Baker, D. Krause, S., Roberts, C., Kurpius, S. & Yasar, S. Infusing design, engineering and technology into science instruction and classroom practice. Annual Meeting of the American Educational Research Association, San Diego, CA. (April, 2004).

Roberts, C., Krause, S., Kurpius, S., Baker, D. & Yasar, S. "A Star Wars Wand for the Blind, Tracking License Plates and a Smart Golf Club : Design Engineering Technology in Action". Annual Meeting of the National Association of Research in Science Teaching, Vancouver, Canada. (April, 2004).

Robinson-Kurpius, S., Krause, S., Yasar, S., Roberts, C. & Baker, D. "Assessing design engineering technology in schools" Annual Meeting of the National Association of Research in Science Teaching, Vancouver, Canada. (April, 2004).

Dale Baker, Senay Yasar, Sharon Robinson Kurpius, Steve Krause, Chell Roberts, "Not Just for Nerds: Embedding Science Activities within a Design, Engineering, and Technology (DET) Environment", 2004 Frontiers in Education Conference Proceedings, F1A-1-6 (2004).

Krause, S., Baker, D., Roberts, Robinson-Kurpius, S. & Yasar, S. (April, 2004). "Developing a course to infuse design engineering technology (DET) into curriculum: Understanding the role of DET in science instruction and classroom practice". Annual Meeting of the National Association of Research in Science Teaching, Vancouver, Canada. (April, 2004).

Baker, D., Krause, S., Yasar, S., Roberts, C. & Kurpius, S. "An intervention on tinkering and technical self-confidence, and the understanding of the social relevance of science and technology". Annual Meeting of the National Association of Research in Science Teaching, Vancouver, Canada. (April, 2004).

Dale Baker, Senay Yasar, & Sharon Robinson Kurpius, Steve Krause & Chell Roberts "Developing a Method to Measure the Metacognitive Effects of a Course on Design, Engineering and Technology Over Time", 2004 ASEE Annual Conference Proceedings, 732-740 (2004)

Roberts, C. and Gosh, S. (2004) A Proposed Model of an Undergraduate Engineering Program in Modeling and Simulation, Proceedings of the 2004 SCS Western Multi-Conference.

Roberts, C. and McHenry, A. (2004), Developing a Multidisciplinary Engineering Program at Arizona State University East Campus, 2004 ASEE Annual Conference Proceedings

Koka, N. and Roberts, C. (2004), SECSII, Simulation Using SIMULA, Proceedings of the International Conference on Modeling and Simulation, ICS2004, Malaga, Spain (June).
Roberts, C. et al. (2003) Designing a Graduate Education Course for Design, Engineering, and Technological Concepts for K-12 Teachers, 33rd ASEE/IEEE Frontiers in Education Conference, Bolder Co.

Dale R. Baker, Chell A. Roberts, Stephen J. Krause, Antonio A. Garcia, Sharon E. Robinson Kurpius, James A. Middleton, D. L. Evans, Mary R. Anderson-Rowland, Debra L. Banks, Cheryl G. Gengler, Senay Yasar, "Designing a Graduate Education Course for Design, Engineering, and Technological Concepts for K-12 Teachers." 2003 Frontiers in Education Conference

Mary R. Anderson, Dale R. Baker, Debra L. Banks, Peter E. Crouch, D. L. Evans, Antonio A. B. Garcia, Cheryl G. Gengler, Stephen J. Krause, Sharon E. Robinson Kurpius, James A. Middleton, Chell A. Roberts, Senay Yasar, "Design, Engineering, and Technological Expansion for K-12 Teachers." 2003 ASEE Annual Conference Proceedings, 1300-1313 (2003).

Montelaro, A, Henderson, M., Roberts, C., Hubele, N., Hayes, C., and Gupta, S.K. (2002 to appear), "A Comparison Method for Automated Manufacturability Analysis Systems," Paper#: IMECE2002-39424, Proceedings of the ASME Winter Annual Meeting, New Orleans.

Paprotny, I. And Roberts, C. (2000) "Selecting Parallel and Distributed Simulation Synchronization Intervals: A Case Study, " Proceedings of the European Simulation Symposium, September 28-30, Hamburg, Germany, pp.

Paprotny, I. And Roberts, C. (2000) "An Approach to Self-Organization Using a Distributed Network of Nodes," Proceedings of the SCS Western Multiconference on Communication Networks and Distributed Systems Modeling and Simulation, San Diego, CA. January 23-27, pp.

Murugan, A. and Roberts, C. (1998) "Accessibility considerations for generative CAM using resource-based template free features," Proceedings of the 2nd International Conference on Engineering Design and Automation, Maui Hawaii, August 9-13, CDROM.

Jung, J. Roberts, C. "Tool path generation for Ship turbine blades", Proceedings of the 2nd International Conference on Engineering Design and Automation, Maui Hawaii, August 9-13, CDROM

Stage, R., Roberts, C. And Henderson, M. (1997) "A Framework for Representing and Computing Tool Accessibility," Proceedings of the 1997 ASME Design Engineering Technical Conference, Sacramento, California, ASME Publications, (CDROM).

Arndt, M. And Roberts, C. (1997) "The Identification and Quantification of Incidents Involving General Motors (GM) Trucks with Side Mounted Fuel Tanks," Proceedings of 2nd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, Brisbane Australia, pp. 13-23.

Roberts, C.A, and Dessouky, Y.M. (1996), "Discrete-Event Control Network Simulation for Logic Validation", Simulation in Industry, Proceedings of the 8th European Simulation Symposium and Exhibition (ESS 96), Vol. II, pp. 249-253, Genoa, Italy.

Dessouky, Y.M., Roberts, C.A., Lee Y., and Agre, J. (1996), "Continuous Simulation Approach for the Noumenon Factory Design Environment", 1996 Object-Oriented Simulation Conference Proceedings, pp 51-56, La Jolla, CA.

Roberts, C., Stage, R., Hubele, N., Henderson, M. and Perez, E., (1996) "A New Approach to Manufacturing Features for Evaluation and Operational Planning," Proceedings of the IFIP WG5.2 Workshop on Geometric Modeling in Computer-Aided Design , Airlie, VA, May 18-23, pp 114-120.

Roberts, C., and Dessouky, Y. (1996) "Discrete-Event Control Network Simulation For Logic Validation," Proceedings of the 8th European Simulation Symposium, Genoa, Italy, Oct. 24-26, SCS Publications, pp. 154-160.

Dessouky, M.M, Dessouky, Y.M., Roberts, C.A. (1995), "An OO Approach to Discrete Event Dynamic Control of Batch Chemical Systems", 1995 Object-Oriented Simulation Conference Proceedings, pp 89-94, Las Vegas, NV.

Ogle, M., Beaumariage, T. and Roberts, C., (1995) "Assembly Operations in the MEC Simulation Environment," Proceedings of the 1995 OO Simulation Conference, Las Vegas, NV.

Roberts, C. Dessouky, Y. Beaumariage, T. and Lee, Y., (1994) "VPSIM: A Virtual Plant Simulator for the Process Industries," Proceedings of the 1994 European Simulation Multi-conference, pp. 388-392, June 1994, Barcelona, Spain.

Baweja, G., Roberts, C. and Beaumariage, T., "A Representational Schema for Manufacturing Entities," Proceedings of the 1994 FAIM Conference, Blacksburg, VA. pp. 824-833.

Dessouky, Y, Roberts, C. and Beaumariage, T., "An Object-Oriented Architecture for Operator Training in the Process

Industries”, Proceedings of the 1994 SCS Object-Oriented Simulation Conference, pp.15-20, Tempe, AZ.

You, B, Beaumariage, T. and Roberts, C. “Object Oriented Simulation of Conveyors,” Proceedings of the 1994 SCS Object-Oriented Simulation Conference, 99-104, Phoenix, AZ.

Rivera, D. Desai, A., Beaumariage, T. and Roberts, C., “ A Knowledge Based Framework for Controller Structure Selection In Intelligent Process Control”, Proceedings of the 1993 American Control Conference, pp 67-73, San Francisco CA.

Hamu, D., Roberts, C. A., Beaumariage, T. G., Rivera, D., “A Knowledge Based Approach to Control Strategy Selection Using Virtual Plants, Object-Oriented Simulation, 1993, Proceedings of the Object Oriented Simulation Conference of the 1993 SCS Western Simulation, pp 74-80, Multi-conference, La Jolla, CA, 1993.

Roberts, C. A., Beaumariage, T. G., and Koka, S., “Object Oriented Tools for the Design and Validation of Control Logic”, Proceedings of the Object Oriented Simulation Conference of the 1992 SCS Western Simulation Multi-conference, 64-71, Newport Beach, CA, 92.

Roberts, C. A., Beaumariage, T. G., Dessouky, Y. and Ogle, M., “Object Oriented Simulation Tools Necessary for Flexible Batch Process Management”, 1991 Winter Simulation Conference Proceedings, pp. 323-330, Phoenix, AZ, 1991.

Ogle, M., Beaumariage, T. G., Roberts, C.A., “The Separation and Explicit Declaration of Model Control Structures in Support of Object Oriented Simulation”, 1991 Winter Simulation Conference Proceedings, pp. 1173-1179, Phoenix, AZ, 1991.

Roberts, C. A. and Deisenroth, M. “An Object Oriented and Knowledge Based Environment for Control Code Programming”, Proceedings of the 1990 Manufacturing International Conference of ASME, Atlanta GA .

Roberts, C. A. and Deisenroth, M., "Automatic Generation of Control Programs 1989 SME Technical Paper MS89-426. Presented at the 1989 SME International Conference and Exposition, Detroit Michigan.

SELECTED PRESENTATIONS AND CONFERENCES

- Roberts, C. (2007), Within Your Life, ” Keynote address for An Evening with ASU, Polytechnic campus. Roberts, C. (2006), Within Your Life, ” Keynote address for An Evening with ASU, Polytechnic campus. Roberts, C. (2005), Within Your Life, ” Keynote address for An Evening with ASU, Polytechnic campus. Roberts, C. (2004) Within Your Life, ” Keynote address for An Evening with ASU, Polytechnic campus. Over

200 in attendance

- Roberts, C. (2003) Within your Life, Keynote address for An Evening with ASU in Tempe, October, Over 500 in attendance.
- Roberts, C. (2002) "A Perspective of ASU" Keynote address for An Evening with ASU in Tempe, October 2002, Over 500 in attendance.
- Roberts, C. (2002) "Five Points of Advice for Success at ASU", Orientation for Parents and New Students, Over 500 in attendance.
- Roberts, C. (2001) "Singularities, the Future, and Engineering," Keynote address for the Evening with ASU in Tempe, November 2001, Over 400 in attendance.
- Roberts, C. (2001) "Singularities, the Future, and Engineering," Keynote address for the Evening with ASU in Tucson, October 2001, Over 200 in attendance.
- Roberts, C. (2000) "Singularities," Keynote address for the Evening with ASU in Tucson, October 2000.
- Paprotny, I., Roberts, C. , Fowler, J., Mou, J, and Sugar, T. (2000) "Distributed Control through Synergy and Aggregation: Enhancing the Capabilities of Computationally Limited Robotic-Devices, System optimization through a two-stage simulation approach," Poster Session at the 2000 Winter Simulation Conference.
- Paprotny, I, Roberts, C. and Mou, J. (1999) "C++ Simulation of a proposed distributed control system for an autonomous group of MEMS devices,," Poster Session at the 1999 Winter Simulation Conference.
- Roberts, C.A. "Operator Training with a Virtual Plant Simulator" Invited Presentation
- Honeywell Operator Training Symposium, Phoenix AZ, March 1994. (100 people)
- Roberts, C. A. "Robotics, Past, Present, and Future", Institute of Technology, Senora Mexico, November 1992.
- Roberts, C. A., "Manufacturing Information Systems", Monterray Mexico April 1992.
- Roberts, C. A., "Manufacturing Information Systems", Mexico City, Mexico April 1992.
- Roberts, C. A., "Virtual Factories", Presentation at the VIII Symposium de Ingenieria, November 5-8, 1991, Mexicali, Mexico.
- Montelaro , A. Henderson, M., Hubele, N. and Roberts, C. (2000) Integrated Cost, Time and Quality Manufacturing Evaluation for Design Feedback, NSF Grantees Conference, Vancouver, BC, January, NSF Publications.
- Castillo, I., Roberts, C., and Peterman, K. (1999) Automatic Generation of Control Software for Automated Manufacturing Environments, Proceedings of the 25th International Conference on Computers and Industrial Engineering, New Orleans, LA, March 1999.
- Murugan, A., Roberts, C. and Henderson, M. (1999) "An

Evaluation of Tool Accessibility Techniques for Manufacturability Analysis,” Proceedings of the Swiss Conference of CAD/CAM, Neuchâtel, February 22-25, 1999.

- Henderson, M., Roberts, C. and Kattethota, “Manufacturability (1999) “Evaluation for Rapid Fabrication: A System for Traditional Machining and Layered Manufacturing Planning,” Proceedings of the Swiss Conference of CAD/CAM, Neuchâtel, February 22-25, 1999.

TEACHING EXPERIENCE

COURSES TAUGHT

Introduction to Engineering, Engineering Economics, Engineering Simulation, Engineering Statistics, Manufacturing Processes, Computer-Aided Manufacturing and Control, Process Selection, Data Modeling, Databases, Facilities Planning, Operations Research, Capstone Project, Petrinets and Control, Manufacturing Evaluation.

STUDENTS SUPERVISED PHD COMMITTEE CHAIR

- Jinnan Wang, Local and Global Accessibility Analysis for Generative Process Planning, 2006.
- Chi-Wen Lee, A Flexible Discrete Control Language, Dissertation, Arizona State University, 2002
- Byongsok Lee, “Real-Time Schedule –Based Generation of Discrete Event Control Logic,” Dissertation, Arizona State University, 1997
- Edgardo Perez, “Manufacturing Evaluation and Operation Planning for Flexible Free-form Manufacturing Features,” Dissertation, Arizona State University, Fall 1996
- Young Lee, “A Reactive Scheduling Approach to Batch Chemical Manufacturing” Dissertation, Arizona State University, Fall 1996
- Sengoda Shanmugham, A Methodology for Formal Specification and Verification of Discrete Event Control Networks.” Dissertation, Arizona State University, Spring 1995
- Gurshaman Baweja* "An Open Control Interface for Multi-axis Manufacturing Entities" Dissertation, Arizona State University, Spring 1994
- Steve Aurand*, "A Hierarchical Evaluation Methodology for Early Design" Dissertation, Arizona State University, Spring 1994
- Michael Ogle, (Co-Chair) "Separation of Control and Model Frames in Simulation", Dissertation, Arizona State University, Summer 1994
- Yasser Dessouky*, An Object Oriented Architecture for Combined Simulation Modeling, Dissertation, Arizona State University, Spring 1993

STUDENTS SUPERVISED MASTERS COMMITTEE CHAIR

- Senthil Govindarajulu, Formulation of Manufacturing Features from Accessibility Primitives using Mixed Integer Programming Approach, Masters Thesis, Arizona State University, 2003.
- Amit Bhargava, Decision Analysis for the Aviation Repair and Overhaul Industry using a Scrap Scorecard, Masters Thesis, Arizona State University, 2003.
- Alagappan Arunachalam, Repair Potential Forecasting Model for the Aviation After Market Industry, Masters Thesis, Arizona State University, 2003.

- Mahesh Hardikar, "Determining The Location And Density Of Point Accessibility Maps," Masters Thesis, Arizona State University, Nov. 2001
- Igor Paprotny, "A Methodology for Synthesizing Distributed Embodiment in Distributed Multi-Agent Systems," Masters thesis, Arizona State University, May 2001. Co-Chair With John Fowler
- Murugan, Arvinth, "A Hybrid Approach to Tool Accessibility Evaluation for Manufacturability Analysis," Masters Thesis, Arizona State University, Dept. of IMSE, Tempe, AZ. 1998
- Ignacio Castillo, "Adaptive Real-time Scheduling and Control for Multi-purpose Batch Chemical Plants," Arizona State University, 1998
- Keith Peterman, "Automatic Control Code Generation from Discrete Event Control Networks for the General Purpose Controller, Arizona State University, 1997
- Karthic Roa, "An Object Oriented Distributed Cell Control Architecture", Arizona State University, Summer 1995
- David Mitchell, "A Generic Language for I/O Board Control" Arizona State University, Spring 1995
- Don Klien, "A Taxonomy for Cellular Manufacturing" Arizona State University, Spring 1995
- Chung Chang* "A Feature-based Manufacturability Evaluation Methodology" Fall 1994
- Murugan Palaniappan, "An Interactive Path Planning System for High Precision Robotic Welding," Spring 1993
- Byongsok Lee, "A Translator Methodology for Programmable Controllers," Spring 1993
- C. Cheng, "An Object-oriented Approach to Robotic Programming", Spring 1993
- Satya Koka, "A Simulation Approach to Control Logic Specification," Spring 1992
- Gregg Maggioli, "The Development of Object-Based Real-time Statistical Process Control, Spring 1992
- Cordiak, J., "The Development of a Generic Object Oriented Cell Control Architecture", MSE, May 1991.

SERVICE EXPERIENCE

PROFESSIONAL SERVICE

- ABET Program Evaluator 2007 – present
- CDIO Leadership Team 2008 – present
- ASEE Multidisciplinary Division, Program Chair. 2009 - present
- Arizona State Department of Education Engineering Pathways Committee (Chair of Engineering Relevance Sub-Committee), 2008 – Present
- Arizona Department of Education K-12 Standards Committee 2008 – Present
- ASEE Multidisciplinary Division, Secretary/ Treasurer. 2007-2009

CHELL A. ROBERTS

- ASEE Corporate Members Council K-12 Engineering Standards Committee, 2006 – Present
- SEEK 16 National K-12 Framework Committee, 2007 – Present
- Board of Directors, Society of Computer Simulation, 2002 – 2007
- General Chair, Society of Computer Simulation, Western Multi-conference, 2003, 2000, 1998, 1997
- Program Chair, Society of Computer Simulation, Western Multi-conference 2002 , 2001, 1999, 1996
- Member, STEP/PDES Technical committee for Mechanical Products Process Planning, 1994-1995
- Treasurer, Central Arizona Chapter of the Institute of Industrial Engineers, 1991 - 1997.
- Treasurer, Society of Manufacturing Engineers CASA, Phoenix Chapter, 1992- 1993.

Proposal Review Service: NSF Microelectronics SBIR Phase I Review, NSF CCLI Review Panel, NSF Microelectronics SBIR Phase I Review, NSF ATE Review Panel, NSF Microelectronics SBIR Phase II Review, NSF Curriculum Review Panel, NSF Design and Integration Review Panel

Manuscript reviewer: Journal of CAD, Journal of CADA, Journal of Research in Science and Teaching, Journal of Simulation, IEEE Transactions of Operations Engineering, Computers in Industrial Engineering, Computers in Industry, International Journal of Computer Integrated Manufacturing, ASME Solids Modeling

Committees: Faculty Governance Committee (Chair), Strategic Planning Committee, Personnel Committee, Graduate Affairs Committee, Alpha Pi Mu, Advisor, Laboratory Facilities Committee, (Chair) Faculty Hiring Committee, Graduate Affairs Committee, Undergraduate Affairs.

UNIVERSITY SERVICE

- Associate Dean Search Committee, College of Technology and Innovation, Chair 2009.
- Mary Lou Fulton K-12 Engineering ASU K-12 Strategic Planning Committee, 2008
- Mary Lou Fulton College of Education Strategic Planning Committee, 2008
- College of Technology and Innovation Deans Search Committee, 2007
- Math Chair Search Committee, 2006-2007
- Education Department Search Committee, 2007
- Poly Core Committee, 2006-2007

CHELL A. ROBERTS

- Poly Leadership Team, 2005 - 2007
- Engineering Articulation Task Force Chair, 2007
- Engineering Articulation Task Force Committee, 2005 – present
- College Personal, 2005 - 2006
- ACDC Poly Chair, 2006
- Director of the Integrated Manufacturing Engineering Laboratory 1996 - 2005
- CRESMET Advisory Board, 2002 – 2005
- CRESMET Director Search Committee 2003
- Nano-Science Education Committee 2002
- College Subcommittee for ECE100, Chair 2001- present
- ECE100 Taskforce, Chair 2000
- College Sabbatical Leave Committee (Chair 2001) 1999 -
- College Student Affairs, 1998-2000
- MAE Search Committee, 1998
- Research Council, 1997
- Director of the Integrated Manufacturing Engineering Laboratory, 1997
- Search Committee for the Directors of the Manufacturing Institute, 9/96-97
- Integrated Manufacturing Laboratories Tech Hire Committee, Chair, 8/96-97
- College Course and Curriculum Committee, 9/96-97
- Manufacturing Institute Evaluation Committee, 7, 96- 9,96
- Manufacturing Engineering Program Coordinator, 1994-1996
- Search Committee for the Directors of the Manufacturing Institute, 9/96-
- Integrated Manufacturing Laboratories Tech Hire Committee, Chair, 8/96-
- Manufacturing Institute Evaluation Committee, 7, 96- 9,96
- Manufacturing Engineering Program Coordinator, 1994-1995
- Library Appeals Board, Member, 1991 - 1993
- Teaching Effectiveness, Member, 1990 - 1991

AWARDS

AWARDS

- ASU Professor of the Year Special Recognition, 2008-2009.
- Pritsker Award for Best Teacher in Industrial Engineering, ASU, 2001
- Co-curricular Faculty Fellow 2000
- NSF Nominated Sabbatical in Japan, 1998
- Pritsker Award for Best Teacher in IE, ASU, 1997
- Best Teacher Award, Department of IMSE (voted by students) 1997
- Faculty of the Year, Department of I&MSE, ASU, 1991
- First Place, Most Improved National Chapter, Alpha Pi Mu, (Faculty Advisor) 1991
- General Motors Scholar, Virginia Tech., 1987 - 1988
- NIOSH Fellowship, University of Utah, 1982 -1984

CHELL A. ROBERTS

- Alpha Phi Mu Industrial Engineering Honor Society, 1983
- Browning Engineering Scholarship, University of Utah, 1976, 1979
- Leadership Scholarship, University of Utah, 1976 - 1982

Community Engagement

PLANNING AND ZONING BOARD City of Mesa, 2007 - Present
MEMBER