

*Curriculum Vitae***ROY T.R. McGRANN, Ph.D.**

Associate Professor
Director of Undergraduate Studies
Department of Mechanical Engineering
Co-Director, Minor in Sustainability Engineering
Thomas J. Watson School of Engineering and Applied Science
Binghamton University (State University of New York)

Professional Registration

Professional Engineer, State of Oklahoma, 1993-2005, P.E. (Mechanical Engineering)

Academic Positions

- ◆ BINGHAMTON UNIVERSITY (STATE UNIVERSITY OF NEW YORK), Binghamton, NY
 - 2007 to Present: *Associate Professor, Mechanical Engineering Department*
 - 2009 to 2010 and 2011-Present: *Director of Undergraduate Studies, Mechanical Engineering Department*
 - 2011 to Present: *Co-Director of Sustainability Engineering Minor, Watson School*
 - 2010 to 2011: *Director of Sustainability Engineering Minor, Watson School*
 - 2006 to 2008: *Director of the General Engineering Minor, Watson School*
 - 2004 to 2008: *Director of the Engineering Design Division (EDD), Watson School*
 - 2001 to 2007: *Assistant Professor of Mechanical Engineering*
 - 1998 to 1999: *Visiting Professor of Mechanical Engineering*
- ◆ THE UNIVERSITY OF TULSA, Tulsa, OK
 - 2000: *Adjunct Professor, Engineering Physics Department*
 - 1999 to 2000: *Adjunct Professor, Mechanical Engineering Department*
 - 1996 to 1997: *Adjunct Instructor, Mechanical Engineering Department*
- ◆ TULSA COMMUNITY COLLEGE, Tulsa, OK
 - 1990 to 1998 and 2000: *Adjunct Instructor, Mathematics & Physics Division*
 - 1983: *Adjunct Instructor, Philosophy*

Education

THE UNIVERSITY OF TULSA, Tulsa, OK

Ph.D., Mechanical Engineering, 1997

Dissertation: "The Relation of Material Properties, Residual Stresses, and Thermal and Mechanical Loadings to Coating Degradation in Thermal Barrier Coatings and Tungsten Carbide Thermal Spray Coatings"

Master of Engineering, Mechanical Engineering, 1995

B.S., cum laude, Electrical Engineering, 1987

B.S., cum laude, Mechanical Engineering, 1985. Project: "Coordination of Object Transfer between Two Robotic Manipulators"

BROWN UNIVERSITY, Providence, RI

B.A., cum honoribus in praeceptus sanctus, Minor in Philosophy, 1973

Honors Thesis: "A Study of Søren Kierkegaard's *The Concept of Anxiety*"

CASCIA HALL PREPARATORY SCHOOL, Tulsa, OK

Academic Honor Societies

Tau Beta Pi (National Engineering Honor Society)
Pi Tau Sigma (National Mechanical Engineering Honor Society)
Eta Kappa Nu (National Electrical Engineering Honor Society)
Phi Gamma Kappa (University of Tulsa Academic Honor Society)

Membership in Professional Organizations

American Society for Engineering Education (ASEE)
Including Educational Research and Methods Division (ERM) and the Technology Literacy Division
(2005-10) ASEE Campus Representative, Binghamton University
(2004-06) Secretary/Treasurer, St. Lawrence Section
American Society of Mechanical Engineers (ASME)
(2007-12) Faculty Advisor Student Section, Binghamton University
(2008-09) Executive Committee, Southern Tier Section
American Welding Society (AWS)
(1998-2013) Member of AWS (ANSI) Committee C2 on Thermal Spray Coatings
Society for the History of Technology (SHOT)
Order of the Engineer

Honors/Awards

New York State Chancellor's Award for Excellence in Teaching, 2008-2009

Research, Funding, and Proposals**Projects Pending**

Time-Warner Community Grant. Go Green Institute. Co-PI with Wayne Jones (Chemistry), 2013.

Past Funded Research Awarded

Time-Warner Community Grant. Go Green Institute. Co-PI with Wayne Jones (Chemistry), Andy Cavagnetto (Education), et al., 2012. Summer program for 7th graders in a hands-on learning experience focused on sustainable engineering and environmental issues.
Chemung-Schulyer-Steuben Workforce New York (CSSWFNY). Go Green Institute. Co-PI with Wayne Jones (Chemistry), Andy Cavagnetto (Education), et al., 2011, 2010, 2009.
NYSED. Go Green Institute. Project with Wayne Jones (Chemistry), Susannah Gal (Biology), et al., 2008.
NYSED. BISI – Teacher Institute. Project with Tom O'Brien (Education), Wayne Jones (Chemistry), Susannah Gal (Biology), et al., 2008.
NSF, CCLI-EMD. Award No.: DUE-0442887. 2006-7. Autonomous Robots as a Generic Teaching Tool. Eileen Way, Roy McGrann, Craig Laramee, Harold Lewis, Robert Woods.
Rose-Ross University and Community Projects Fund, Discovery Center Sculpture, 2003-4. Roy McGrann, Yvonne Hobbes and Pokey Crocker.

Other Funded Projects

New York State SPIR (Strategic Partnership for Industrial Resurgence) Project, 2009. Analysis of Support Structure for Above-ground Swimming Pools. Crestwood Pools
New York State SPIR Project, 2002-2004. Design of Support Structure for Flight Simulator Visual Display. Binghamton Simulator Company (BSC)
New York State SPIR Project, 1998-9. Dynamic Analysis of Flight Simulator, DORON Industries
EWI Project. 2000. ESA of Aluminum, PI.
EWI, IR&D. 2001. ESA of Chrome, PI.
EWI Project. 2001. Characterization of ESA Deposition Process. PI.
OCAST Project. 1996-98. Tungsten Carbide Coatings for Chrome Plating Replacement. Participant.
Volvo Aero, Residual Stress Measurement in Thick Thermal Spray Coatings. 1997. Participant.

Teaching**Courses Taught at Binghamton University – SUNY**

Course Description	Course Number	Level	Semester Credit Hours	Number of Semesters/(Groups)
Graduate				
Advanced Computer-Aided Engineering	ME 582	Graduate	3	3
Computer-Aided Engineering	ME 581	Graduate	3	8
Design of Mechanical Elements	ME 580X	Graduate	3	1
Graduate Independent Study ¹	ME 597	Graduate	3	(14)
Practicum in Engineering Education	WTSN 701	Graduate	3	(4)
Undergraduate				
Interdisciplinary Design Project I & II ²	ME 493/494	Senior	1/1	(20)
Mechanical Vibrations	ME 421	Senior	3	1
Advanced Computer-Aided Engineering	ME 482	Senior	3	2
Practicum in Engineering Education	WTSN 492	Senior	3	(12)
Design of Mechanical Elements	ME 480X	Senior	3	1
Computer-Aided Engineering	ME 481/381	Senior/Junior	3	12
Undergraduate Independent Study ³	ME 497/397	Senior/Junior	Varies 1-3	(12)
Engineering Sustainable Energy	ME 406 (BE 306)	Senior/Junior	3	2
Mechanical Engineering Design	ME 392	Junior	4	9
Engineering Project Management	ME 372	Junior	4	1
Dynamics in Machine Design	ME 322	Junior	3	5
Engineering Design Methods	ME 372/392	Junior	1	1
Introduction to Materials Science	ME 272	Sophomore	4/3	4 [½ Co-taught]
Mechanics of Solids	ME 211	Sophomore	3	2
Exploring Engineering I/II	WTSN 111/112	Freshman	2/2	4
Non-Engineering				
Non-Engr. Graduate Independent Study ⁴	WTSN 597	Graduate	3	(2)
Interdisciplinary Design Project I & II (for the Minor in General Engineering)	WTSN 490/491	Senior	-	(9)

¹Faculty Supervisor, Graduate Independent Study Courses:

1. Introduction to Automotive Engineering, two students (Fall, 2002)
2. Autonomous Robotics, one student (Fall, 2002)
3. Introduction to Petroleum Engineering, one student (Spring, 2003)
4. Introduction to Biomaterials Science, one student (Spring, 2003)
5. Design of Vision Systems for Automatic Assembly Robots, one student (Spring, 2003)
6. Structural Fatigue Analysis, two students (Fall, 2003)
7. Structural Fatigue Analysis, one student (Spring, 2004)
8. Experimental Exterior Ballistics, one student (Spring, 2007)
9. Engineering Education Research Methods, one student (Fall, 2007)
10. Engineering Education Research Methods, two students (Spring, 2008)
11. Advanced CAE Project, one student (Spring, 2008)
12. Metal Casting and Welding, one student (Spring, 2009)
13. Metal Casting Cupola Design, one student (Fall, 2010)
14. Advanced Mechanical Component Design, one student (Fall, 2012)

²Faculty Supervisor, Inter-disciplinary Capstone Design Projects:

1. Acoustic Enclosure for Pumps on High-Velocity Spray Equipment (1999)
2. Experimental Apparatus for Modular Retainer Force Analysis (BAE Systems, 2001-2)
3. Experimental Apparatus for Analysis of Fretting Wear of Pin Connectors (BAE Systems, 2001-2)
4. Car Performance Monitoring System (2001-2)
5. Flour Mill Discharge Emergency Shut-off Device (Brandt Mills, Bloomsburg, PA, 2002-3)
6. IEEE Micromouse (2002-3) – *Winner of the IEEE Northeast Competition, Boston University, 2003*
7. Check-Valve Measuring System (Borg-Warner, 2002-3)
8. Discovery Center Sculpture (Binghamton Discovery Center, 2003-4) – *Funded by a Rose-Ross Award*
9. On-line Controlled Robotics Laboratory (2003-4)

Faculty Supervisor, Inter-disciplinary Capstone Design Projects (cont.)

10. HTTP Bio-Robotics Laboratory (2004-5)
11. Mail-Delivery Autonomous Robot (2005-6)
12. Vehicle Extraction Tool (2006-7) – *Winner of the MacDonald Prize for Best Presentation. Patent application filed.*
13. Robot Manipulator Simulation and Control for Manufacturing (2008-2009)
14. Energy Bike – LabVIEW (2009-2010)
15. Emergency UPS for Remote Residence – Sustainable Energy Source (2009-2010)
16. SAE Mini-Baha, Frame Design Team (2010-2011)
17. SAE Mini-Baha, Suspension and Steering Design Team (2010-2011)
18. Collaborative Engineering Sculpture (2011-2012)
19. Weapon Storage System with Sensor Locking for University Police Department Vehicle (2011-2012) – *Patent application filed.*
20. Anaerobic Digestion of Food Waste to Generate Power and Compost (2012-2013)

³ Faculty Supervisor, Undergraduate Independent Study Courses:

1. Mechanical Design Issues in Flat-Panel Displays, one student (Spring, 1999)
2. Introduction to Biomaterials Science, four students (Spring, 2003)
3. Introduction to Biomaterials Science, two students (Spring, 2004)
4. Introduction to Automotive Engineering, one student (Spring, 2005)
5. Introduction to Welding Engineering, one student (Fall, 2005)
6. Experimental Exterior Ballistics, two students (Spring, 2007)
7. Advanced CAE, three students (Spring, 2007)
8. Kinematics and Dynamics of Machinery, one student (Fall, 2007)
9. Introduction to Civil Engineering, two students (Spring, 2008)
10. Experimental Ballistics, one student (Spring, 2009)
11. Design of Rural Schoolhouse (EWB – Cambodia), two students (Spring, 2009)
12. Wind Power Systems Design, (Fall, 2012)

⁴ Faculty Supervisor, Non-Engineering Graduate Independent Study Courses:

1. Theology and Technology, one MAT student (Spring, 2009)
2. Freud, Feminism, and Androids, one Comparative Literature student (Fall, 2010)

Courses Taught at Other Institutions

Course	Institution	Level	Semester Credit Hours	Number of Semesters
Machine Dynamics Lab	University of Tulsa	Junior	1 (lab)	2
Properties of Materials Lab	University of Tulsa	Junior	1 (lab)	3
Dynamics	University of Tulsa	Junior	3	2
Statics	University of Tulsa	Sophomore	3	2
Mechanics of Materials	University of Tulsa	Sophomore	3	1
Engineering Physics II (Calc.)	University of Tulsa	Sophomore	4 (incl/1 lab)	1
Microcomputers for ME's	University of Tulsa	Freshman	2 (incl/1 lab)	2
General Physics I (Alg.)	Tulsa Community College	Freshman	4 (incl/1 lab)	9
General Physics II (Alg.)	Tulsa Community College	Freshman	4 (incl/1 lab)	15
College Algebra	Tulsa Community College	Freshman	3	21
Non-Engineering				
Philosophy: Introduction to Reasoning and Logic	Tulsa Community College	Sophomore	3	1

Thesis Committees

Binghamton University

Advisor/Chair of Ph.D. Committee

- Howell, Abraham: *Development and Validation of a Low Cost, Flexible, Open Source Robot for Use as a Teaching and Research Tool Across the Educational Spectrum* (Ph.D., 2012)
Gieskes, Koenraad: (Ph.D. expected 2015)

Advisor/Chair of M.S. Committee

- Gieskes, Koenraad: (M.S., 2009) *A Method of Fatigue Life Prediction and Extension of Aircraft Structures*
Roefs, James: (M.S., non-thesis, 2009)
Dartt, Kevin: (M.S., 2010) *Computational Modeling and Optimization of an Iron Melting Cupollette Furnace*
Bryant, Aric: (M.S., 2011) *Integration of Engineering and Aesthetic Design: An Examination of Design Techniques and Educational Pedagogy*
DeRusso, Charles: (M.S., non-thesis, 2012) Project: *Visual Representations in Mechanical Engineering Education*

Committee Member

- Ph.D. (13)
M.S. (41)

The University of Tulsa

- Committee Member, M.S. (1)

Service**National**

- 2007-Present ABET Program Evaluator, General Engineering Programs, ASEE
2000-2013 Member of ANSI /AWS National Standards Committee C2 on Thermal Spray Coatings
2012 NSF Proposal Review Panel for Research in Engineering Education
2012 NSF Proposal Review Panel for Coatings and Surface Modifications, SBIR/STTR Program
2011 NSF Rigorous Research in Engineering Education Workshop. Golden, CO
2010 NSF Proposal Review Panel for Coatings and Surface Modifications, SBIR/STTR Program
2009 NSF Workshop on Engineering Education Evaluation Tools. Arlington, VA
2005 NSF Research Experiences for Undergraduate (REU) Proposal Review Panel, Division of Engineering Education and Centers (EEC)

University Service (Binghamton University)

- 2011-Present Faculty Senate Budget Committee
2010-12 Faculty Fellow, Hillside Residential Community
2010 Faculty Senate Executive Committee, Watson School Representative
2010, 2005-07 Faculty Senate, Mechanical Engineering Department Representative
2008-Present Faculty Senate, ACT review of Mathematics
2006 Leadership Weekend, 3-5 November
2005-06 University Advisory Committee on Blackboard® Pedagogy
2003-04 Rosefsky International Studies Scholarship Committee

Watson School Service**Committees and Positions**

2008-Present Sustainability Engineering Program Committee, Member
 2011-Present ABET Preparation Committee, ME Department Representative
 2009-10, 2012-Present Undergraduate Studies Committee, ME Department Representative
 2011-12 Faculty Advisor, Tau Beta Pi
 2010 Planning Committee: Five-year Enrollment Growth, ME Dept. Rep.
 2009-10 Undergraduate Studies Committee, Chair
 2007-08 Faculty Search Committee, EDD Design Position, Chair
 2007-08 Search Committee for Associate Dean of Administration and Academics,
 2004-08 Senior Executive Committee (“Chair’s”) Committee

Activities

2012 External Affairs video for Bold, Brilliant, Binghamton Campaign
 2010 Guest Speaker Tau Beta Pi Meeting
 2009 Admissions Office recruiting video
 TYESA Meeting
 2008 Instructor for Engineering in EOP summer session
 2007 Panelist: “Ethics and the University”
 2006 SWE Engineer’s Week Panel: “Career, What Career?”
 Instructor Engineering and Science Summer Institute, ESSI (in conjunction with EOP)
 2005-8 Watson School Admissions Open House Presentations
 2004 Faculty Advisor, Theta Tau Engineering Fraternity
 Kids Explore
 Guest Lectures in BE 210, Engineering Effectiveness Skills
 2004-5 Guest Lecturer in ISE 491, Systems Design
 2003 Faculty Co-Advisor with Patrick Madden (CS), ACM, Battlebot Competition
 Presentation for Binghamton University Council, “Student Design Competitions”
 Exploring Engineering
 Watson School Admissions Open House Presentation
 Admissions Office video
 2003-6 Engineer’s Week Open House
 2002 Exploring Engineering
 Workshop on Ethics in Engineering, SUNY–Stony Brook.
 Presentation for SAE Seminar, “Recent Trends in Robotics”
 2002-8 Guest Lecturer in CS 434, Robotic Microcontrollers
 2001, 4 Presentation for Theta Tau

Mechanical Engineering Department Service

Director of Undergraduate Studies 2009-10, 2012-Present
 Undergraduate Studies Committee, Standing Committee, Member, 2001-Present
 Secretary of IPC promotion committee, 2012-13
 Lecturer Search Committee, 2012-13, Chair
 Faculty Search Committee, 2012-13, Design Position, Chair
 Departmental Administrative Assistant Search Committee, 2010-11, Chair
 Secretary of IPC promotion committee, 2009-10
 Secretary of IPC promotion committee, 2008-09
 Library Committee, Standing Committee, 2002-03, Member
 Enginet Committee, Standing Committee, 2003-04, Member
 Faculty Search Committee, 2001-02, Solid Mechanics Position, Member
 Faculty Search Committee, 2003-04, Dynamics Position, Member
 Faculty Search Committee, 2005-06, Lecturer Position, Member
 Faculty Advisor, ASME, 2007-12
 Faculty Advisor, SAE, 1999 and 2007-12
 Co-Faculty Advisor, Society for Automotive Engineering (SAE), 2001-07

Materials Engineering Program Service

Committee to design Materials Program Brochure, 2002

Other Professional Service

Review of manuscripts for journals

Surface and Coatings Technology, Ed. B.D. Sartwell (1999, 2002)

The Journal of Thermal Spray Technology, Ed. C.C. Berndt (2001)

Experimental Mechanics, Society of Experimental Mechanics, Ed. M. Prime (2004)

Review of manuscripts for proceedings

Proceedings of the ASEE Annual Conference and Exhibition, (2004-present)

Proceedings of the Frontiers in Education (FIE) Conference, (2005-present)

National Standards Committee

Member of TSS Committee on Recommended Practices for Measurement of Mechanical Properties of Thermal Spray Coatings (1998-2013)

Community Service

Binghamton, Invention Convention, (2008)

Vestal Middle School, five 7th grade mathematics classes (2003)

Tulsa Jewish Community Center (1993): "Introduction to PCs" for elementary school.

Tulsa Jewish Community Center (1992): "Environmental Responsibility"

Oklahoma Department of Human Services (1986-88): tutored high school students in physics and mathematics at the State juvenile shelter.

Episcopal Churches of Tulsa (1979): "Introduction to Non-Christian Religions" seminar

Chaplains' Office, Brown University (1973): Weekly discussion group for high school honor students on the "Old Testament"

Employment History (Non-Academic)

- ◆ Flo-Bend, Inc., Sand Springs, OK, flange and pipe fitting manufacturing
 - 1993 to 1994: *Director of Technical Services (Engineering, Tool and Die, Maintenance, Quality Assurance)*
 - 1990 to 1993: *Engineering Manager*
 - 1980 to 1981: *Assistant to the Engineering Manager*
 - 1978 to 1980: *Inventory Control and Cost Accounting Supervisor*
 - 1977 to 1978: *Assistant to the Manager of Flange Production*
 - 1975 to 1977: *Foreman of the Steel Foundry and Forge Crew*
 - 1974 to 1975: *Billet Saw Operator*
- ◆ Edison Welding Institute (EWI), Columbus, OH, consulting
 - 2000-2001: *Senior Project Engineer*
- ◆ Southwest Tube Manufacturing Company, Sand Springs, OK, tube manufacturing
 - 1988-1990: *Senior Project Engineer*
- ◆ Yuba Heat Transfer, Tulsa, OK, heat exchanger design and manufacturing
 - 1981-1982: *Quality Assurance Technician*
- ◆ OTHER EMPLOYMENT
 - Consultant, thermal spray coatings (1994 to present)
 - Consultant, standard cost systems for manufacturing (1978 to present)
 - Public Service Company of Oklahoma, Tulsa, OK, Telecommunications Aide (1984-5)
 - B. Dalton Bookseller, Tulsa, OK (1974-7)
 - Downes Roofing, McKeesport, PA (1973-4)
 - Microfilm, Inc., Tulsa, OK (1972) camera operator
 - U.S. Steel, National Works, McKeesport, PA, summer jobs
 - Round heater helper, seamless tube mills (1969, 1971)
 - Maintenance helper, ERW mill (1968)

Reports and Publications

A. Archived Publications (4)

- “Enhancing Engineering Computer-Aided Design Education Using Lectures Recorded on the PC,” R.T.R. McGrann, *Journal of Educational Technology Systems*, Vol. 34(2) 183-193, 2005-2006.
- “The Effect of Coating Residual Stress on the Fatigue Life of Thermal Spray Coated Steel and Aluminum,” R.T.R. McGrann, D.J. Greving, J.R. Shadley, E.F. Rybicki, T.L. Kruecke, and B.E. Bodger, *Surface and Coatings Technology*, Ed. B.T. Sartwell, 108-109 (1998), pp. 59-64.
- “Fatigue Life in Bending and Coating Residual Stress in Tungsten Carbide Thermal Spray Coatings,” R.T.R. McGrann, D.J. Greving, E.F. Rybicki, J.R. Shadley, D.A. Somerville, W.A. Emery and B.E. Bodger, *The Journal of Thermal Spray Technology*, Ed. C.C. Berndt (Metals Park, Ohio: ASM International) Vol.7 (4), December, 1998, pp. 546-552.
- “The Evaluation of Tungsten Carbide Thermal Spray Coatings as Replacements for Electrodeposited Chrome Plating on Aircraft Landing Gear,” B.E. Bodger, D.A. Somerville, W.A. Emery and R.T.R. McGrann, *Plating and Surface Finishing*, Journal of the American Electroplaters and Surface Finishers Society (AESF), Vol. 84, No. 9, September 1997, pp. 50-55.

B. Conference Proceedings and Presentations (40)

40. “Visual Representations in Mechanical Engineering Education,” Koenraad Gieskes, Charles DeRusso, and Roy McGrann, *Proceedings of the 2012 ASEE Annual Conference and Exhibition*, San Antonio, TX, 10-13 June 2012. Paper #3446.
39. “An Example of the Variations of Visual Representations in Mechanical Engineering Education,” Koenraad Gieskes, Charles DeRusso, and Roy McGrann, *Proceedings of the 40th ASEE/IEEE Frontiers in Education Conference (FIE)*, Rapid City, SD, 12-15 October 2011. Paper #1443.
38. “Introducing Engineering to Middle-School Students During a Green Summer Institute,” Koenraad Gieskes and Roy McGrann, *Proceedings of the 39th ASEE/IEEE Frontiers in Education Conference (FIE)*, Arlington, VA, 27-30 October 2010. Paper #1631.
37. “Go Green – Using Sustainability Engineering in a Middle School Summer Program,” Roy T.R. McGrann, Wayne Jones, Susannah Gall, and Andy Cavagnetto, *Proceedings of the 2010 ASEE Annual Conference and Exhibition*, Louisville, KY, 20-23 June 2010. Paper #1618.
36. “A General Engineering Minor as a Means to Encourage Technological Literacy,” Roy T.R. McGrann, *Proceedings of the 2010 ASEE Annual Conference and Exhibition*, Louisville, KY, 20-23 June 2010. Paper #1405.
35. “ABET Assessment of Interdisciplinary Student-Initiated Capstone Engineering Project,” Kevin Dartt, Roy T. R. McGrann, and James T. Stark, *Proceedings of 39th ASEE/IEEE Frontiers in Education Conference (FIE)*, San Antonio, TX, 18-21 October 2009. Paper #1073.
34. “The Role of Active Learning through Laboratory Experimentation Pertaining to Memory Retention in First-Year Engineering Programs,” Aric Bryant, Koenraad Gieskes, Roy McGrann, *Proceedings of 39th ASEE/IEEE Frontiers in Education Conference (FIE)*, San Antonio, TX, 18-21 October 2009. Paper #1443.
33. “Increasing Student-centered Learning in a First-year Engineering Program,” Koenraad Gieskes, Aric Bryant, Roy McGrann, *Proceedings of 39th ASEE/IEEE Frontiers in Education Conference (FIE)*, San Antonio, TX, 18-21 October 2009. Paper #1440.
32. “Improving an ABET Course Assessment Process That Involves Marker Problems and Projects,” Roy T.R. McGrann, *Proceedings of the 2009 ASEE Annual Conference and Exhibition*, Austin, TX, 14-17 June 2009. Paper #902.
31. “Philosophy of Technology in Engineering Education,” Roy T.R. McGrann, *Proceedings of 38th ASEE/IEEE Frontiers in Education Conference (FIE)*, Saratoga Springs, NY, 22-25 October 2008. Paper #1684.
30. “Teaching Concepts in Fuzzy Logic Control Using Low Cost Robots, PDAs, and Custom Software,” Abe Howell and Roy T.R. McGrann, *Proceedings of 38th ASEE/IEEE Frontiers in Education Conference (FIE)*, Saratoga Springs, NY, 22-25 October 2008. Paper #1187.
29. “Using Video Training Lectures in a Mechanical Engineering Computer-Aided Design Course,” Roy T.R. McGrann, *Proceedings of the 2008 ASME Design Engineering Technical Conferences*, August 3-6, 2008, Paper DETC2008-49869.
28. “Results of Using a Low Cost, Flexible Robot in a Microcontrollers and Robotics Course,” Abraham L. Howell, Roy T.R. McGrann, and Richard R. Eckert, *Proceedings of the 2008 ASEE Annual Conference and Exhibition*, Pittsburgh, PA, 22-25 June 2008. Paper #140.

27. "Autonomous Robots as a Generic Teaching Tool," Abraham Howell, Eileen Way, Craig Laramée, Roy McGrann, *Proceedings of 36th ASEE/IEEE Frontiers in Education Conference (FIE)*, San Diego, CA, 28-31 October 2006. Paper #1674.
26. "Collaborative Partnerships: Writing in the Engineering Classroom (Using Undergraduate Course Assistants from the English Department to Improve the Writing Skills of Engineering Students)," Roy T.R. McGrann, Sharon B. Fellows, and E. Matt Laferty, *Proceedings of the 35th ASEE/IEEE Frontiers in Education Conference (FIE)*, Indianapolis, IN, 19-22 October 2005. Paper #1587.
25. "Preparing Students for ABET a – k," Richard Culver, Roy McGrann, and Gary Lehmann, *Proceedings of the 35th ASEE/IEEE Frontiers in Education Conference (FIE)*, Indianapolis, IN, 19-22 October 2005. Paper #1266.
24. "Assessing the Effectiveness of a Mechanical Engineering Computer-Aided Design Course," Roy T.R. McGrann, *Proceedings of the ASEE Zone I Conference*, West Point, NY, 28-29 March, 2008.
23. "Using ZigBee to Control a Swarm of Low Cost RFID Foraging Robots," Abraham L. Howell, Roy T.R. McGrann, and Richard R. Eckert, *Robotics Science and Systems Conference Proceedings*, Atlanta, GA, 27-30 June 2007.
22. "Using Autonomous Robots to Improve University and Two-Year College Courses and Attract Secondary School Students to Science and Engineering," Eileen Way, Abraham Howell, Robert Woods, and Roy McGrann, *Proceedings of the 2006 ASEE St. Lawrence Section Conference*, Ithaca, NY, 18-19 November 2006.
21. "Using RFID and a Low Cost Robot to Evolve Foraging Behavior," Abraham Howell, Eileen Way, Roy McGrann, Richard Eckert, and Hiroki Sayama, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO*, Seattle, WA, 8-12 July 2006.
20. "Capstone Design: Sculpture and Structure," Roy T.R. McGrann, Gary Mackiewicz, Jacquelyn Walsh, Katherine Williams, Jill Griffin, Yvonne Hobbs, and Margaret Crocker, *Proceedings of the 2005 ASEE Annual Conference*, Portland, OR, 19-22 June 2005.
19. "Enhancing Engineering Computer-Aided Design Education Using Lectures Recorded on the PC," R.T.R. McGrann, *Proceedings of the Conference on Instructional Technologies (CIT)*, Binghamton, NY, 22-25 May 2005.
18. "Using PDAs on Autonomous Robots to Promote Engineering to Middle School Students," Abraham L. Howell and R.T.R. McGrann, *Proceedings of the 2003 ASEE Annual Conference*, Nashville, TN, 22-25 June 2003.
17. "Mechanical Fatigue Testing of Thermal Spray Coated Specimens: A Summary of Recent Developments," R.T.R. McGrann, Thermal Spray 2001: New Surfaces for a New Millennium, *Proceedings of the International Thermal Spray Conference, ITSC 2001*, 28 May – 30 May 2001, Singapore, Ed. C.C. Berndt, K.A. Khor, and E.F. Lugscheider (Metals Park, Ohio: ASM International, 2001), pp. 985-992.
16. "An ASM Recommended Practice for Evaluation of Young's Modulus and Poisson's Ratio of Thermal Spray Coatings Bonded to a Substrate," J.R. Shadley, E.F. Rybicki, Y. Xiong, R.T.R McGrann, and A. C. Savarimuthu, Thermal Spray: Surface Engineering via Applied Research, *Proceedings of the International Thermal Spray Conference, ITSC 2000*, Montreal, Quebec, Canada, 8-11 May, 2000, Ed. C.C. Berndt (Metals Park, Ohio: ASM International, 2000), pp. 377-384.
15. "An ASM Recommended Practice for the Modified Layer Removal Method to Evaluate Residual Stresses in Thermal Spray Coatings," J.R. Shadley, E.F. Rybicki, R.T.R McGrann, A. C. Savarimuthu and D.J. Greving, Thermal Spray: Surface Engineering via Applied Research, *Proceedings of the International Thermal Spray Conference, ITSC 2000*, Montreal, Quebec, Canada, 8-11 May, 2000, Ed. C.C. Berndt (Metals Park, Ohio: ASM International, 2000), pp. 1291-1296.
14. "Characterization of Thermal Spray Coatings Used for Dimensional Restoration," R.T.R McGrann, J. Kim, J.R. Shadley, E.F. Rybicki, and N-G. Ingesten, Thermal Spray: Surface Engineering via Applied Research, *Proceedings of the International Thermal Spray Conference, ITSC 2000*, Montreal, Quebec, Canada, 8-11 May, 2000, Ed. C.C. Berndt (Metals Park, Ohio: ASM International, 2000), pp. 341-350.

13. "Fatigue Life in HVOF Tungsten Carbide Coated Aluminum and Hard Anodized Aluminum in Cyclic Bending and the Influence of Coating Residual Stress," J.M. Wilson, J. Kim, R.T.R. McGrann, J.R. Shadley, E.F. Rybicki, D.J. Greving, and J. Nuse, *Proceedings of the United Thermal Spray Conference, UTSC '99*, 17-19 March, 1999, in Düsseldorf, Germany, Ed. E. Lugscheider and P.A. Kammer, pp. 468-473.
12. "Evaluation of Residual Stresses and Fatigue Life of Tungsten Carbide Thermal Spray Coatings in Aircraft Landing Gear Applications," R.T.R. McGrann, D.J. Greving, J.R. Shadley, E.F. Rybicki, W.A. Emery, B.E. Bodger, and D.A. Somerville, Thermal Spray: Meeting the Challenges of the 21st Century, *Proceedings the 15th International Thermal Spray Conference*, Ed. Christian Coddet, (Materials Park, OH: ASM International, 1998), Nice, France, May 25-29, 1998, Vol. I, pp. 557-562.
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