

Curriculum Vitae
MOHAMED B. TRABIA

OFFICE

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RESIDENCE

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I. General Information

Education

1987 Ph.D. in Mechanical Engineering, Arizona State University
1983 M.S. in Mechanical Engineering, Alexandria University, Alexandria, Egypt
1980 B.S. in Mechanical Engineering, Alexandria University, Alexandria, Egypt

Research Interests

- Optimization Algorithms and their Applications to Mechanical Engineering Design
- Material characterization at extreme temperature and loading conditions
- Finite Element Analysis of Mechanical Components and Systems
- Fuzzy-Logic Control
- Dynamic Analysis and Control of Mechanical Systems with Emphasis on Flexible Robots
- Analysis and Design of Robots and Mechanisms
- Biomedical applications of mechanical design
- Characterization of biomaterials
- Shock transmission
- Path Planning and Obstacle Avoidance of Mobile Robots

Employment

2010- Associate Dean for Research, Graduate Studies, and Computing
2008-2010 Academic Affairs Fellow, Office of the Vice Provost for Academic Affairs, University of Nevada, Las Vegas
2002-2008 Chairman, Department of Mechanical Engineering, University of Nevada, Las Vegas
2000- Professor, Department of Mechanical Engineering, University of Nevada, Las Vegas
1993-2000 Associate Professor, Department of Mechanical Engineering, University of Nevada, Las Vegas
1987-93 Assistant Professor, Department of Mechanical Engineering, University of Nevada, Las Vegas
1984-87 Research Assistant, Department of Mechanical Engineering, Arizona State University
1980-83 Teaching Assistant, Department of Mechanical Engineering, Alexandria University, Egypt

Industrial Experience/Consulting

- 2012 “Life cycle analysis of flow restrictive disk in landscape sprinkler,” GFC
- 2001 “Compressor Impeller P/A 107805-1 Tail-shaft Structural Optimization Analysis,”
InnSol Inc.
- 1999-00 “Characterization of Noise in a Syringe Pump, Kloehn Co.
- 1995 “Design of Automated Parking Lot Gate,” Gort Metals Corporation, Las Vegas, Nevada
- 1991 “Stress Analysis of a Pressure Vessel,” SAIC, Las Vegas, Nevada
- 1990 “Experimental Modal Analysis of LSU 48 Inch Diameter, Six-Blade, Propeller Fan,”
Loren Cook Company, Springfield, MO.
- 1988 “Gravity Meter Stabilizer Mechanism,” EG&G, Las Vegas Nevada
- 1979 “Truck Tire Noise Reduction,” Goodyear Technical Tire Center, Colmar-Berg,
Luxembourg

Professional Honors

- 2014 Tau Beta Pi Outstanding Teacher of the Year Award.
- 2012 UNLV CSUN (Consolidated Students of the University of Nevada) Faculty Award
- 2012 ASME Dedicated Service Award.
- 2011 Tau Beta Pi Outstanding Teacher of the Year Award.
- 2010 Listed in “Who's Who in Engineering Academia ”
- 2009 Distinguished Service Award, Department of Mechanical Engineering Advisory
Board.
- 2008 Service Award, Howard R. Hughes College of Engineering, UNLV.
- 2008 Outstanding Advancement of Engineering in Southern Nevada Award, ASME Silver
State Section. *This award is given to an individual who has helped advance
engineering in Southern Nevada through volunteerism, performing cutting-edge
research, or professional excellence.*
- 2005 Nominated for Best Chair Award, UNLV.
- 2004 Nominated for Best Chair Award, UNLV.
- 2004 Fellow, American Society of Mechanical Engineers.
- 2002 Tau Beta Pi Outstanding Teacher of the Year Award.
- 2001 Nominated for the Nevada Board of Regents Academic Advisor Award.
- 2001 Tau Beta Pi Outstanding Teacher of the Year Award.
- 2000 Recognized at the Regents Outstanding Reception, February 10, 2000.
- 1999 Recognized at the UNLV Runnin’ Rebel Game of November 28, 1999.
- 1999 Board of Regents Recognition of an Outstanding Faculty Member.
- 1999 Listed in “*Who's Who in Science and Engineering,*” 5th Edition.
- 1998 Outstanding Teacher, Department of Mechanical Engineering.
- 1998 Tau Beta Pi Outstanding Teacher of the Year Award.
- 1998 Nominated for the Spanos Distinguished Teaching Award.
- 1997 Nominated for the Spanos Distinguished Teaching Award.
- 1996 College of Engineering Distinguished Teaching Award.
- 1995 Outstanding Teacher, Department of Mechanical Engineering.
- 1993 Outstanding Teacher, Department of Mechanical Engineering.
- 1984 Academic Scholarship, Mechanical & Aerospace Engineering Department, Arizona

State University.
1980 B. Sc. with the Degree of Honor (equivalent to Magna Cum Laude).
1976-80 Excellence Prize, Faculty of Engineering, Alexandria University, Egypt.

Membership of Professional Societies

- American Society of Mechanical Engineers.
- Tau Beta Pi
- Phi Kappa Phi
- International Association of Science and Technology for Development
- Society of Manufacturing Engineers (Robotics International).
- American Society of Engineering Education.
- Egyptian Engineering Syndicate.

II. Research Experience

Research Grants Funded

- 2015 “Identification of Plantar Tissue Stiffness During Gait,” CTR-IN, \$17,252. (with J. Dufek and J. DeBerardinis)
- 2015 “Integrating Science, Engineering, and Language Arts within the Context of Next Generation Science and Common Core Standards,” Nevada Collaborative Teaching Improvement Program, \$60,000. (with H. Deniz)
- 2015 “Nondestructive Evaluation Techniques for Composite Materials with Low Density Gradients,” Metna Co., \$20,444. (with B. O’Toole)
- 2014-15 “Experimental Characterization and Simulation of Shock Propagation and Failure Mechanisms in Complex Materials,” NSTec, \$80,000. (with B. O’Toole)
- 2014-15 “UAV Counter Poaching,” NAVAIR, \$1,263,000. (part of eight faculty group, management).
- 2014-17 “A tissue deformation model for the diabetic foot during locomotion,” Doctoral Graduate Research Assistant Award, UNLV, \$100,000. (with J. Dufek)
- 2014 “Smart insoles for diabetic patients,” Innovation/Technology Development Award, UNLV, \$19,767. (with J. Dufek)
- 2014 “Plastic Deformation Study using Light Gas Gun,” NSTec, \$76,746. (with B. O’Toole)
- 2014 “Testing Metals in Two Stage Gas Gun,” Tuskegee University, \$5,924. (Principal Investigator, with B. O’Toole)
- 2014 “MPDV Functional Testing Using UNLV Light Gas Gun,” NSTec, \$23,938. (with B. O’Toole)
- 2013 “Establishment of a Versatile Nano/Micro-Mechanical Characterization Facility,” DoD, \$248,495 (member of a seven faculty group)
- 2012-13 “Plastic Deformation Study using Light Gas Gun-Task 50,” NSTec, \$74,000. (with B. O’Toole)
- 2012-13 “Impact And Blast Research,” Blast Containment, Inc., \$79,598 (Principal Investigator, with B. O’Toole)
- 2012-13 “From macro to micro/nano: career planning for high school students towards a brighter future in biomedical engineering, renewable energy, and microelectronics” Nevada College Access Challenge Grant, \$70,000. (with H. Zhao, Y. Jiang, and S. Zhang)
- 2012 “Research Exploratory Visit from the UNLV Center for Materials and Structures,” NASA EPSCoR, \$4,236. (with B. O’Toole and J. Thota)
- 2011 “Short Course on Biorobotics,” NASA EPSCoR, \$48,676. (with D. Lee and W. Yim)
- 2011-12 “Investigation of the Shock Mitigating Properties of Bolted Joint Connections,” Hyundai Rotem, \$84,110. (with B. O’Toole and J. Thota)
- 2010-11 “Development of Multi-Layered Composite Protection System for Large Naval Missile Canisters,” DoD, \$200,000. (with B. O’Toole and T. Wilcox)
- 2010 “Sustainable Planning for Large-scale Transportation Systems,” UNLV, \$40,000. (with A. Paz, J. Batista, and A. Scloftmann)

- 2009-10 “Autonomous Zero-Gravity Waste Sorter,” Nevada NASA Space Grant Consortium, \$3,105 (Principal Investigator)
- 2009-12 “Structural Blast Loading,” Blast Containment, Inc., \$414,860 (Principal Investigator, with B. O’Toole)
- 2009 “A Refreshable and Portable E-Braille System for the Blind and Visually Impaired,” \$50,000, Inter-institutional Biomedical Research Fund (IBRAF), Nevada System of Higher Education (NSHE). (with Y. Shen (UNR), S. Fadali (UNR), W. Yang (UNR), and B. Das)
- 2007-09 “NHI - Materials Research,” DoE, \$291,776 (Principal Investigator, with A. Roy and B. O’Toole)
- 2007-09 “ARI - UAV Task 1,” UNLV, \$94,898 (Principal Investigator, with W. Yim, Y. Chen, and R. Abella)
- 2007-09 “Design and Control of a Flapping Wing for Micro Aerial Vehicle (FWMAV),” US Air Force Research Laboratory, \$108,749 (Principal Investigator, with W. Yim, and Y. Chen)
- 2007 “Control of Miniature UAV Workshop,” NSF EPSCoR RT III, \$5,160.
- 2005-08 “Design of High Temperature Heat Exchangers,” Department of Energy, \$289,926 (with Y. Chen)
- 2005-08 “Artillery Joint Design for Shock Mitigation,” Army Research Lab, \$409,550. (Principal Investigator, with B. O’Toole)
- 2005-08 “Vehicle Joint Design for Shock Mitigation,” Army Research Lab, \$206,183. (Principal Investigator, with B. O’Toole and S. Ladkany)
- 2004 “Characterization of Butterfly Valve Failures,” Southern Nevada Water Authority, \$9,649.
- 2003-04 “Characterization of Stresses in the Southern Nevada Water Authority Intake Pump Station 1,” Southern Nevada Water Authority, \$17,660.
- 2003-04 “Joint Design for Shock Mitigation,” Army Research Lab, \$194,340. (Principal Investigator, with B. O’Toole and S. Ladkany)
- 2003-08 “Control Algorithms for Smart Fin,” Army Research Lab, \$412,524. (with W. Yim and S. Singh)
- 2003-06 “Optimization of Finite Element Modeling Methodology,” Army Research Lab, \$209,407. (Principal Investigator, with B. O’Toole)
- 2000-05 “Structural Integrity of Explosion-Proof Containers,” Bechtel, \$177,779. (with B. O’Toole)
- 2003-04 “General Ballistic Shock Modeling Issues,” Army Research Lab, \$237,315. (with B. O’Toole and S. Ladkany)
- 2001-03 “Modeling, Fabrication, and Optimization of Niobium Cavities,” Department of Energy, \$ 483,442. (Principal Investigator, with R. Schill, W. Culbreth, and Y. Chen)
- 2002 “Flow Measurement Equipment,” AAA Project Infrastructure Fund, \$31,000. (with W. Culbreth.
- 2001-02 “Delayed Hydride Cracking of Spent Fuel Cladding under Repository Conditions,” Department of Energy, \$591,810. (member of a four-faculty group)
- 2001 0B “Compressor Impeller P/A 107805-1 Tail-shaft Structural Optimization Analysis,” Walker Power System, \$3,000. (Principal Investigator)

- 2000-01 “Identification of the Dynamic Properties of Materials for the Nuclear Waste Container,” Department of Energy, \$232,994. (Principal Investigator, with B. O’Toole)
- 1999 “Nevada Manufacturing Initiative,” HRH College of Engineering and College of Business, \$12,000.
- 1998 “Diagnostics Test & Analytical Methods,” American Society of Heating, Refrigeration, and Air-Conditioning, \$88,944. (with D. Reynolds)
- 1997 “Community Engineering Resource Center for Design and Manufacturing,” UNLV, \$9,930. (member of a three faculty group)
- 1995 “Telerobotic Technology for Environmental Restoration and Waste Management,” Department of Energy, \$100,000. (with W. Yim)
- 1994 “Telerobotic Technology for Environmental Restoration and Waste Management,” Department of Energy, \$29,000. (with W. Yim)
- 1994 “Design of an Adaptive Traffic Signal Fuzzy Logic Controller,” Nevada EPSCoR, \$2,850.
- 1993 “Analysis Methods for Solving Fan Vibration Problems,” American Society of Heating, Refrigeration, and Air-Conditioning, \$78,000. (with D. Reynolds)
- 1993 “Telerobotic Technology for Environmental Restoration and Waste Management,” Department of Energy, \$56,615. (with W. Yim)
- 1993 “Optimal Design of a Robotic Workcell for Minimum Assembly Time,” University Research Grants & Fellowship Committee, UNLV, \$2,400.
- 1992 “Robot Path Planning,” National Supercomputing Center for Energy and Environment, \$2,420. (Computational time)
- 1990-94 “DOE Cooperative Agreement (Waste Package Studies),” Department of Energy, \$1,850,000. (member of a seven faculty group)
- 1990 “Experimental Path Planning and Obstacle Avoidance for Mobile Robot,” University Research Council and Howard R. Hughes College of Engineering, UNLV, \$3,950. (Principal Investigator)
- 1989 “Application of Automated Systems in Emergency Response, Inspection, and Surveillance in Nuclear Waste Transportation,” Transportation Research Center, Howard R. Hughes College of Engineering, University of Nevada, Las Vegas, \$56,000. (member of a three faculty group)
- 1987-91 “Modeling, Simulation and Time Optimal Control of Robotic Mechanisms Containing Multiple Elastic Linkage,” Army Research Office, \$1,300,000. (member of a five faculty group)

Research Grants Submitted

- 2015 “Development of “smart insoles” to diagnose the onset of plantar ulceration,” Keck Foundation, \$952,777. (with J. Dufek, P. Gaitlin, and Guogen Shan)
- 2015 “Measuring and Modeling Plantar Tissue Stiffness,” CTR-IN, \$67,382. (with J. Dufek, P. Gaitlin, and Guogen Shan).
- 2014 “Detection and Prediction of Diabetic Plantar Ulceration,” NSF, \$300,000. (with J. Dufek, P. Gatlin, D. Feng).
- 2014 “Development of a Model for Plantar Tissue Stiffness,” CTR-IN, \$10,000. (with J.

- Dufek and J. DeBerardinis)
- 2014 “Mesoscopic and atomic scale characterization and quantification of microstructural and stress states and their effects on energetic materials under shock loading conditions,” Air Force Office of Scientific Research, \$405,000. (with K. Lipinska, B. O’Toole, and N. Thadhani, Georgia Tech)
- 2014 “Diagnostic Development and Dynamic Experiments Research Facility,” NSTec, \$1,670,000. (with B. O’Toole and NSTec Collaborators)
- 2014 “Experimental Characterization and Simulation of Shock Propagation and Failure Mechanisms in Complex Materials,” NSTec, \$1,027,000. (with B. O’Toole and NSTec Collaborators)
- 2014 “US-Malaysia Workshop on Modeling and Control of Flexible Flapping-Wing Micro Aerial Vehicles: Challenges and Future Directions” NSF, \$50,621 (with C. Nataraj, Villanova University)
- 2014 “Energy, Environment, and Earth Materials at Extreme Conditions,” DoE, \$19,988,553 (Consortium of multiple universities and National Labs)
- 2013 “Development of a tissue deformation model of the diabetic foot during locomotion,” NIH CTR-IN, \$54,824, with J. Dufek.
- 2012 “SAFE Space Nuclear Rocket Test in Nevada,” NASA, \$497,169 (member of a six faculty group)
- 2012 “Building an Integrated Learning Community for Underrepresented STEM Students in Nevada,” NASA, \$1,125,000 (member of an eight UNLV and NSC faculty group)
- 2012 “Smart Finger-Wearable Assistive Display for the Wellbeing of the Blind and Visually Impaired,” NSF, \$500,000. (with Y. Shen and S. Fadali, UNR)
- 2011 “Adaptive, Sensorized, and Finger-Wearable Electrotactile Braille (E-Braille) Display,” NSF, \$370,000. (with Y. Shen and S. Fadali, UNR)
- 2011 “Building an Integrated Learning Community for STEM Students in Nevada,” NSF, \$199,598 (with T. Pang, J. Batista, D. DuBose, S. Lepp)
- 2011 “Adaptive, Sensorized, and Finger-Wearable Electrotactile Braille (E-Braille) Display,” NSF, \$250,000. (with Y. Shen and S. Fadali, UNR)
- 2010 “Sensorized E-Braille System: From Fingertip Bioimpedance,” NSF, \$250,280. (with Y. Shen and S. Fadali, UNR)
- 2010 “Center for Sustainable Engineering Curricula,” NSF, \$1,839,840. (PI, with nine collaborators from UNLV, UNR, and CSN)
- 2009 “A Refreshable, Portable, and Network-Enabled E-Braille Assistive Device for the Blind and Visually Impaired,” NSF, \$300,000. (with Y. Shen and S. Fadali, UNR)
- 2008 “Research and Development of PEM Fuel Cell Technologies for Automotive Applications,” DoE, \$50,000. (member of a nine faculty group)
- 2008 “Active Materials and Structures for Human and Unmanned Exploration Systems,” NASA EPSCoR, \$1,500,000. (member of a seven faculty group)
- 2007 “Technical Advancement of the Large 2-Axis Friction Drive Tracker for Commercial Applications of PV and Point Focus Solar,” Department of Energy, \$1,726,000. (member of a four faculty group)
- 2007 “Bio-mimetic Design and Control of Flapping-Wing Micro Aerial Vehicle (FWMAV): An Integrative Approach,” DoD EPSCoR, \$602,430. (Principal

- Investigator)
- 2006 “Integrative Bio-Mimetics (IBM): Artificial Muscles and Biorobotics,” NASA EPSCoR, \$4,000,000. (member of a five faculty group)
 - 2005 “Solid-Phase Oxygen Control System,” Department of Energy, \$172,236. (member of a five faculty group)
 - 2003 “Maximizing Reliability of Electronic Components in Future Army Artillery,” Army Research Lab, \$128,365. (with B. O’Toole and S. Ladkany)
 - 2002 “Analysis and Redesign of the LBE target/loop and some Preliminary Experimental Loop Runs for Validation- Phase One,” Department of Energy, \$114,980. (with S. Moujaes)
 - 2000 “Impact Testing of Materials for the Nuclear Waste Storage Containers to be used at Yucca Mountain,” TRW Foundation, \$49,638. (with B. O’Toole)
 - 2000 “Biomedical Engineering Research Cluster at UNLV,” NIH/IDEA/COBRE Program (part of a group)
 - 1999 “Integrating Design and Manufacturing in Undergraduate Mechanical Engineering Curriculum,” Society of Manufacturing Engineers, \$110,672. (with Z. Wang)
 - 1999 “Design of Miniature Syringe Drive,” Kloehn Co., \$156,200. (with R. Khoie and Z. Wang)
 - 1999 “Development of a Technology Transfer Initiative Between UCCSN Research Center and the HVAC Industry,” \$493,579. (Part of a group.)
 - 1999 “Robust Radiography Related Issues and Studies for Stockpile Stewardship,” Department of Energy, \$3,899,718. (Part of a group. Personal share is \$254,000)
 - 1999 “Design of a Redundant / Fault-Tolerant Drive System for Gantry Robots,” Department of Energy, \$75,000.
 - 1999 “Internet-Based Design and Manufacturing Curriculum,” Society of Manufacturing Engineers, \$110,672.
 - 1998 “Fuzzy Logic Model Tuners Using Fault Detection Schemes,” Department of Defense, \$223,000.
 - 1998 “Fuzzy Logic Control of Air-conditioning Units,” UNLV, \$4,500.
 - 1998 “Control of Multiple-Arm Cooperative Redundant Slave System Using An Adaptive Fuzzy Logic Controller,” National Science Foundation, \$147,072.
 - 1997 “Development of Remote Handling System for Environmental Restoration,” National Science Foundation EPSCoR, \$ 410,338.
 - 1996 “Development of Intelligent Remote Handling System for Environmental Restoration and Management,” National Science Foundation EPSCoR, \$ 698,520.
 - 1996 “Intelligent Control of Multiple-Arm Cooperative Redundant Slave System,” National Science Foundation, (principal investigator), \$ 144,031.
 - 1996 “Development of Intelligent Remote Handling System for Environmental Restoration and Management,” National Science Foundation EPSCoR, \$ 698,520.
 - 1995 “Design of an Adaptive Traffic Signal Fuzzy Logic Controller for Arterial Street Intersections, National Research Council, Transportation Research Board (principal investigator), \$99,754.
 - 1995 “Design of an Intelligent Vehicle Navigation (INVENT) System for Military Emergency Applications,” DoD EPSCoR, \$211,176.

- 1994 "Comfort/Air Quality Residential Control System," Center for Indoor Air Research, \$151,271.
- 1994 "Development of Tele-Autonomous Multiple Robotic System in UNLV," NSF EPSCoR, \$768,760.
- 1993 "Dynamic and Adaptive Control of Large Multi-Body Space Structures," NASA EPSCoR Cluster Proposal.
- 1993 "Vibration Control of Large Flexible Structures Using Fuzzy-Logic and Transputers," DoD EPSCoR (principal investigator), \$ 244,856.
- 1992 "Design of an Automated Guided Vehicle for Nuclear Waste Repository Applications," Department of Energy, \$90,936. (Principal Investigator)
- 1992 "Study of Surveillance and Emergency Response by Mobile Robots," Department of Energy, \$61,172.
- 1992 "Path Planning and Obstacle Avoidance of Two Cooperating Robots in Hazardous Waste Applications," Sandia National Laboratories, \$88,187. (Principal Investigator)
- 1992 "Proposal for Development of Mechanical Design-for-Manufacturing Laboratory," National Science Foundation, \$13,265. (Principal Investigator)
- 1992 "Path Planning and Obstacle Avoidance of Two Cooperating Robots," National Science Foundation, \$97,211. (Principal Investigator)
- 1992 "Intelligent Traffic Management System," CRAY Research Inc., \$31,500. (Principal Investigator)
- 1991 "Minimum Risk Robot Path Planning in Nuclear Waste Repository Sites," Department of Energy, \$58,343.
- 1991 "Design of an Automated Omni-Directional Vehicle for Nuclear Waste Repository," Department of Energy, \$81,612. (Principal Investigator)
- 1991 "Proposal for Development of Mechanical Design-for-Manufacturing Laboratory," National Science Foundation, \$13,265. (Principal Investigator)
- 1991 "Path Planning of Industrial Robots," CRAY Research Inc., \$21,772. (Principal Investigator)
- 1990 "Research Constellation on Intelligent and Adaptive Systems," EPSCoR Cluster Proposal.
- 1990 "Real-Time Simulation and Control of Flexible Robots," CRAY Research Inc., \$22,419. (Principal Investigator)

Travel Grants

- 2000 University Travel Grant, \$480.
- 1999 University Travel Grant, \$715.
- 1997 University Travel Grant, \$350.
- 1996 National Science Foundation, \$395.
- 1994 Barrick Travel Fund, UNLV, \$150.
- 1993 Barrick Travel Fund, UNLV, \$600.
- 1991 Barrick Travel Fund, UNLV, \$400.
- 1991 TRW Travel support through SME, \$200.

Postgraduate Scholars Sponsored

- Dr. Jagadeep Thota, 2010-2013
- Dr. Qin Liu, 2007-08
- Dr. Joon Lee, 2008
- Dr. Jinhua Huang, 2004

Publications

Book Review

- 2007 1. Trabia, M., Book Review of “Fuzzy Control of Queuing Systems,” by Runtong Zhang, Yannis A. Phillis, Vassilis S. Kouikoglou, Springer, 2005, International Journal of Robust and Nonlinear Control (IJRNC), Vol. 17, No. 7, pp. 676-677, 2007.

Patents

- 2013 1. 8,617,221, “Apparatus and methods for bone fracture fixation,” with R. Wang.
 2009 2. 7,578,835, “Apparatus and methods for bone fracture reduction and fixation,” with R. Wang.
 2007 3. 7,235,077, “Bone fixation device and method,” with R. Wang.

Provisional Patents

- 2014 1. “Actuated Foot Orthotic with Embedded Sensors and Systems and Methods For Designing Same,” with J. Dufek.
 2014 2. “Method and Apparatus for Monitoring Diet and Activity,” with J. Inouye and V. Muthukumar.

Patent Disclosure

- 2013 “Actuated Foot Orthotic with Embedded Sensors,” with J. Dufek
 1991 “Omni-directional Mobile Robot,” with W. Yim.

Book Chapters

- 2015 1. B. O’Toole, M. Trabia, R. Hixson, S. Roy, M. Pena, S. Becker, E. Daykin, E. Machorro, R. Jennings, M. Matthes, “Use of a Multiplexed Photonic Doppler Velocimetry (MPDV) System to Study Plastic Deformation of Metallic Steel Plates in High Velocity Impact,” Fracture, Fatigue, Failure and Damage Evolution, Volume 8, Springer Verlag 2015. Originally presented at the SEM 2015 Annual Conference & Exposition on Experimental and Applied Mechanics, Costa Mesa, California, June, 2015.
 2006 2. M. Trabia, L. Z. Shi, and N. Hodge, “A Fuzzy Logic Controller for Autonomous Wheeled Vehicles,” Mobile Robotics, Moving Intelligence, Jonas Buchli, Editor, 2006, Advanced Robotic Systems International, Vienna, Austria, EU.
 1994 3. M. Nalley, and M. Trabia, “Optimal Placement of a SCARA-Type Robot for Traversal of a Prescribed Path in Near-Minimum Time with Actuator and Obstacle Constraints,” Advances in Manufacturing System: Design, Modeling and Analysis, R. S. Sodhi, Editor, Elsevier, Amsterdam, 1994, pp. 253-261.

Refereed Journal Publications

- 2015
1. J. Inouye, J. Mercer, C. Mobley, M. Trabia, and K. Speck, "Exploring the Use of Wearable Technology to Monitor Activity and Conduct Diet Assessments in a Rural Underserved Population," accepted for publication, SAGE Open Medicine.
 2. DeBerardinis, J., Trabia, M.B. & Dufek, J., "Detection of Diabetic Ulceration through Plantar Pressure Measurement: A Review," accepted for publication, Open Access Journal of Science and Technology.
 3. J. Thota, M. Trabia, and B. O'Toole, "Computational Prediction of Low Impact Shock Propagation in a Lab-Scale Space Bolted Frame Structure," International Journal of Computational Methods and Experimental Measurements, Vol. 3, No. 2, 2015, pp. 139-149.
 4. J. Inouye, J. Mercer. C. Mobley, M. Trabia, D. Feng, K. Daub, K. Connelly, "Activity and Diet Assessments with Wearable Technology in a Rural Setting," Hawai'i Journal of Medicine & Public Health, Vol. 74, No. 7, 2015.
 5. B. O'Toole, M. Trabia, R. Hixson, S. Roy, M. Pena, S. Becker, E. Daykin, E. Machorro, R. Jennings, M. Matthes, "Modeling Plastic Deformation of Steel Plates in Hypervelocity Impact Experiments," Procedia Engineering 103, 2015, pp. 458-465. Originally presented at the 13th Hypervelocity Impact Symposium, April, 2015.
 6. M. Saadeh and M. Trabia, "Parameters Identification for a Composite Piezoelectric Actuator Dynamics," Actuators, Vol. 4, No. 1, 2015, pp. 39-59.
- 2014
7. D. Somasundaram, M. Trabia, and B. O'Toole, "A Methodology for Predicting High Impact Shock Propagation within Bolted-Joint Structures," International Journal of Impact Engineering, 2014.
- 2013
8. D. Somasundaram, M. Trabia, B. O'Toole, and Q. Liu, "Shock Mitigation for Electronic Boards within a Projectile," International Journal of Computational Methods and Experimental Measurements, Vol. 1, No. 4, 2013, pp. 416-439.
 9. M. Saadeh and M. B. Trabia, "Identification of a Force Sensing Resistor for Tactile Applications," Journal of Intelligent Material Systems and Structures, Vol. 27, No. 7, 2013, pp.813-827.
 10. M. Zeng, T. Ma, B. Sundén, M.B. Trabia, M.B. and Q. Wang, "Effect of Lateral Fin Profiles on Stress Performance of Internally Finned Tubes in a High Temperature Heat Exchanger," Applied Thermal Engineering, Vol. 50, No. 1, 2013, pp. 886-895.
- 2012
11. G. Ladkany and M. Trabia, "A Genetic Algorithm with Weighted Average Normally-Distributed Arithmetic Crossover and Twinkling," Applied Mathematics, Vol. 3 No. 10, 2012, pp. 1220-1235.
 12. V. Ponyavin, Y. T. Chen, T. Mohamed, M. Trabia, A. E. Hechanova, and M. Wilson, "Design of a Compact Ceramic High Temperature Heat Exchanger and Chemical Decomposer for Hydrogen Production," International Journal of Heat Transfer Engineering, Vol. 33, No. 10, 2012, pp. 853-870.
- 2011
13. D. Somasundaram and M. Trabia, "A Fuzzy-Controlled Hooke-Jeeves Optimization Algorithm," Journal of Engineering Optimization, Vol. 43, No.

- 10, 2011, pp. 1043-1062.
14. J. Thota, B. O'Toole, and M. Trabia, "Optimization of Shock Response within a Military Vehicle Space Frame," *Structural and Multidisciplinary Optimization*, 2011, pp. 1-15.
 15. M. B. Trabia, W. Yim, and M. Saadeh, "Modeling of Hysteresis and Backlash for a Smart Fin with a Piezoelectric Actuator," *Journal of Intelligent Material Systems and Structures*, Vol. 22, No. 11, 2011, pp. 1161-1176.
 - 2010 16. M. Saadeh, M. Trabia, Yantao Shen, and M. Fadali, "Design of a Wearable Fingertip Haptic Braille Device," *ASME Journal of Medical Devices*. Vol. 4, no. 2, 027524, 2010.
 - 2009 17. K. A. F. Moustafa, M. B. Trabia, and M. I. Ismail, "Modelling and control of an overhead crane with a variable length flexible cable," *International Journal of Computer Applications in Technology*, Vol. 34, No. 3, 2009, pp. 216-228.
 18. S. Gutta, J. Lee, M. Trabia, and W. Yim, "Modeling of Ionic Polymer Metal Composite Actuator Dynamics using a Large Deflection Beam Model," *Smart Materials and Structures*, Vol. 18, 2009, pp. 1-9.
 19. K. A. F. Moustafa, M. B. Trabia, and M. N. Emira, S. Elnaggar, "Modeling and Simulation of a Three-Link Spatial Manipulator with One Flexible Link," *International Journal of Modelling and Simulation*, Vol.29, No.4, 2009.
 20. J. Thota, M. Trabia, B. O'Toole and A. Ayyaswamy, "Structural Response Optimization of a Light-Weight Composite Blast Containment Vessel," *ASME Journal of Pressure Vessel Technology*, Vol. 131, No. 3, 2009, 031209.
 21. K. A. F. Moustafa, M. B. Trabia, and M. I. Ismail, "Modeling and Control of an Overhead Crane with a Variable Length Flexible Cable," *International Journal of Computer Applications in Technology (IJCAT)*, Volume 34, No. 3 2009, pp. 216-228.
 - 2008 22. V. Chakka, M. Trabia, B. O'Toole, S. Sridharala, S. Ladkany, and M. Chowdhury, "Modeling and Reduction of Shocks on Electronic Components within a Projectile," *International Journal of Impact Engineering*, Volume 35, 2008, pp. 1326-1338. *The paper was reprinted as Army Research Laboratory Report, ARL-RP-217, August 2008.*
 23. V. Mudupu, M. Trabia, W. Yim, P. Weinacht, "Design and validation of a fuzzy logic controller for a smart projectile fin with a piezoelectric actuator," *Smart Materials and Structures*, Volume 17, Number 3, 2008, pp. 1-12.
 24. M. Trabia, J. Renno, and K. Moustafa, "Generalized Design of an Anti-Swing Fuzzy Logic Controller for an Overhead Crane with Hoist," *Journal of Vibration and Control*, Volume 14, Number 3, 2008, pp. 319-346.
 25. V. Ponyavin, Y. T. Chen, T. Mohamed, M. Trabia, A. E. Hechanova, M. Wilson, "Parametric Study of Sulfuric Acid Decomposer for Hydrogen Production," *Progress in Nuclear Energy*, Volume 50, 2008, pp. 427-433.
 26. M. B. Trabia, B. O'Toole, J. Thota, and K. Matta, "Finite Element Modeling of a Light-Weight Composite Blast Containment Vessel," *ASME Journal of Pressure Vessel Technology*, Volume 130, 011205, 2008, pp. 1-7.
 - 2006 27. B. O'Toole, M. B. Trabia, J. Thota, T. Wilcox, K. K. Nakelswamy, "Structural

- Response Of Blast Loaded Composite Containment Vessels,” SAMPE Journal, Volume 42, n4, 2006, pp. 6-13.
28. L. Shi, and M. Trabia, “Design and Tuning of Importance-Based Fuzzy Logic Controller for a Flexible-Link Manipulator,” Journal of Intelligent and Fuzzy Systems, Volume 17, Number 3, 2006, pp. 313 - 323.
- 2005 29. S. Mani, S. Singh, S. Parimi, W. Yim, and M. Trabia, “Adaptive Rotation of a Smart Projectile Fin Using a Piezoelectric Flexible Beam Actuator,” Journal of Vibration and Control, Vol. 11, No. 8, 2005, pp. 1085-1102.
30. L. Shi, and M. Trabia, “Comparison of Distributed PD-Like and Importance-Based Fuzzy Logic Controllers for Two-Link Rigid-Flexible Manipulator,” Journal of Vibration and Control, Vol. 11, No. 6, 2005, pp. 723-748.
- 2004 31. M. Trabia, “A Hybrid Fuzzy Simplex Genetic Algorithm,” ASME Journal of Mechanical Design, November 2004, pp. 969-974.
32. N. Hodge, L. Shi, and M. Trabia, “A Distributed Fuzzy Logic Controller for an Autonomous Vehicle.” Journal of Robotic Systems, October 2004, Volume 21, Number 10, pp. 499-516.
- 2003 33. Z. Ceylan, and M. Trabia, “Optimization of the Closure-Weld Region of Cylindrical Containers for Long-Term Corrosion Resistance Using the Successive Heuristic Quadratic Approximation Technique,” ASME Journal of Mechanical Design, September 2003, pp. 533-539.
- 2001 34. M. Trabia, and L.Z. Shi “Design and Tuning of a Distributed Fuzzy Logic Controller for Flexible-Link Manipulators,” Journal of Intelligent & Fuzzy Systems, Volume 10, Number 4, 2001, pp. 215-233.
35. M. Trabia, and X. Lu, “A Fuzzy Adaptive Simplex Search Optimization Algorithm,” ASME Journal of Mechanical Design, Vol. 123, June 2001, pp. 216-225.
- 2000 36. M. Trabia, M. Kaseko, and A. Murali, “A Two-Stage Fuzzy Logic Controller for Traffic Signals,” Transportation Research Part C, Volume 7, Number 6, March 2000, pp. 353-367.
37. M. Nalley, and M. Trabia, “Control of Overhead Cranes Using Fuzzy Logic Controller,” Journal of Intelligent & Fuzzy Systems, Volume 8, Number 1, January 2000, pp. 1-18.
- 1999 38. M. Trabia, and M. Kathari “Placement of a Manipulator for Minimum Cycle Time,” Journal of Robotic Systems, August 1999, pp. 419-433.
- 1998 39. M. Trabia, and W. McCarthy, “Design of Fuzzy Logic Controllers for Optimal Performance,” Journal of Intelligent & Fuzzy Systems, Volume 6, Number 4, December 1998, pp. 459-470.
40. C. Teng, D. Reynolds, and M. Trabia, “Methods for Resolving Fan/Motor Vibration Problems in Air-Conditioning Units: I-Experimental Procedures for Identifying Vibration Modes Excited by Fan Impeller Imbalance,” ASHRAE Transactions: Research, 1998, pp. 232-244.
41. C. Teng, M. Trabia, and D. Reynolds, “Methods for Resolving Fan/Motor Vibration Problems in Air-Conditioning Units: II-Theoretical Models for Identifying Vibration Modes Excited by Fan Impeller Imbalance,” ASHRAE

- Transactions: Research, 1998, pp. 245-254.
- 1996 42. J. Li, and M. Trabia, "Adaptive path planning and obstacle avoidance for a robot with a large degree of redundancy," *Journal of Robotic Systems*, March 1996, pp. 163-176.
- 1995 43. S. Abayaweera, and M. Trabia, "A Decompositional Algorithm for the Design of a Minimum Weight Multi-Stage Gearbox," *Journal of Applied Mechanisms and Robotics*, Volume 2, No. 3, 1995, pp. 42-48.
- 1994 44. A. Bhargava, M. Trabia, and S. Moujaes, "Optimal Design of a Cold-Sea-Water Chiller," *ASHRAE Transactions: Research*, 1994, pp. 122-130.
- 1993 45. M. Trabia, "Planning Near Minimum-Collision-Free Paths for Robots," *IEEE Transactions on Systems, Man, and Cybernetics*, September 1993, pp. 1481-1488.
- 1992 46. M. Trabia, and J. K. Davidson, "Substitute Wrists for the Attitude and Control of a Robot Tool Carried by a 3-R Spherical Wrist," *ASME Journal of Mechanical Design*, March 1992, pp. 143-152.
- 1990 47. M. Trabia, and W. Yim, "Dynamic Simulation of a Three Degrees of Freedom Hydraulically Activated Robot Arm with Flexible Links," *SME Transactions on Robotics Research*, Vol. 1, 1990, pp. 8-17 - 8-40.
- 1989 48. M. Trabia, and J. K. Davidson, "Design Conditions for the Orientation and Attitude of a Robot Tool Carried by a 3-R Spherical Wrist," *ASME Journal of Mechanisms, Transmissions, and Automation in Design*, June 1989, pp. 176-187.
- 1983 49. M. Mostafa, T. Awad, M. Trabia, "A Computer Method for Kinematic and Dynamic Analysis of Plane Mechanisms," *Bulletin of the Faculty of Engineering, Alexandria University*, vol. XII, 1983.
50. M. Mostafa, T. Awad, M. Trabia, "Optimum Dynamic Performance Using Nonlinear Programming," *Bulletin of the Faculty of Engineering, Alexandria University*, vol. XII, 1983.

Refereed Conferences Publications

- 2016 1. B. O'Toole and M. Trabia, "Modeling Hypervelocity Impact on Steel Plates," *International Symposium on Ballistics*, Edinbrgh, Scotland, May 2016.
- 2015 2. J. DeBerardinis, M. B. Trabia, D. Samson, and J. S. Dufek, "Dynamic Reliability and Validity of Pressure-Measuring Insoles," *39th Annual Meeting of the American Society of Biomechanics*, Columbus, Ohio, August, 2015.
3. J. DeBerardinis, M. B. Trabia, D. Samson, and J. S. Dufek, "Effect of Walking Speed on the Validity of Pressure-Measuring Insoles," *Mountain West Clinical Translational Research Annual Meeting*, Las Vegas, Nevada, June, 2015.
4. Z. Cook, S. Pirbastami, B. O'Toole, M. Trabia, and V. Dandolu, "Practical and Inexpensive Procedure to Measure Mechanical Properties of Vaginal Tissue," *SUFU 2015 Winter Meeting*, February 2015.
5. J. Inouye, J. Mercer, C. Mobley, M. Trabia, D. Feng, L. Allen, K. Daub, K. Speck, "Activity and Diet Assessments with Wearable Technology in a Rural Setting," *4th Cross Cultural Health Care Conference*, Honolulu, Hawaii, January

- 2015.
6. J. DeBerardinis, D. Samson, M. Trabia, J. Dufek, "Determination of Heel Deformation Using a Two-Camera System," Annual Southwest Regional Chapter of the American College of Sports Medicine, Costa Mesa, CA, October, 2014. (poster)
 7. D. Samson, J. DeBerardinis, M. Trabia, J. Dufek, "Methodology for Evaluating Heel Deformation Utilizing a Variable Sized Cursor Scan," Southwest Regional Chapter of the American College of Sports Medicine, Costa Mesa, CA, October, 2014. (poster)
 8. M. Trabia, B. O'Toole, S. Roy, D. Somasoundarum, R. Jennings, M. Matthes, R. Hixson, S. Becker, E. Daykin, M. Pena, E. Machorro, "Computational model verification using multiplexed photonic Doppler velocimetry for high-velocity projectile impact on steel targets," International Conference on Multiscale Materials Modeling 2014, Berkeley, California, October, 2014. (poster)
 9. Y. Liu, J. Mitchell, W. Yima, Y. Chena, R. Wangb, M. Trabia, "Frequency dependent viscoelastic properties of porcine upper airway," 7th World Congress of Biomechanics, Boston, Massachusetts, July, 2014.
 - 2014 10. M. Slewa, B. O'Toole, and M. Trabia, "Effect of High Velocity Impact on Grain Structure of A36 Steel," PDV Workshop 2014, Las Vegas, NV, June 2014. (presentation only)
 11. S. Roy, B. O'Toole, M. Trabia, R. Jennings, M. Matthes, M. Pena, E. Daykin, R. Hixson, S. Becker, C. Perez, E. Machorro, "Use of Multiplexed Photonic Doppler Velocimetry (MPDV) in Measuring Plastic Deformation of Plates under Hypervelocity Condition," PDV Workshop 2014, Las Vegas, NV, June 2014. (presentation only)
 12. D. Somasandaram, M. Trabia, B. O'Toole, R. Hixson, "Variables affecting smoothed particle hydrodynamics simulation of high velocity flyer plate impact experiments," 13th International Conference on Structures Under Shock and Impact, New Forest, United Kingdom, June, 2014.
 13. M. Trabia, B. O'Toole, S. Roy, D. Somasoundarum, R. Jennings, M. Matthes, R. Hixson, S. Becker, E. Daykin, M. Pena, E. Machorro, "An Approach for Measuring and Modeling of Plastic Deformation of Metallic Plates During High Velocity Impact," NAFEMS Americas Conference, Colorado Springs, Colorado, May 2014.
 14. S. Roy, M. Trabia, B. O'Toole, J. Thota, R. Jennings, D. Somasandaram, M. Mathes, S. Becker, E. Daykin, R. Hixson, E. Machorro, T. Meehan, M. Pena, C. Perez, N. Snipe, K. Crawford, and S. Gardner, "Plastic Deformation of Steel Plates under High Impact Loading," 84th Shock & Vibration Symposium, Atlanta, GA, November, 2013.
 15. J. Thota, M. Trabia, B. O'Toole, C. Lee, H. Park, M. Koo, K. Lee, and H. Kim "Optimization of the shock mitigation layer in the space frame joints of an armored vehicle," 39th Design Automation Conference, Portland, Oregon, August 2013.
 - 2013 16. M. Trabia, B. O'Toole, J. Thota, R. Jennings, D. Somasundaram, S. Roy, S.

- Becker, E. Daykin, R. Hixson, “Computational Simulation and Experimental Study of Plastic Deformation in A36 Steel during High Velocity Impact,” ASME Verification & Validation Symposium, Las Vegas, Nevada, May 2013 (*abstract*).
17. J. Thota, M. Saadeh, M. Trabia, B. O’Toole, C. Lee, K. Woo, H. Park, K. Lee, M. Koo, and K. Lee, “Material Characterization of Rubberized Aramid for Shock Mitigation,” 2012 ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, November 2012.
- 2012 18. J. Thota, D. Somasundaram, R. Jennings, M. Trabia, B. O’Toole, C. Lee, K. Woo, H. Park, K. Lee, M. Koo, and K. Lee, “Assessment of the Performance of an Armored Vehicle Joint Using a Two-Stage Gas Gun And Computational Analysis,” 2012 ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, November 2012 (*abstract*).
19. M. Saadeh and M. Trabia, “A Hybrid Master-Slave Genetic Algorithm-Neural Network Approach for Modeling a Piezoelectric Actuator,” 2012 ASME, Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Stone Mountain, September 2012.
20. J. Thota, M. Trabia, and B. O’Toole, “Finite Element Validation of Low Impact Response on a Lab-Scale Space Frame Structure,” ASME Verification & Validation Symposium, Las Vegas, Nevada, May 2012 (*abstract*).
21. J. Thota, M. Trabia, and B. O’Toole, “Simulation of Shock Response in a Lab-Scale Space Frame Structure Using Finite Element Analysis,” 2011 ASME International Mechanical Engineering Congress and Exposition, Denver, Colorado, November 2011.
- 2011 22. M. Saadeh and M. Trabia, “Identification of a Force Sensing Resistor for Tactile Applications,” 2011 ASME, Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Scottsdale, Arizona, September 2011, *Finalist in the Best Student Hardware Competition*.
23. A. Barreau, R. Hernandez, B. O’Toole, and M. Trabia, “Failure Strength of Silicone Carbide Ceramic Disks under Biaxial Flexure when Exposed to Elevated Temperatures and Concentrated Sulfuric Acid,” SAMPE 2011 Conference, Long Beach, CA, May 2011.
24. S. Gutta, W. Yim, and M. Trabia, “Path Planning and Control for Underwater Vehicle Driven by an Ionic Polymer Metal Composite (IPMC) Actuator,” 2010 ASME International Mechanical Engineering Congress and Exposition, Vancouver, Canada, November 2010.
- 2010 25. M. Saadeh and M. Trabia, “Development of a Measuring System of Contact Force for Braille Reading Using a Six-Axis Force Sensor” 2010 ASME International Mechanical Engineering Congress and Exposition, Vancouver, Canada, November 2010.
26. M. Trabia, W. Yim, and M. Saadeh, “Modeling of Hysteresis and Backlash within a Smart Fin with A Piezoelectric Actuator,” 2010 ASME, Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Philadelphia, Pennsylvania, September 2010.

27. G. Ladkany and M. B. Trabia, "A Hybrid Biomimetic Genetic Algorithm Using a Local Fuzzy Simplex Search," 36th Design Automation Conference, Montreal, Quebec, Canada, August 2010.
28. M. Saadeh, M. Trabia, Y. Shen, and M. Fadali, "Design of a Wearable Fingertip Haptic Braille Device," 2010 Design of Medical Devices Conference, Minneapolis, MN, April, 2010.
29. J. Thota, M. B. Trabia, and B. O'Toole, "Shock Optimization in a Military Vehicle with Internal Space Frame," 2009 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2009.
- 2009 30. M. Trabia, W. Yim, Z. Rehmat, and J. Roll, "Flight Characteristics of Flapping Wing Miniature Air Vehicles with "Figure-8" Spherical Motion," 2009 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2009.
31. S. Gutta, W. Yim, and M. Trabia, "Yaw Angle and Speed Control of Underwater Vehicle Propelled By Ionic Polymer Metal Composite (IPMC) Actuator," ASME 2009 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Oxnard, California, September 2009.
32. Z. Rehmat, J. Roll, J. Lee, W. Yim, and M. Trabia, W. Yim, "Design of "Figure-8" Spherical Motion Flapping Wing for Miniature UAV," 2009 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, San Diego California, August 2009.
33. J. Thota, M. B. Trabia, and B. O'Toole, "Shock Optimization in a Military Vehicle with Internal Space Frame," 10th US National Congress on Computational Mechanics, Columbus, Ohio, July 2009 (*abstract*).
34. S. Gutta, W. Yim, and M. Trabia, "Modeling dynamics of underwater vehicles actuated by ionic polymer metal composite (IPMC) actuators," 16th Annual Symposium of SPIE on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, San Diego, California, March 2009.
35. V. Mudupu, M. B. Trabia, W. Yim, and M. Saadeh, "Modeling of a Piezoelectrically Actuated Smart Projectile Fin Hysteresis," The 3rd International Conference on Mechatronics (ICOM'08), Kuala Lumpur, Malaysia, December, 2008, pp. 335-340.
- 2008 36. A. Fayed, M. B. Trabia, and M. ElMadany, "Optimization of Weighting Parameters for an Active Suspension System of a Vehicle," Boston, Massachusetts, November 2008.
37. J. Thota, M. B. Trabia, and B. O'Toole, "Optimization of a Military Vehicle Space Frame Subject to High Impact Loading," 2008 ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts, November 2008.
38. D. S. Somasundaram, M. B. Trabia, B. O'Toole, and Q. Liu, "Experimental Investigation of Shock Mitigation of Electronic Boards within Projectiles," 2008 ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts, November 2008.
39. D. S. Somasundaram and M. B. Trabia, "Fuzzy-controlled Hooke-Jeeves

- Optimization Search Algorithm,” 34th Design Automation Conference, New York, New York, August 2008.
40. G. Ladkany and M. B. Trabia, “Incorporating Twinkling in Genetic Algorithms for Global Optimization,” 34th Design Automation Conference, New York, New York, August 2008.
 41. S. Gutta, M. B. Trabia, and W. Yim, “Modeling of Ionic Polymer Metal Composite (IPMC) Actuator Dynamics Using Large Deflection Beam Model,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 - 2007 42. S. Sridharala, M. Trabia, A. Ayyaswamy, B. O’Toole, Q. Liu, and M. Chowdhury, “Characterization of Electronic Board Material Properties under Impact Loading,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 43. K. Moustafa, M. Ismail, and M. B. Trabia, and, “Modeling and Control of a Variable Length Flexible Cable Overhead Crane Using the Modified Galerkin Method,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 44. J. Thota, A. Ayyaswamy, M. Trabia, and B. O’Toole, “Optimization of a Light-Weight Composite Blast Containment Vessel Structural Response,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 45. V. Ponyavin, T. Mohamed, M. Trabia, Y. Chen, and A. Hechanova, “Transient Analysis of a Ceramic High Temperature Heat Exchanger and Chemical Decomposer,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 46. V. Mudupu, M. Trabia, W. Yim, P. Weinacht, “Design and Validation of Fuzzy Logic Control for a Smart Projectile Fin,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 47. M. Trabia and K. Nelson, “Incorporating Rapid Prototyping Machine in Teaching Mechanical Engineering Design,” 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, November 2007.
 48. U. Sakaray, B. O’Toole, and M. Trabia, J. Thota “Optimization of a Vehicle Space Frame under Ballistic Impact Loading,” 33rd Design Automation Conference, Las Vegas, Nevada, September 2007.
 49. V. Mudupu, M. Trabia, W. Yim, and P. Weinacht, “GA-Based Fuzzy Logic Control for a Smart Fin of a Projectile,” 21st Biennial Conference on Mechanical Vibration and Noise, Las Vegas, Nevada, September 2007.
 50. M. Trabia, W. Yim, P. Weinacht, and V. Mudupu, “Control of a Projectile Smart Fin Using an Inverse Dynamics-Based Fuzzy Logic Controller,” 21st Biennial Conference on Mechanical Vibration and Noise, Las Vegas, Nevada, September 2007.
 51. K. Moustafa, M. Trabia, M. Ismail, “Finite Element versus Galerkin Approximation for Modeling and Control of a Class of Flexible Manipulators,” International Conference on Artificial Intelligence and Pattern Recognition

- (AIPR-07) Orlando, USA, on July 9-12, 2007, pp. 88-94.
52. P. Ginobbi, W. Vodrazka, J. Wang, H. Selvaraj, N. Ghafoori, M. Trabia, L. Gewali and R. Venkat, "College-wide Senior Design Competition: A Motivating Approach," National Capstone Design Course Conference, June 13-15 2007, Boulder, Colorado.
 53. B. O'Toole, M. Trabia, and J. Thota, "Analysis and Optimization of a Composite Blast Containment Vessel," Proceedings of the 17th U.S. Army Symposium on Solid Mechanics, April 2-5, 2007, Baltimore, Maryland.
 54. V. Ponyavin, Y. Chen, T. Mohamed, M. Trabia, and A. Hechanova, "Parametric Study of Sulfuric Acid Decomposer for Hydrogen Production," 2nd COE-INES International Symposium on Innovative Nuclear Energy Systems, INES-2, Yokohama, Japan, November 2006.
 - 2006 55. V. Ponyavin, T. Mohamed, M. Wilson, M. Trabia, Y. Chen, and A. Hechanova, "Modeling and Parametric Study of A Ceramic High Temperature Heat Exchanger and Chemical decomposer," 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 2006.
 56. M. Trabia, J. Renno, and K. Moustafa, "A Single Phase Anti-Swing Fuzzy Logic Controller for an Overhead Crane with Hoisting," 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 2006.
 57. V. Chakka, M. Trabia, B. O'Toole, S. Sridharala, S. Ladkany, and M. Chowdhury, "Shock Reduction for Electronic Components within a Projectile," 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 2006.
 58. M. Trabia, B. O'Toole, V. Chakka, and M. Chowdhury, "Optimization of Finite Element Modeling Methodology for Projectile Models," 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 2006.
 59. U. Sakaray, B. O'Toole, and M. Trabia, "Full Frontal Collision Simulation and Optimization of Joint Design for the Space Frame of a Military Vehicle," 77th Shock & Vibration Symposium, Monterey, CA, October, 2006.
 60. M. Trabia, J. Huang, B. O'Toole, U. Sakaray, "Optimization of Joint Design for Bottom Panel of a Military Vehicle for Shock Reduction Under Blast Loading," 77th Shock & Vibration Symposium, Monterey, CA, October, 2006.
 61. J. Thota, M. Trabia, B. O'Toole, and S. Sridharala, "Optimization of a Light-Weight Composite Explosion-Proof Vessel," 77th Shock & Vibration Symposium, Monterey, CA, October, 2006.
 62. W. Yim, M. Trabia, J. Renno, J. Lee, and K. Kim, "Dynamic Modeling of Segmented Ionic Polymer Metal Composite (IPMC) Actuator," 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, October 2006.
 63. M. Trabia, J. Renno, and K. Moustafa, "A general anti-swing fuzzy controller for an overhead crane with hoisting," 2006 IEEE International Conference on Fuzzy Systems, July, 2006, Vancouver, Canada, pp. 3091-3098. *Winner of the*

Best Session Presentation Award.

64. B. O'Toole, M. Trabia, J. Thota, T. Wilcox, K. Karpanan, "Structural Response of Blast Loaded Composite Containment Vessels," SAMPE '06 Conference, Long Beach, CA, April 2006. *Winner of the Conference Best Paper Award.*
65. M. Trabia, B. O'Toole, J. Thota, K. Matta, "Modeling of a Light-Weight Composite Blast-Containment Vessel," 2005 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005.
- 2005 66. M. Trabia, B. O'Toole, S. Ladkany, V. Chakka, K. Krishna, G. Nallani, S. Sridharala, and M. Chowdhury, "Finite element modeling of electronic components in projectiles", Proceedings of the 76th Shock and Vibration Symposium, New Orleans, LA, Oct. 30- Nov. 4, 2005.
67. M. Trabia, B. O'Toole, S. Ladkany, J. Naraparaju, S. Sridharala, J. Huang "Optimization of Joint Design for Side Panel of a Military Vehicle for Shock Reduction," 76th Shock and Vibration Symposium, Destin, FL, November 2005.
68. M. Trabia, W. Yim, and S. Parimi, "Inverse Dynamics-Based Fuzzy Logic Control of a Projectile Smart Fin," 20th Biennial Conference on Mechanical Vibration and Noise, Long Beach, California, September 2005.
69. S. Mani, S. Singh, S. Parimi, W. Yim, M. Trabia, "Adaptive Control of a Projectile Fin Using Piezoelectric Elastic Beam," AIAA Guidance, Navigation, and Control Conference and Exhibit, San Francisco, California, August 2005.
70. K. Moustafa, M. Trabia, M. Ismail, "Stability Analysis and Control of Overhead Crane with Time-Dependent Flexible Cable," IEEE/ASME International Conference on Advanced Intelligent Mechatronics, July 2005, Monterey, California.
71. M. Trabia, W. Yim, and S. Parimi, "Fuzzy Logic Control of a Projectile Smart Fin," the 2005 IEEE International Conference on Fuzzy Systems, May, 2005, Reno, Nevada.
72. K. Moustafa and M. Trabia, "A Generalized Model for an Overhead Crane with Flexible Cable and Load Hoisting," The Sixth Annual U.A.E. University Research Conference," April 2005, Al-Ain, U.A.E.
73. S. Mani, S. Singh, S. Parimi, W. Yim, M. Trabia, "Direct Adaptive Control of a smart projectile fin by a piezoelectric flexible beam actuator," SPIE Annual International Symposium on Smart Structures and Materials, March 11-13, 2005.
74. J. Renno, M. Trabia, and K. Moustafa, "Anti-Swing Adaptive Fuzzy Controller for an Overhead Crane with Hoisting," 2004 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, November 2004.
- 2004 75. M. Trabia, W. Yim, and S. Parimi, "Fuzzy Logic Control of Projectile Fin Angle Using Piezoelectric Beam Actuator," 2004 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, November 2004.
76. M. Trabia, W. Culbreth, Subramanian, S., and T. Tajima, "Optimization of Chemical Etching Process in Niobium Cavities," 30th Design Automation Conference, Salt Lake City, Utah, September 2004.
77. S. Mani, S. Singh, Yim, W. and M. Trabia, "Adaptive Trajectory Control of a

- Smart Projectile Fin by Piezoelectric Flexible Beam, Actuator,” 4th International Symposium on Robotics and Automation, ISRA'2004, Queretaro, Mexico, August 25-27, 2004.
78. W. Yim, S. Singh, and M. Trabia, “Adaptive Control of Projectile Fin Angle Using Piezoelectric Beam, Actuator,” SPIE 11th Annual International Symposium on Smart Structures and Materials, San Diego, California, March 2004, pp. 343-352.
79. L.Z. Shi, and M. Trabia, “Design and Tuning of Distributed Importance-Based Fuzzy Logic Controller for Two-Link Rigid-Flexible Manipulator,” 2003 ASME International Mechanical Engineering Congress and Exposition, Washington D.C., November 2003.
- 2003 80. L.Z. Shi, and M. Trabia, “Comparison of Two Distributed Fuzzy Logic Controllers for Two-Link Rigid-Flexible Manipulator,” Symposium on Dynamics and Vibration of Robotic Systems of the 19th Biennial Conference on Mechanical Vibration and Noise, ASME Design Technical Conferences, Chicago, Illinois, September, 2003.
81. K. Zobotkin, B. O’Toole, and M. Trabia, “Identification of the Dynamic Tensile Properties of Metals under Moderate Strain Rates,” ASCE Engineering Mechanics '03 conference, Seattle, Washington, July, 2003.
82. S. Dusi, H. Wang, B. O’Toole, and M. Trabia, “Identification of Dynamic Properties of Metals under Moderate Strain Rates and Elevated Temperatures,” 2003 ASME Mechanical and Materials Conference, Scottsdale, Arizona, June 2003 (*abstract*).
83. M. Holl, R. Schill, and M. Trabia, “Optimization of a Five Cell Niobium Cavity,” AccApp'03: Accelerator Applications in a Nuclear Renaissance in San Diego, California, June, 2003.
84. A. K. Roy, S. Pothana, H. Aquino, B. J. O’Toole, M. B. Trabia, and Z. Wang, “Environment-Assisted-Cracking of Cladding Materials under Different Loading Conditions,” 10th International High-Level Radioactive Waste Management Conference, Las Vegas, Nevada, April 2003.
85. K. Moustafa, M. Trabia, M. Emira, and S. Elnaggar, “PD versus Fuzzy Control of a Three-Link Spatial Manipulator with One Flexible Link,” 6th World Multiconference on Systemics, Cybernetics, and Informatics (SCI 2002), Orlando, July 2002.
- 2002 86. K. Zobotkin, B. O’Toole, and M. Trabia, “Identification of the Dynamic Properties of Candidate Materials for the Spent Nuclear Fuel Container,” Fourteenth U.S. National Congress of Theoretical and Applied Mechanics, Blacksburg, Virginia, June 2002, pp. 559 (*abstract*).
87. S. Subramanian, Q. Xue, M. Trabia, Y. Chen, and R. Schill, “Modeling and Optimization of the Chemical Etching Process in Niobium Cavities,” International Congress on Advanced Nuclear Power Plants (ICAPP), Hollywood, Florida, June 2002.
88. M. Trabia, K. Zobotkin, and R. Wang, “Design of a V-Plate-Wire Mandibular Fixation System,” 2001 ASME International Mechanical Engineering Congress

- and Exposition, New York, New York, November 2001.
- 2001 89. M. Mekhilef, and M. Trabia, "Successive Twinkling Simplex Search Optimization Algorithms," 27th Design Automation Conference, Pittsburgh, Pennsylvania, September 2001.
90. Z. Ceylan, and M. Trabia, "Optimization of the Closure-Weld Region of Cylindrical Containers for Long-Term Corrosion Resistance," 27th Design Automation Conference, Pittsburgh, Pennsylvania, September 2001.
91. L. Z. Shi, and M. Trabia, "Comparison of Two Distributed Fuzzy Logic Controllers for Flexible-Link Manipulators," Proceedings of the ASME Dynamic Systems and Control Division-2000, DSC-Vol.69-1, ASME, New York, 2000, pp. 443-451. Presented at the 2000 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2000.
- 2000 92. M. Trabia, "A Hybrid Fuzzy Simplex Genetic Algorithm." 26th Design Automation Conference, Baltimore, Maryland, September 2000.
93. L. Z. Shi, and M. Trabia, "Genetic Tuning of Fuzzy Logic Controller for a Flexible Link Manipulator," Proceedings of the International Conference on Mathematics and Engineering Techniques in Medicine and Biological Sciences (METMBS'00), Las Vegas, Nevada, June 2000, CSREA Press, pp. 579-585.
94. N. Hodge, L. Z. Shi, and M. Trabia, "Speed Fuzzy Logic Control for an Autonomous Vehicle," Proceedings of the ASME Dynamic Systems and Control Division-1999", DSC-Vol.67, ASME, New York, 1999, pp. 477-486. Presented at the 1999 ASME International Mechanical Engineering Congress and Exposition, Nashville, Tennessee, November 1999.
- 1999 95. M. Trabia, and X. Lu, "A Fuzzy Adaptive Simplex Search Optimization Algorithm," 25th Design Automation Conference, Las Vegas, NV, September 1999.
96. N. Hodge, and M. Trabia, "Steering Fuzzy Logic Controller for an Autonomous Vehicle," 1999 IEEE International Conference on Robotics and Automation, Detroit, Michigan, May 1999, pp. 2482-2488.
97. M. Trabia, "Tuning of Distributed Fuzzy Logic Controller for a Flexible-Link Robot," Vibration and Noise Control, DE-Vol. 97, ASME, New York, 1998, pp. 57-66. Presented at the 1998 ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, November 1998.
- 1998 98. K. Murali, and M. Trabia, "Placement of Robotic Manipulator for Traversing a Path in Minimum Time," Proceedings of DET'97, 23rd Design Automation Conference, ASME, New York, 1997.
- 1997 99. N. Hodge, and M. Trabia, "Navigational Fuzzy Logic Control of an Autonomous Vehicle," IASTED International Conference on Control, Cancun, Mexico, May 1997, pp. 258-262.
100. R. Venkatesh, W. Yim, and M. Trabia, "Control of Multiple Teleoperated Robotic Bridge Transporters for Remote Handling," IASTED International Conference on Robotics and Manufacturing, Honolulu, Hawaii, August 1996, pp. 111-114.
- 1996 101. R. Venkatesh, W. Yim, and M. Trabia, "A Minimum-Time Collision-Free Path Planning for Two Teleoperated Robotic Bridge Transporters," IASTED

- International Conference on Robotics and Manufacturing, Honolulu, Hawaii, August 1996, pp. 115-118.
102. M. Sauerberger, and M. Trabia, "Design and Implementation of an Autonomous Control Algorithm for an Omnidirectional Vehicle," IASTED International Conference on Robotics and Manufacturing, Honolulu, Hawaii, August 1996, pp. 131-134.
 103. M. Kaseko, and M. Trabia, "A Fuzzy Logic Controller for a Traffic Signal," IASTED International Conference on Applications of Control and Robotics, pp. 117-122, Orlando, Florida, January 1996.
 104. K. Murali, and M. Trabia, "Optimal Placement of a Robot for a Traversal of a Prescribed Path in Minimum Time with Actuator and Obstacle Constraints," presented at the Fourth National Applied Mechanisms and Robotics Conference, Cincinnati, Ohio, November 1995.
 - 1995 105. S. Ladkany, S. Channanarayapatna, and M. Trabia, "Experimental Verification of Hydraulic Robot for Remote Handling of HLNW," 1995 International High Level Radioactive Waste Management Conference, Las Vegas, Nevada, May 1995, pp. 704-706.
 106. W. McCarthy, and M. Trabia, "Path-Planning of an Autonomous Vehicle Operating in an Unknown Environment Using a Fuzzy Logic Controller," Dynamic Systems and Control 1994, DSC-Vol. 55-1, ASME, New York, 1994, pp. 379-388.
 - 1994 107. M. Nalley, and M. Trabia, "Design of a Fuzzy Logic Controller for Swing-Damped Transport of an Overhead Crane Payload," Dynamic Systems and Control 1994, DSC-Vol. 55-1, ASME, New York, 1994, pp. 389-398, presented at the 1994 International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 1994.
 108. M. Trabia, "A Continuous Force Model for Elastic-Plastic Impact of Solids," Advances in Design Automation-1993, DE-Vol. 65-1, ASME, New York, 1993, pp. 687-692.
 - 1993 109. M. Bodie, and M. Trabia, "Mobile Robot Path Planning in Unknown Terrain and Hazardous Environment," presented at Ninth International Conference on Mathematical and Computer Modelling, Berkeley, California, July 1993.
 110. W. McCarthy, and M. Trabia, "Selection of Membership Sets for Optimal Performance of a Fuzzy Logic Controller," presented at Ninth International Conference on Mathematical and Computer Modelling, Berkeley, California, July 1993.
 111. Y. Lei, M. Trabia, and D. Too, "Optimization of the Seating Position in a Human-Powered Vehicle," Biomechanics in Sport XI, pp. 115-119, presented at the 11th Annual Meeting of the International Society of Biomechanics in Sport, Amherst, Massachusetts, June 1993.
 112. S. Jupudi, S. N. Singh, and M. Trabia, "Trajectory and Vibration Control of a Three-Link Flexible Robot Using Inverse Joint Controller and Optimal Multiple Stabilizers," 2nd Conference on Recent Advances in Active Control of Sound and Vibration, Technomic Publishing Inc., Lancaster, 1993, pp. 705-716.

113. M. Trabia, and E. Lam, "Symbolic Formulation of the Dynamic Equations of Motion of an Open Chain of Serially Connected Flexible Bodies," *Mathematical Modelling and Scientific Computing*, Volume 2, Section B, 1993, pp. 1048-1053.
114. J. Li, V. Musukula, and M. Trabia, "Design of Machine Tool Spindle for Minimum Cylindricity Error," *Advances in Design Automation-1992, DE-Vol. 44-1*, ASME, New York, 1992, pp. 145-150.
- 1992 115. R. Rajagopalan, and M. Trabia, "Optimal Design of an Overhead Crane Runaway Girder," *Advances in Design Automation-1992, DE-Vol. 44-1*, ASME, New York, 1992, pp. 231-237.
116. M. Trabia, and M. Kiley, "ASME Pressure Vessel Code Application to Nuclear Waste Container Design," *1992 International High Level Radioactive Waste Management Conference*, Volume 2, pp. 1244-1252, Las Vegas, Nevada, April 1992.
117. M. Trabia, and E. Lam, "Modeling of the UNLV-ARO Light Weight Hydraulically Actuated Robot," *Second National Applied Mechanisms and Robotics Conference*, Volume II, pp. VIIB. 4-1 - 4-13. Cincinnati, Ohio, November 1991.
- 1991 118. M. Trabia, and W. Yim, "Optimal Joint Trajectory Planning of a Single Link Elastic Robot," *Robotics Research-1990, DSC-Vol.26*, ASME, New York, 1991, pp. 59-66.
119. M. Trabia, "Use of MATHCAD in Teaching Kinematics and Dynamics of Machines," *Proceedings of the 1990 Annual Meeting and Conference of American Society for Engineering Education, Pacific Southwest Section*, Las Vegas, Nevada, October, 1990, pp. 219-226.
- 1990 120. M. Trabia, and J. K. Davidson, "Substitute Wrists for the Attitude and Control of a Robot Tool Carried by a 3-R Spherical Wrist," *Cams, Gears, Robot and Mechanism Design, DE-Vol. 26*, ASME, New York, 1990, pp. 245-254.
121. R. Reynolds, and M. Trabia, "Improving the Performance of Gravity Meter Stabilizer Mechanism," *First National Applied Mechanisms and Robotics Conference*, Volume II, 7B-3, pp. 1-7, Cincinnati, Ohio, November 1989.
- 1989 122. M. Trabia, "Automatic Generation of Near-Minimum Length Collision-Free Paths for Robots," *Flexible Assembly Systems-1989, DE-Vol.20*, ASME, New York, 1989, pp. 93-98.
123. W. Yim, and M. Trabia, "Control of a Robot with Elastic Links Using Nonlinear Feedback and Dynamic Joint Angle Modification," *Sensors and Controls for Manufacturing-1988, PED-Vol. 33*, ASME, New York, 1988, pp. 163-174.
- 1988 124. M. Trabia, and J. K. Davidson, "Design Conditions for the Orientation and Attitude of a Robot Tool Carried by a 3-R Spherical Wrist," *Trends and Developments in Mechanisms, Machines, and Robotics-1988, DE-Vol. 15-3*, ASME, New York, 1988, pp. 177-191.

Reports

1. M. Jahandardoost and M. Trabia, "Life cycle analysis of flow restrictive disk in landscape sprinkler," GFC, August 2012.

2. D. Somasundaram, J. Thota, M. Trabia, and B. O'Toole, "Investigation of the Shock Mitigating Properties of Bolted Joint Connections," Hyundai Rotem, July 2012.
3. A. Koehler and M. Trabia, "Characterization of Stresses in the Southern Nevada Water Authority Intake Pumps," Southern Nevada Water Authority, November 2003.
4. M. Trabia and B. O'Toole, "Identification of Dynamic Properties of Materials for the Nuclear Waste Package," U.S. Department of Energy, August 2003.

Invited Presentations

1. "Modeling of a Composite Piezoelectric Actuator for Smart Fin Applications," Keynote Speaker, BIT's 4th Annual World Congress of Advanced Materials-2015, Chongqing, China, May, 2015.
2. "Smart Finger-Wearable Assistive Display for the Well-being of the Blind and Visually Impaired," Keynote Speaker, The 5th International Conference on Mechatronics (ICOM'13), Kuala Lumpur, Malaysia, July, 2013.
3. "A BLAST FROM THE...FUTURE?" Palo Alto Colloquia, Lockheed Martin Advanced Technology Center, April 2013.
4. "Design of "Figure-8" Spherical Motion Flapping Wing for Miniature UAV," Department of Electrical Engineering, Utah State University, Utah, January, 2010.
5. "Design of "Figure-8" Spherical Motion Flapping Wing for Miniature UAV," Department of Mechanical Engineering, Villanova University, Pennsylvania, November, 2009.
http://campusevents.villanova.edu/vuevents/EventList.aspx?view=EventDetails&eventidn=4075&information_id=13153
6. "Design of Military Vehicles for Ballistic Shocks," Series of five lectures presented at the Korean Agency for Defense Development, Daejeon, South Korea, April 2009.
7. "Design and Fuzzy Logic Control of a Smart Fin," Keynote Speaker, The 3rd International Conference on Mechatronics (ICOM'08), Kuala Lumpur, Malaysia, December, 2008.
http://www.iiu.edu.my/ICOM/2008/index.php?option=com_content&task=view&id=21&Itemid=35
8. "Incorporating Twinkling in Genetic Algorithms for Global Optimization," Department of Mechanical Engineering, Cairo University, Cairo, Egypt, June, 2008.
9. "A Two-Stage Anti-Swing Fuzzy Controller for an Overhead Crane with Hoisting," Department of Mechatronics Engineering, International Islamic University, Malaysia, December, 2006.
10. "Fuzzy Logic Control Applications," series of three lectures presented at the Faculty of Engineering, Zagazig University, Egypt, May 2001. The lectures can be viewed at:
http://www.me.unlv.edu/~mbt/fuzzy_lectures/Tuning_FLC.htm
11. "Tuning of Distributed Fuzzy Logic Controller for a Flexible-Link Robot," Faculty of Engineering, Zagazig University, Egypt, July 1999.
12. "Use of Finite Element Analysis for Designing Medical Devices," University of Nevada School of Medicine and University of Nevada, Las Vegas Research Seminar, June 1999.

Other Research Contributions

- Mechanical design, construction and control of a hydraulic robot with 2.5 meter reach and 50 kg payload.

- Acknowledgments in two journal papers by Dr. J. K. Davidson for literature survey and proof readings.

III. Teaching Experience

1987 - Department of Mechanical Engineering,
University of Nevada, Las Vegas.

Courses Taught at UNLV

Course
ME 301L, Engineering Materials Lab
ME 302, Materials Mechanics
ME 302L, Mechanical Testing Lab
ME 320, Dynamics of Machines
ME 440, Mechanical Engineering Design
ME 441/641, Advanced Mechanical Engineering Design
ME 442/642, Advanced Mechanism Design
ME 443/643, Design Techniques in Mechanical Engineering
ME 447/647, Computer-Aided Geometric Modeling
ME 491, Independent Study
ME 492, Fundamentals of Engineering Examination Registration
ME 497, Senior Design Project
ME 727, Engineering Optimization
ME 740, Advanced Dynamics
ME 741, Energy and Variational Methods in Applied Mechanics
ME 791, Independent Study in Mechanical Engineering

Courses Developed

1. ME 442/642 Advanced Mechanism Design.
2. ME 443/643 Design Techniques in Mechanical Engineering.
3. ME 447/647 Computer-Aided Geometric Modeling for Engineers.
4. ME 727 Engineering Optimization.
5. ME 741 Energy and Variational Methods in Mechanics.

Program Development

1. Participating in proposing a M.S. degree in Biomedical Engineering.
2. Participating in proposing a M.S. degree in Materials and Nuclear Engineering.
3. Participating in proposing a M.S. degree in Aerospace Engineering.

Graduate Students Supervised

Ph.D. Students

1. Jessica Deberardinis, "Development of a tissue deformation model of the diabetic foot during locomotion," Ph.D. in Mechanical Engineering, Summer 2017. (Co-Chair: J. Dufek)
2. Shawoon Roy, "Plastic Deformation Study using Light Gas Gun," Ph.D. in Mechanical Engineering, Summer 2015. (Co-chair: B. O'Toole)
3. Deepak Somasundaram, "Analysis of Bolted Joints under Medium and High Impact Loading," Ph.D. in Mechanical Engineering, Fall 2013. Current Employer: Zentech, Houston, Texas (Co-chair: B. O'Toole)
4. Mohammad Saadeh, "A Refreshable and Portable E-Braille System for the Blind and Visually Impaired," Ph.D. in Mechanical Engineering, Spring 2012. Current Employer: Southeastern Louisiana University. *Winner of the UNLV Outstanding Dissertation Award*
5. Jagadeep Thota, "Optimal Design of Vehicle with Internal Space Frame Structure Subjected to High Impact Load," Ph.D. in Mechanical Engineering, Spring 2010. Current Employer: University of Alabama, Huntsville. (Co-chair: B. O'Toole)
6. Venkat Mudupu, "Experimental and Theoretical Control of a Smart Projectile Fin Using Piezoelectric Bimorph Actuator," Ph.D. in Mechanical Engineering, Fall 2008. Current Employer: Thrustmaster of Texas, Houston, Texas. (Co-chair: W. Yim)
7. Srujanbabu Sridharala, "Methodology for Finite Element Modeling of Electronic Components under Dynamic Loading," Ph.D. in Mechanical Engineering, Fall 2006. Current Employer: Technical Advisory Services, DNV, Houston, Texas. (Co-chair: B. O'Toole)
8. Linda Z. Shi, "Distributed Importance-Based Fuzzy Logic Controllers for Flexible Link Manipulators," Ph.D. in Mechanical Engineering, Spring 2004. *Winner of the UNLV President Graduate Fellowship. 2nd place winner in the Second Annual Graduate Research Forum.* Current Employer: University of California, San Diego, California.
9. Zekai Ceylan, "Minimization of Residual Stresses in the Closure-Weld Region of the Spent Nuclear Fuel Canister Using Induction Annealing Process," Ph.D. in Mechanical Engineering, Spring 2001. Current employer: Yeditepe University in Istanbul, Turkey.

M.S. Students (Thesis)

1. Maria Gerardi, "Design of elctro-mechanical prosthetic hand," Summer 2016. (Co-chair: B. O'Toole)
2. Jordan Harris, "Improving the Robohand Design," Summer 2016. (Co-chair: B. O'Toole)
3. Zohaib Rehmat, "Design of "Figure -8" Spherical Motion Flapping Wing for Miniature UAV'S," M.S. in Mechanical Engineering, Spring 2009. Current Employer: VSR Industries (Co-chair: W. Yim)
4. Deepak Somasundaram, "Experimental Investigation of Shock Mitigation of Electronic Boards within Projectile," M.S. in Mechanical Engineering, Fall 2008. (Co-chair: B. O'Toole)
5. Ashok Kumar Ayyaswamy, "Mechanical Performance of Electronic Boards under Shock Loading," M.S. in Mechanical Engineering, Fall 2007. (Co-chair: B. O'Toole)
6. Taha Mohamed, "Applying of Mechanical Failure Criteria of Brittle Material to the Design Of High Temperature Heat Exchanger," M.S. in Mechanical Engineering, Fall 2007.

7. Umakanth Sakaray, "Design and Optimization of Joints to Mitigate Shock in Military Vehicles under Blast Loading," M.S. in Mechanical Engineering, Summer 2006. (Co-chair: B. O'Toole), Current Employer: Caterpillar.
8. Jagadeep Thota, "Optimization of Explosion-Proof Containers," M.S. in Mechanical Engineering, Summer 2006. (Co-chair: B. O'Toole)
9. Vinodkumar Chakka, "Shock Reduction Methods for Electronic Components in a Projectile," M.S. in Mechanical Engineering, Spring 2006. (Co-chair: B. O'Toole)
10. Krishna Kuncham, "Shock Effects on Electronic Components within a Projectile," M.S. in Mechanical Engineering, Spring 2006. (Co-chair: B. O'Toole)
11. Jagannadha R Naraparaju, "Joint Design for Shock Mitigation in Vehicles," M.S. in Mechanical Engineering, Fall 2005. (Co-chair: B. O'Toole)
12. Surya Parimi, "Design and Control of a Smart Fin Using Piezoelectric Actuators," M.S. in Mechanical Engineering, Summer 2005. (Co-chair: W. Yim) Current Employer: Caterpillar.
13. Nallani Gopi, "Joint Design for Shock Mitigation," M.S. in Mechanical Engineering, Spring 2005. (Co-chair: B. O'Toole)
14. Kiran Matta, "Computational Simulation of Internal Blast Loading on Containment Vessels," M.S. in Mechanical Engineering, Fall 2004. (Co-chair: B. O'Toole) Current Employer: Butler International Inc.
15. Satishkumar Subramanian, "Modeling, Fabrication, and Optimization of Niobium Cavities," M.S. in Mechanical Engineering, Fall 2003. Current Employer: Hawkrigde Systems.
16. Hui Wang, "Dynamic Properties of Materials under Elevated Temperatures," M.S. in Mechanical Engineering, Fall 2003. (Co-chair: B. O'Toole)
17. Sirisha Dusi, "Identification of the Dynamic Properties of Materials for the Nuclear Waste Container under Elevated Temperatures," M.S. in Mechanical Engineering, Summer 2003. (Co-chair: B. O'Toole). Current Employer: Packaging Technologies, Washington.
18. Konstantin Zobotkin, "Identification of the Dynamic Properties of Materials for the Nuclear Waste Package," M.S. in Mechanical Engineering, Spring 2002. (Co-chair: B. O'Toole) Current Employer: Konami Gaming, Las Vegas.
19. Qin Liu, "Diagnostic Test and Analytical Methods for Resolving Fan/Motor Vibration Problems in Air-Conditioning Units," M.S. in Mechanical Engineering, Fall 2001. (Co-chair: D. Reynolds)
20. George Peterescu, "A Heuristic Approach for Path Planning of a Redundant Manipulators," M.S. in Mechanical Engineering, Summer 1999. Currently, a Ph.D. student, UNLV.
21. Neil Hodge, "Design of a Fuzzy Controller for a Mobile Robot," M.S. in Mechanical Engineering, Spring 1998. *Winner of the UNLV Alumni Association Award. Nominated for the UNLV Alumni Association Most Outstanding Thesis Award.* Current employer: Lawrence Livermore National Laboratory.
22. Rajkumar Rajagopalan, "Design of Unstiffened Built-Up Steel Plate Girders for Minimum Cost," M.S. in Mechanical Engineering, Fall 1997, Current Employer: Chrysler Corp.
23. Bassel Abdelnour, "Set-up of Motion and Deflection Control System for 3-Degrees of Freedom Flexible Robot," M.S. in Mechanical Engineering, Summer 1996. (Co-chair: S. Ladkany)
24. Michael Nalley, "Control of Nuclear Waste Container Oscillation," M.S. in Mechanical Engineering, Spring 1996. *Winner of the UNLV Alumni Association Most Outstanding Thesis Award.*

25. Murali Kathari, "Optimal Control of an Overhead Crane," M.S. in Mechanical Engineering, Fall 1995. Current Employer: Novell Inc.
26. Charlie Teng, "Vibration Testing of Air-Conditioning Units," M.S. in Mechanical Engineering, Summer 1995. (Co-chair: D. Reynolds). Current Employer: Carrier Corp.
27. Sarath Abayaweera, "Finite Element Analysis of Elastic-Plastic Impact," M.S. in Mechanical Engineering, Spring 1995. Current Employer: GM Corporation.
28. Shashidar S. Channarayapatna, "Experimental Verification of Structural Response of Flexible Three-Link Hydraulic Steel Robot," M.S. in Civil Engineering, Fall 1994. (Co-chair: S. Ladkany)
29. John Li, "Path Planning of a Robot with Large Number of Degrees of Freedom," M.S. in Mechanical Engineering, Spring 1994. Current Employer: Phoenix VA Health Care System.
30. William McCarthy, "A Fuzzy-Logic Control of an Autonomous Vehicle Operating in an Unknown Environment," M.S. in Mechanical Engineering, Spring 1994. Current Employer: Ingersoll Rand.
31. Vijachander Musukula, "Dynamic Analysis of an Overhead Crane Carrying a Canister by Finite Element Method", M.S. in Mechanical Engineering, May 1993. (Co-chair: S. Ladkany). Current Employer: Lear Seating Co.
32. Satish Jupudi, "Mathematical Modeling, Trajectory, and Vibrations Control of a Three-Link Flexible Robot," M.S. in Mechanical Engineering, February 1992. Current Employer: Ford Motor Company.
33. Edward Lam, "Dynamic Modeling of Hydraulically Activated Robots with Flexible Links," M.S. in Mechanical Engineering, April 1991. *Winner of UNLV Alumni Association Certificate of Recognition*. Current Employer: US Department of Energy.

M.S. Students (Non-Thesis Option)

1. Rocio Hernandez, "Mechanical Characterization of Silicon Carbide under Extreme Conditions," Fall 2010. (Co-chair: B. O'Toole)

Undergraduate Students Supervised

1. Baptiste Cluzel, University of Nantes, France, "Plantar tissue stiffness characterization," 2015.
2. Westley Davis, "NeCoTip Teachers Institute," 2015.
3. Zachary Cook, "NeCoTip Teachers Institute," 2015.
4. Michelle Quizon, "Plantar tissue stiffness characterization," 2015.
5. Melissa Rose Mercado, Syracuse University, "Plantar tissue stiffness characterization," 2015.
6. Jeremy Letkiewicz, "Plantar tissue stiffness characterization," 2015.
7. Westley Davis, "Plantar tissue stiffness characterization," 2015.
8. Yoann Terrier, ENSEEIHT, Toulouse, France, "Plantar tissue stiffness characterization," 2015.
9. Robin Eggert-Griscelli, ESEO, Angers, France, "Plantar tissue stiffness characterization," 2015.
10. Sean Devore, "IP 1000 Pump Deign," 2015
11. Matthew Pedraza, "IP 1000 Pump Deign," 2015
12. Robert Deike, "Sock Donner," 2015.

13. Kyle Cummings, "Sock Donner," 2015.
14. Daniel Pertstein, "Robo-hand," 2015.
15. Christopher Denton, "Robo-hand," 2015.
16. Cliff Williams, "Robo-hand," 2015.
17. Dulaya Saennok, "Robo-hand," 2015.
18. Jared Plies, "Mini Baja Drive-Train System," 2015.
19. Victor Chen, "Mini Baja Drive-Train System," 2015.
20. Shane McMahon, "Mini Baja Drive-Train System," 2015.
21. Giancarlo Touzard, "Mini Baja Drive-Train System," 2015.
22. Faezeh Basadereh, "The Full Motion Line Array Project," 2015.
23. Zachary Cook, "The Full Motion Line Array Project," 2015.
24. Max Godges, "The Full Motion Line Array Project," 2015.
25. Samantha Suffle, "The Full Motion Line Array Project," 2015.
26. Westley Davis, "Gas gun testing," 2015.
27. Diogo dos Santos, "Gas gun testing," 2015.
28. Wesley Menezes Guimaraes, "Mechanical characterization of human tissues," 2015
29. George Puckett, "Convertible Ottoman," 2015.
30. Treston Rego, "Convertible Ottoman," 2015.
31. Anthony Bongolan, "Automated Silverware Rolling Machine," 2014.
32. Robert Hunt, "Automated Silverware Rolling Machine," 2014.
33. Andres Toledo, "Automated Silverware Rolling Machine," 2014.
34. David Samson, "Plantar tissue stiffness characterization," 2014.
35. Anne-Charlotte Von Euw, ESIEE Paris, France, "Plantar tissue stiffness characterization," 2014.
36. Remi Cantaloup, Phelma-Gernolble INP, France, "Plantar tissue stiffness characterization," 2014.
37. Brandon Holten, "Foot stiffness characterization," 2014.
38. Melissa Matthes, "22," 2013-15.
39. Alberto Burgeno, "Diamond Anvil Cell Motorized Pressure Controller," 2014.
40. Neema Khalili, "Diamond Anvil Cell Motorized Pressure Controller," 2014.
41. Cesar Giron, "Diamond Anvil Cell Motorized Pressure Controller," 2014.
42. Jeongsok Rok (Pusan University, Korea), "Material Characterization of Rubberized Aramid," 2013.
43. Ronald Bohne, "The Reactor" 2013¹
44. Brian Corpuz, "Baby A-Go-Go!" 2013 ²
45. Khoa Vo, "Baby A-Go-Go!" 2013²
46. Tyler Ercolani, "Motorized Shelving System," 2013.
47. Phillip Nix, "Motorized Shelving System," 2013.
48. Jacob Lynch, "Motorized Shelving System," 2013.

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¹ Winner of the Commercial Potential Prize and Interdisciplinary Prize, College Senior Design Competition.

² Winner of the Commercial Potential Prize and Interdisciplinary Prize, College Senior Design Competition.

49. Jameson Lee, "Control of E-Braille System," 2012.
50. David Fyda, "Motorized TV Wall Mount," 2012³
51. Ryan Ghanaatrad, "Motorized TV Wall Mount," 2012³
52. Jorge Pulido, "Motorized TV Wall Mount," 2012³
53. Jessica Hartman, "F.R.I. Femoral Rod Implant," 2012.
54. Katelyn Orr, "F.R.I. Femoral Rod Implant," 2012.
55. Kyle Rebman, "F.R.I. Femoral Rod Implant," 2012.
56. David Froehle, "Design of a Gun Clip," 2010⁴
57. Michael Gund, "Design of a Gun Clip," 2010⁴
58. Shara Maikranz, "Design of a Gun Clip," 2010⁴
59. Baldomero Corona, "Dual-Operational Lifting Instrument," 2010.
60. Siul Ruiz, "Dual-Operational Lifting Instrument," 2010.
61. Francisco Sermeno, "Dual-Operational Lifting Instrument," 2010.
62. Alexandre Barreau, Universite de Lyon, France, "Failure Strength of Silicone Carbide Ceramic Disks under Biaxial Flexure when Exposed to Elevated Temperatures and Concentrated Sulfuric Acid," 2010.
63. Kimberly Hammer, "Autonomous Material Sorter," 2010⁵
64. AJ Wickersham, "Autonomous Material Sorter," 2010⁵
65. Anthony Santo-Domingo, "Autonomous Material Sorter," 2010⁵
66. Christian Calvo, "Autonomous Material Sorter," 2010⁵
67. Jonathan Sanchez, "Autonomous Material Sorter," 2010⁵
68. Sean Daly, "The Scuba Caddy," 2010.
69. Yonas Cherkos, "The Scuba Caddy," 2010.
70. Sean Jackson, "The Scuba Caddy," 2010.
71. Sylvester Vargas, "The Scuba Caddy," 2010.
72. Todd Peters, "Hear My Volt: A Pedestrian Alert System for Electric Cars," 2009.
73. Zaccary Poots, "Hear My Volt: A Pedestrian Alert System for Electric Cars," 2009.
74. Marcella Sosa, "Hear My Volt: A Pedestrian Alert System for Electric Cars," 2009.
75. Kevin Murphy, "Torque Limiting Device," 2008⁶
76. Jesse Roll, "Torque Limiting Device," 2008⁶
77. Mike Morgan, "Motorized Palm Tree Trimmer," 2008.
78. Hilary Shyface, "Motorized Palm Tree Trimmer," 2008.
79. Dan Skoblar, "Motorized Palm Tree Trimmer," 2008.
80. Jesse Roll, "Design of miniature air vehicle flapping wing," 2007.
81. Luis Durani, "Design of solar cells for vehicle," 2007.
82. Fred Tesfai, "Design of solar cells for vehicle," 2007.
83. Victor Villa, "Design of solar cells for vehicle," 2007.
84. Stacy Ragaas, "Design of a Cutting Machine for Persons with Learning Disabilities," 2006.
85. Kimberly Clark, "Design of a Cutting Machine for Persons with Learning Disabilities," 2006.

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³ Winner of the 2nd Place, Commercial Potential, College Senior Design Competition.

⁴ Winner of the 1st Place, Mechanical Engineering, College Senior Design Competition.

⁵ Winner of the 2nd Place, Mechanical Engineering, College Senior Design Competition

⁶ Winner of the College Senior Design Competition.

86. Halli Warf, "Design of a Cutting Machine for Persons with Learning Disabilities," 2006.
87. Brian Goldstein, "Design of a Battery-Operated Car Jack," 2006.
88. Kenneth Lloren, "Design of a Battery-Operated Car Jack," 2006.
89. Chris Stevenson, "Design of a Battery-Operated Car Jack," 2006.
90. Paul Pigman, "Mechanical Can Crusher," 2006.
91. Rob Santos, "Mechanical Can Crusher," 2006.
92. Samantha Porter, "Design of a Cutting Machine," 2005.
93. Bryce Taylor, "Design of a Cutting Machine," 2005.
94. Aleem Wali, "Design of a Road-Adaptive Wheelchair," 2004.
95. Mark Chatteron, "Design of a Road-Adaptive Wheelchair," 2004.
96. Adam McCracken, "Design of a Low-Cost wheelchair," 2004.
97. Robert Miller, "Design of a Low-Cost wheelchair," 2004.
98. Aleem Wali, "Characterization of Butterfly Valve Failures," 2004.
99. Tarek Deeb, "Control Algorithms for Smart Fin," 2003.
100. Aimee Koehler, "Characterization of Stresses in the Southern Nevada Water Authority Intake Pump Station 1," 2003-2004.
101. Brian Backman, "Design of a Mountain Bike Suspension," 2003.
102. Scott Schmeiser, "Design of Underwater Vehicle," 2003.
103. Bryan Czerniakowski, "Design of Underwater Vehicle," 2003.
104. Jamil Renno, "Accessible Cabinetry," 2003.
105. John Motaka, , "Accessible Cabinetry," 2003
106. Aimee Koehler, "Modeling of Fan/Motor Vibration Problems in Air-Conditioning Units," 2002.
107. Andrew Hooker, "Identification of the Dynamic Properties of Materials for the Nuclear Waste Container," 2002.
108. Kwame Coleman, "Shoulder Continuous Passive Motion Machine," 2002, *Winner of E-Club Senior Design Competition.*
109. Kyle Kisebach, "Shoulder Continuous Passive Motion Machine," 2002, *Winner of E-Club Senior Design Competition.*
110. Chady Barbour, "Multi-Purpose Shredder," 2001.
111. Kenneth Draper, "Multi-Purpose Shredder," 2001.
112. Elliott Salisbury, "Multi-Purpose Shredder," 2001.
113. Elizabeth Bakker, "Titanium Engine Mount," 2001.
114. Mike Mullin, "Titanium Engine Mount," 2001.
115. Steve Deloe, "Design of a Bike Rack," 2001.
116. Patrick Mackessy, "Design of a Bike Rack," 2001.
117. Myong Holl, "Modeling, Fabrication, and Optimization of Niobium Cavities – Phase I," 2001.
118. Alan Allred, "Paper Shredder Machine," 2000.
119. Tim Flagg, "Paper Shredder Machine," 2000.
120. Christopher Fortich, "Design of an Autonomous Vehicle," 1999.
121. Hans Rawhouser, "Finite Element Analysis of Impact," 1999.
122. Christine Jefferson, "Design of Mandible Fixation System," 1999.
123. Dean Hurst, "Design of Mandible Fixation System," 1999.
124. Steven Robertson, "Design of Mandible Fixation System," 1999.

125. Kische Denton, "Design of a Low-Cost Wheelchair," 1999.
126. Daniel Mathews, "Design of a Release Mechanism for a Snow Board," 1998
127. Timothy Schmitt, "Robot Wars Team Entry: Development of an Extending, Positioning Arm," 1998.
128. Kevin Nelson, "Robot Wars Team Entry: Development of Locomotion System," 1998.
129. Sammy Wan, "Robot Wars Team Entry: Development of an Impact Weapon," 1998.
130. John Messina, "Robot Wars Team Entry: Electro-Magnetic Lifting Mechanism," 1998.
131. Jeff Markle, "Improved Bicycle Wheel," 1998
132. Ed, Naasz, "Design of a Raster Machine Feeder," 1998.
133. Andy Simon, "Design of a Remote-Controlled Surveillance Flying Robot," 1998.
134. Harold Wade, "Design of a Remote-Controlled Surveillance Flying Robot," 1998.
135. Kevin Thompson, "Design of a Torque-Magnification Mechanism for Wheelchairs," 1998.
136. Lance Robertson, "Design of a Torque-Magnification Mechanism for Wheelchairs," 1998.
137. Robert Evans, "Design of a Newspaper Vending Machine," 1997.
138. Lane Spina, "Biomechanical Knee Motion Functional Knee Brace Design," 1997.
139. Venessa Bates, "Control of an Omni-Directional Vehicle," 1996.
140. Sam King, "Path Planning of Cooperating Robots," 1996.
141. Blaine Bielke, "Control of an Omni-Directional Vehicle," 1995.
142. Mark Sauerberger, "Design of an Omni-Directional Vehicle," 1995.
143. Ed Lopez, "Finite Element Analysis of Elastic Plastic Contact Stresses," 1995.
144. Thomas Cardin, "Design of Deployable Structure Robot," 1995.
145. Greg Hejelstrom, "Design of a Robotic Vehicle Suspension," 1994.
146. Mark Kiley, "Design of an Omni-Directional Vehicle," 1993.
147. Inderjit Bhatti, "Design of Caterpillar-Like Robotic Vehicle," 1992.
148. Craig Moiola, "Modeling and Control of a Pneumatic Clutch," 1992.
149. Yao Lei, "Design of Human Powered Vehicle," 1991.
150. Michael Nalley, "Design of an Omni-Directional Vehicle," 1991.
151. Kamil Dergham, "Design of a Crank-Crank Closed-Loop Robotic Arm," 1991.
152. Mark Kiley, "ASME Pressure Vessel Code Review for Waste Package Applications," 1990-1992.
153. Susan Bielby, "Design of Robotic Workcell for Writing," 1990.
154. Glenn Bittrolf, "Rising Rate Suspension Design for a Midget Race Car," 1990.
155. Richard Washburn, "Layout of ARO Workspace," 1989.
156. Edward Lam, "Dynamic Analysis of Flexible Hydraulic Robot," 1988.
157. John Stammel, "Mechanical Design of ARO Robot," 1988.
158. John Bullman, "Control of Elastic Manipulators," 1988.

Graduate Students Committees

1. Lin Zhao, M.S. in Mechanical Engineering.
2. Vijaisri Nagarajan, Ph.D. in Mechanical Engineering.
3. Karn Soontrapa, Ph.D. in Mechanical Engineering.
4. Siul Ruiz, M.S. in Mechanical Engineering.
5. Benjamin Mead, M.S. in Mechanical Engineering.
6. Loren Cadelinia, Master of Oral Biology

7. Brady Nance, Master of Oral Biology
8. Stephen Yamodis, Master of Oral Biology
9. Chris Salisbury, M.S. in Mechanical Engineering.
10. Shivakanth Gutta, Ph.D. in Mechanical Engineering.
11. Lillian Ratliff, M.S. in Electrical Engineering.
12. Karapanan Nakalswamy Kumarswamy, Ph.D. in Mechanical Engineering.
13. Richard Stone, Ph.D. in Civil Engineering.
14. Saul Opie, M.S. in Mechanical Engineering.
15. Neveen Shlayan, M.S. in Electrical Engineering.
16. Nirup Bandaru, M.S. in Electrical Engineering.
17. Larry Lakeotes, M.S. in Mechanical Engineering.
18. Ronald Fifield, M.S. in Mechanical Engineering.
19. Satya Kiran Gurram, M.S. in Mechanical Engineering.
20. Dhandapani Selvaraj, M.S. in Mechanical Engineering.
21. Radikha Gundavelli, M.S. in Mechanical Engineering.
22. Jayant Patil, M.S. in Mechanical Engineering.
23. Valery Ponyavin, Ph.D. in Mechanical Engineering.
24. Vijayasarithy Subramanian, M.S. in Mechanical Engineering.
25. Prashanth Kamakshi, M.S. in Mechanical Engineering.
26. Mohammed Yaseen, M.S. in Mechanical Engineering.
27. Robert Madeja, M.S. in Mechanical Engineering.
28. Junying Zhou, M.S. in Computer Science.
29. Karthik Doppala, M.S. in Mechanical Engineering.
30. Lalith Annavarapu, M.S. in Mechanical Engineering.
31. Kofi Cobbinah, M.S. in Mechanical Engineering.
32. Annap George, M.S. in Electrical Engineering.
33. Karpan Nakalswamy, M.S. in Mechanical Engineering.
34. Jamil Renno, M.S. in Mechanical Engineering.
35. Sachin Deshmukh, M.S. in Mechanical Engineering.
36. Ahmed Moustafa, M.S. in Mechanical Engineering.
37. Mohammad Kamal Hussain, Ph.D. in Mechanical Engineering.
38. Narain Armyba, M.S. in Mechanical Engineering.
39. Robert Mohan, Ph.D. in Mechanical Engineering.
40. David Lee, M. S. in Mechanical Engineering.
41. Bin Chen, Ph.D. in Mechanical Engineering.
42. Richard Silva, M. S. in Mechanical Engineering.
43. Kanthi Kiran Dasika, M. S. in Mechanical Engineering.
44. Jae-Kyu Lee, Ph. D. in Mechanical Engineering.
45. Michelle Cameron Nelson, M. S. in Mechanical Engineering.
46. Heidi Aquino, M. S. in Mechanical Engineering.
47. Troy Braithwaite, M. S. in Mechanical Engineering.
48. Suresh Sadenini, M. S. in Mechanical Engineering.
49. Walt Kiffer, M. S. in Mechanical Engineering.

50. Parameswaran Venkatraman, M. S. in Mechanical Engineering.
51. Mohammad Hasan, M. S. in Civil Engineering.
52. Bin Chen, M. S. in Mechanical Engineering.
53. Jianying Cui, M. S. in Mechanical Engineering.
54. Sripriya Sundaram, M.S. in Computer Science.
55. Jeffrey Markle, M. S. in Mechanical Engineering.
56. Trevor Wilcox, M. S. in Mechanical Engineering.
57. Curtis Rowe, M. S. in Civil Engineering.
58. Luis Villegas, M. S. in Mechanical Engineering.
59. Amjad Qadan, M. S. in Electrical Engineering.
60. Yasmin Ali, M.S. in Computer Science.
61. Mohamed Tarek Shaalan, M.S. in Architecture.
62. David Chase, M.S. in Civil Engineering.
63. Kylan Pattisam, M. S. in Mechanical Engineering.
64. Mano Selvarajan, M. S. in Mechanical Engineering.
65. Kieth Kadmiri, Ph. D. in Electrical Engineering.
66. Alexander Jackovich, M. S. in Mechanical Engineering.
67. Kieth Degner, M. S. in Mechanical Engineering.
68. Scott Mitchell, M. S. in Mechanical Engineering.
69. Kurt Rabideau, M. S. in Mechanical Engineering.
70. Magdy El Sayed, M. S. in Hotel Administration.
71. Ande Murali, M. S. in Civil Engineering.
72. Qun Wang, M. S. in Civil Engineering.
73. T. R. Venkatesh, M. S. in Mechanical Engineering.
74. Jianzhong Jiang, M. S. in Electrical Engineering.
75. Doug Weaver, M. S. in Mechanical Engineering.
76. Chen Shih, M. S. in Mechanical Engineering.
77. Q. Wang, M. S. in Civil Engineering.
78. Y. Lei, M. S. in Mechanical Engineering.
79. P. Zeng, M. S. in Mechanical Engineering.
80. P. Mysore, M. S. in Mechanical Engineering.
81. Mark Bodie, M. S. in Mechanical Engineering.
82. Kieth Helmuth, M. S. in Civil Engineering.
83. Rajkumar Rajagopalan, Ph. D. in Civil Engineering.
84. Anietie Ukpong, M. S. in Mechanical Engineering.
85. Brett Kniss, M. S. in Civil Engineering.
86. Jichun Zuang, M. S. in Mechanical Engineering.
87. Robert Marceau, M. S. in Civil Engineering.
88. Allison Kreuger, M. S. in Mechanical Engineering.
89. David Wade, M. S. in Mechanical Engineering.
90. Yung-Ming Hu, M. S. in Mechanical Engineering.

IV. Service Activities

A. Department

- Department Faculty Affairs Committee (2009-2013)
- Chairman (2002-08)
- Led efforts for reaccrediting the mechanical engineering program under ABET 2000 Criteria, which ended in a six-year reaccreditation (2004).
- Coordinated Summer Robotics Program for High School Students with G. Mauer (2002-2005)
- Participated in discussions to reformat senior design projects (2000)
- Graduate Coordinator (1996 -2002)
- Worked to establish a scientific cooperation programs between the Department and Department of Mechanical Engineering, Zagazig University, Zagazig, Egypt. (1998-)
- Seminar Series, Spring 1998
- Distance Learning: Introduction to Mechanical Engineering, part of a team (Spring 1998).
- Scholarship Committee (1998-2001)
- Arranging Seminar Series (Spring 1998)
- Student Advisor
- Search Committee for Manufacturing/Material Position (Spring 1998)
- Design Committee
- Participated in Writing Department Bylaws
- Curriculum Committee (1990-94)
- Graduate Program Committee (1991-94)
- Graduate Council Representative (1991-94)
- Search Committee Composite Materials Position.
- Seminar Series, Fall 1993
- Industrial Liaison Committee
- Graduate College Exploration Day

B. College

- Internal Funding Committee of the Engineering Innovation Fund (2013)
- Associate Dean for Research, Graduate Studies, and Computing (2010-)
- Faculty Marshal, UNLV Spring 2008 Commencement Ceremony
- Review of nine proposals for the Research Infrastructure Award Program (2007)
- Search Committee for the Structural Engineering Faculty, Department of Civil and Environmental Engineering, 2007.
- Engineering Open House (2006-07)
- Minority Engineering Program Day (2005)
- Coordinated writing a proposal for M.S. degree in Material and Nuclear Engineering (2002-2004)
- Coordinated writing a proposal for M.S. degree in Aerospace Engineering (2002-2004)
- Minority Engineering Program Day (2004)
- FE Exam review (2004)

- Coordinated writing a proposal for M.S. degree in Biomedical Engineering (2002-2003)
- Minority Engineering Program Day (2002)
- FE Exam review (2002)
- Marshal for May Commencement Ceremonies (2000)
- Yucca Mountain Tour (1999)
- FE Review Sessions
- Committee to select NASA JOVE proposal (1996)
- Faculty Affair Committee (1995- 2002) (Chair, 1996- 2002)
- Evaluation of Best Dissertation and Thesis Committee (1994-1999) (Chair, 1996-1999)
- College Fair (annually)
- College Bylaws Committee (1991)
- College Curriculum Committee (1990-94)

C. University

- Preliminary design for a new engineering building, 2015.
- 2015 cohort of the Digital Library Federation E-Research, 2015.
- Digital Measures, 2015.
- Tier One Initiative, 2014-15.
- Core Team Member for the UNLV Information Technology Master Plan, 2013.
- The First Annual STEM Summit, Economic Development Panel Speaker, 2013.
- Academic Assessment Committee, 2010.
- Judge, the Graduate & Professional Student Research Forum, 2010.
- Coordinating the NWCCU accreditation effort of the university as the Academic Affairs Fellow (2008-2010).
- Search Committee for the Academic Affairs Analyst professional staff position, Office of the Vice Provost for Academic Affairs, 2008.
- Participated in “Attaining Universal Goals in the Undergraduate Curriculum” campus conversations, November-December 2008.
- Search Committee for the Immigration Specialist professional staff position, Office of International Students & Scholars, 2008.
- Infrastructure panelist, Focus: 50 to 100, five meetings, 2007-08.
- Reviewer, Institutional Development Grants, 2007. (reviewed 28 proposals)
- Associate Technical Director, Materials Support, HTHX Project, funded by DoE (2007-08)
- Participated in Academic Assessment Faire leading a roundtable discussion on the use of projects as assessment tool for mechanical engineering curriculum (2006)
- Participated in Office of Institutional Analysis and Planning (IAP) discussions for a new student tracking system (2005)
- Reviewing forty proposals for UNLV Planning Initiative Awards (2005)
- Reviewing thirteen proposals for UNLV Planning Initiative Awards (2004)
- Health and Biomedical Sciences Study Group (2003)
- Coordinated the write-up of the Materials Engineering and Science Macrotheme Committee (2002)

- University Planning Council (2000-2005)
- Campus Planning Retreat (August 21, 2000)
- Faculty Reward Process Committee (1999-2002)
- Technology Committee (1999-2002)
- Teaching Awards Selection Committee (1998)
- Academic Standards Committee (1995-97) (Chair, 1996-97)
- Spanos Teaching Award Selection Committee (1996)
- Sabbatical Leave Committee. (1992-2002) (Chair, 1997-2002)
- Graduate College Student and Faculty Issues (1991-94)
- Science and Technology Day (1989-1991)
- University Curriculum Committee (proxy for Dr. William Culbreth for 1989).

D. System

- Reviewer for the Nevada Space Grant Scholarships (total of 5 applications) (2010)
- Reviewer for the Nevada Space Grant Scholarships (total of 3 applications) (2006)
- Reviewer for the Cognitive Information Processing proposals (total of 19 proposals) (2005)
- Common Course Numbering (2003)
- Articulation Meetings (Spring 2000).
- Attended Meetings on Biomedical Engineering Degree.
- Attended Meetings on Cooperation with SANDIA National Labs.

E. Community

- Presentation to Beatty Elementary School students, April 29, 2008. The presentation title is, “Why Be a Mechanical Engineer?”
- Presentation to students at Canyon Springs High School, April 8, 2008. The presentation title is, “Why MEG at UNLV?”
- Presentation to 4th grade students at Beatty Elementary School, March 15, 2007. The presentation title is, “Why Be a Mechanical Engineer?”
- Mentor, Clark High School Robotics Club. Helped design and construct the schools entry in FIRST Competition (2007-2008)
- Helped organize the “Spring 2006 Diversity Action Seminar,” which is a unique program designed to cultivate interest in engineering as a profession among high school females and minorities. The event was held March 17 and 18, 2006, 9 a.m. to 3 p.m. in the Thomas T. Beam Engineering Complex on the UNLV campus. The event was attended by students from Clark and Laughlin High Schools.
- Helped organize the “Summer 2006 Diversity Action Seminar,” which is a unique program designed to cultivate interest in engineering as a profession among high school females and minorities. The event was held June 23 and 24, 2006, 8 a.m. to 5 p.m. in the Thomas T. Beam Engineering Complex on the UNLV campus.
- Member of Advisory Board, Advanced Mathematics and Science Academy, Clark High School (2006-2011)

F. Service to Profession

- ASME/ABET Engineering Program Evaluator (PEV), 2011-
- Invited to participate in the "News and Terrorism: Communicating in a Crisis" Workshop, January 13, 2009, Alexis Park, Las Vegas.
- Invited Judge, International Robot Olympiad (IRO 2008) <http://www.iro2008.org/>, Kuala Lumpur, Malaysia, December 2008.
- Panelists in the (Design Education Committee) panel session entitled "What should be in a designer's toolbox: an industry perspective." The panel was part of the ASME International Design Engineering Technical Conferences (IDETC 07).
- Hosted the ASME Essential Teaching Seminar on March 16-18, 2006. The seminar, which targets engineering and technology faculty, helps faculty improve their teaching skills. The seminar was attended by *seventeen* faculty members from various institutions including Western Kentucky University, California Maritime Academy, Weber State University, Pennsylvania State University, Kansas State University, and University of Toledo in addition to those from UNLV.

Editorial Boards of Technical Journals

- Editorial Board, International Journal of Robotics and Mechatronics
- Editorial Board, Modelling and Simulation in Engineering
- Editorial Board, ISRN Mechanical Engineering
- Editorial Consultant Board, International Journal of Advanced Robotic Systems

Technical Committees of Professional Organizations

- Honors Committee, Model Identification and Intelligent Systems (MIIS) Technical Committee, American Society of Mechanical Engineers, 2006-2008.
- Intelligent Systems Panel Meeting, Dynamic Systems and Control Division, ASME, November 2005.
- IASTED Technical Standing Committee on Modelling and Simulation (2000-2003)
- IASTED Technical Standing Committee on Robotics (2000-2003)

External Examiner of Ph.D. Dissertations at International Universities

- Ph.D. dissertation defense of Sabreen Abdelwahab, Faculty of Engineering, Ain Shams University, Egypt, July 2015.
- Ph.D. dissertation defense of Tarek Sadek, Faculty of Engineering, Alexandria University, Egypt, May 2013.
- Ph.D. dissertation defense of Aiman Elgezery, Faculty of Engineering, Alexandria University, Egypt, May 2013.
- Ph.D. dissertation defense of Loh Sai Keong, University of Malaya, 2012.
- Ph.D. dissertation defense of Mostafa Elhadary, Faculty of Engineering, Alexandria University, Egypt, January 2011.
- Ph.D. dissertation defense of Hisham Hegazi, Faculty of Engineering, Cairo University, Egypt, June 2001.

Organization of Technical Conferences

- Co-Organizer, PDV Workshop 2014, June, 2014, Las Vegas, NV.
- International Committee Member, 4th International Conference on Mechatronics (ICOM'11), May 2011, Kuala Lumpur, Malaysia.
- Member of Organizing Committee of “ASME International Design Engineering Technical Conferences & Computers and Information In Engineering Conference (IDETC 2007),” September 2007, Las Vegas, Nevada.
- Member of Organizing Committee of “Advances in Materials and Processing Technologies (AMPT 2006),” July 2006, Las Vegas, Nevada.

Review Coordinator

- DAC-1 (Design Optimization Algorithms), 2011 ASME International Design Engineering Technical Conferences (IDETC), Washington, DC. The session has a total of *five* papers.
- DAC-14 (Design Optimization Algorithms), 2010 ASME International Design Engineering Technical Conferences (IDETC), Montreal, Canada. The session has a total of *six* papers.
- DAC-1 (Application-Tailored Optimization Methods), 2009 ASME International Design Engineering Technical Conferences (IDETC), San Diego. The session has a total of *four* papers.
- DAC-13 (Design Optimization Algorithms), 2009 ASME International Design Engineering Technical Conferences (IDETC), San Diego. The session has a total of *seven* papers.
- DAC-19 (Multidisciplinary Design Optimization), 2008 ASME International Design Engineering Technical Conferences (IDETC), New York, NY. The session has a total of *seven* papers.
- Track Organizer, Track 7-6 (Innovative Approaches to Teaching Fundamental Topics), 2007 ASME International Mechanical Engineering Congress & Exposition (IMECE). The track has three sessions with a total of *fifteen* papers.
- Session Organizer, DSC-3 B (Fuzzy Logic I), 2006 ASME International Mechanical Engineering Congress & Exposition (IMECE). The session has a total of *four* papers.
- Session Organizer, DSC-3 B (Fuzzy Logic and Robotics II), 2006 ASME International Mechanical Engineering Congress & Exposition (IMECE). The session has a total of *four* papers.
- Session Organizer, MEED-8 B (Innovative Approaches to Teaching Thermal and Fluid Sciences), 2006 ASME International Mechanical Engineering Congress & Exposition (IMECE). The session has a total of *four* papers.
- Review Coordinator, 2002 ASME Design Automation Committee. Duties include selecting reviewers for papers, transmitting decisions to the committee.
- Review Coordinator, 2001 ASME Design Automation Committee. Duties include selecting reviewers for papers, transmitting decisions to the committee.
- Review Coordinator, 2000 ASME Design Automation Committee. Duties include selecting reviewers for papers, transmitting decisions to the committee.

Professional Organizations

- ASME Silver State Board of Directors (2010-13).

- Member of Executive Committee (College Relations), ASME, Silver State Section (1992-94), (2007-11).
- Secretary, High Level Radioactive Waste Committee, ASME Nuclear Engineering Division, (1994-2000).
- Co-hosted ASME regional section meetings and HPV race, Las Vegas, April 1993.
- Vice-Chairman, ASME, Silver State Section (1993-94).
- Faculty Advisor, ASME Student Section, UNLV (1991-).

College Planning

- Attended a meeting at Cambridge England regarding creating a new Saudi university, Al Faisal University, March 2008.

Program Review

- Member of an Expert Panel at the Tampere University of Technology (TUT) Research Assessment Exercise, 2011, Finland
- Department of Mechatronics Engineering, International Islamic University, Malaysia (2006-2010).

Chairmanship of Technical Sessions at Professional Meetings

- Session Chair, SYMP 3 Modeling, Simulation and Control of Adaptive Systems, 2012 ASME, Conference on Smart Materials, Adaptive Structures and Intelligent Systems, Stone Mountain, September 2012. The session has a total of *four* papers.
- Review coordinator, DAC-1 (Design Optimization Algorithms), 2011 ASME International Design Engineering Technical Conferences (IDETC), Washington, DC.
- Session Chair, 3-15 (Adaptive Structures Control), ASME 2011 Conference on Smart Materials Adaptive Structures & Intelligent Systems (SMASIS), Scottsdale, Arizona.
- Session Organizer, 11-1-3 System Modeling I, 2009 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2009.
- Session Chair, DAC-1-2 (Application-Tailored Optimization Methods), 2009 ASME International Design Engineering Technical Conferences (IDETC), San Diego. The session has a total of *four* papers. The session has a total of *four* papers.
- Session Chair, DAC-22-1 (Design Optimization Algorithms), 2009 ASME International Design Engineering Technical Conferences (IDETC), San Diego. The session has a total of *five* papers.
- Session Chair, DAC-12-1 (Design Optimization Algorithms), 2008 ASME International Design Engineering Technical Conferences (IDETC), New York, NY. The session has a total of *four* papers.
- Session Chair, DAC-19-1 (Multidisciplinary Design Optimization), 2008 ASME International Design Engineering Technical Conferences (IDETC), New York, NY. The session has a total of *four* papers.
- Session Co-Chair, VIB-11-1 (Model Identification and Intelligent Systems I), 2007 ASME International Design Engineering Technical Conferences (IDETC), Las Vegas, NV. The session has a total of *five* papers.

- Session Chair, VIB-11-2 (Model Identification and Intelligent Systems II), 2007 ASME International Design Engineering Technical Conferences (IDETC), Las Vegas, NV. The session has a total of *four* papers.
- Session Co-Chair, DEC-6-2 (What should be in a designer's toolbox?: An industry perspective), 2007 ASME International Design Engineering Technical Conferences (IDETC), Las Vegas, NV. The session has a total of *five* presentations.
- Organized Session on Fuzzy Logic Applications in the 2005 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2005) with Dr. Sami Fadali, UNR.
- Chaired a session on “Dynamics and Vibration of Robotic Systems I,” 2003 ASME International Design Engineering Technical Conference, Chicago, Illinois, September 2003.
- Chaired a session on “Dynamic Response of Materials,” 2003 ASME Mechanical and Materials Conference, Scottsdale, Arizona, June 2003.
- Chaired a session on “Micro Injury/Surgical and Biomechanics” the 2001 ASME International Mechanical Engineering Congress and Exposition, New York, New York, November 2001.
- Chaired a session on “Design Automation Methods,” 27th Design Automation Conference, Pittsburgh, Pennsylvania, September 2001.
- Chaired a session on “Mechanical Design Analysis,” 27th Design Automation Conference, Pittsburgh, Pennsylvania, September 2001.
- Chaired a session on “Advances in Intelligent Systems,” the 2000 ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2000.
- Chaired a session on “Simulated Annealing/Optimal Layout,” 26th Design Automation Conference, Baltimore, Maryland, September 2000.
- Co-chaired a session on “Assembly/Disassembly,” 26th Design Automation Conference, Baltimore, Maryland, September 2000.
- IASTED Control 97 Conference, Cancun, Mexico, May 1997.
- Chaired a session on “Mobile Robots” 4th IASTED International Conference on Robotics and Automation, Hawaii, August 1996.
- Co-chair of “Robotics” and “Design of Mechanisms” sessions at the 4th Conference of Applied Mechanisms and Robotics, Cincinnati, Ohio, December 1995.
- Co-chair of “Planar Mechanisms Synthesis” session at the 3rd Conference of Applied Mechanisms and Robotics, Cincinnati, Ohio, November 1993.
- Review papers and chair session of “Kinematics and Dynamics” session, Fourth World Conference on Robotics Research, Pittsburgh, Pennsylvania, September 1991.
- Co-chair of “Mechanisms and Robot Dynamics” session at the 2nd Conference of Applied Mechanisms and Robotics, Cincinnati, Ohio, November 1991.
- Chair of “Flexible Robots” session, ASME Winter Annual Meeting, Dallas, Texas, November 1990.

Reviewer of Technical Books

- “Mechanics of Machines, 2nd Edition,” by William Cleghorn and Nikolai Dechev, Oxford University Press, 2014.
- “Mechanics of Machines, 2nd Edition,” by William Cleghorn and Nikolai Dechev, Oxford University Press, 2012.

- Review of a book proposal on “Fuzzy Control and Identification,” John Wiley & Sons, 2009.
- “Shigley’s Mechanical Engineering Design,” Budynas and Nisbett, McGraw-Hill Publishing, 2006.
- “Optimization Concepts and Applications in Engineering,” Belegundu and Chandrupatla, Cambridge Press, 2006.
- “Essentials of Pro/Engineer,” Y. Haik and M. Kilani, Brookes/Cole Publishing Company, Pacific Grove, California, 2000.
- “A First Course in the Finite Element Method Using Algor,” Daryl Logan, Brookes/Cole Publishing Company, Salt Lake City, Utah, 1999.

Reviewer for Tenure and Promotion Cases

- Evaluation of a promotion to professor case at the Caledonian College of Engineering, Oman, 2015.
- Evaluation of a tenure and promotion to associate professor case at the American University at Cairo, 2015.
- Evaluation of tenure and promotion to the rank of associate professor, University of Nevada, Reno, 2013.
- Evaluation of a promotion to Chair position case at Cranfield University, United Kingdom, 2013.
- Evaluation of two promotion to associate professor cases at the International Islamic University, Malaysia, 2013.
- Evaluation of a promotion to full professor case at the South Dakota State University, 2012.
- Evaluation of a promotion to professor case at the International Islamic University, Malaysia, 2012.
- Evaluation of a promotion to associate professor case at the Caledonian College of Engineering, Oman, 2012.
- Evaluation of a promotion to associate professor case at the Caledonian College of Engineering, Oman, 2011.
- Evaluation of a promotion to associate professor case at the International Islamic University, Malaysia, 2010.
- Evaluation of a tenure and promotion to the rank of associate professor case at the South Dakota State University, 2009.
- Evaluation of a promotion to full professor case at the American University at Cairo, 2007.
- Evaluation of a promotion to full professor case at the Idaho State University, 2007.
- Evaluation of the research outputs of a professor at the University of Johannesburg, South Africa, 2006.
- Evaluation of tenure and promotion to the rank of associate professor case, Kansas State University, 2006.
- Evaluation of a promotion to full professor case at the Tennessee Technological University, 2000.
- Evaluation of a promotion to full professor case at the University of Idaho, 1998.

Member of Program Committee for Technical Conferences

- IASTED International Conference on Modelling, Identification and Control (MIC 2013), February, 2013, Innsbruck, Austria
- IASTED International Conference on Modelling and Simulation (AfricaMS 2012), Gaborone, Botswana. September, 2012.
- IASTED International Conference on Modelling and Simulation (MS), Banff, Canada , July, 2012.
- IASTED International Conference on Modelling, Identification and Control (AsiaMIC 2012) April, 2012, Phuket, Thailand.
- IASTED International Conference on Modelling, Simulation, and Identification (MSI 2011), Pittsburgh, USA, November, 2011
- IASTED International Conference on Robotics and Applications (RA 2011), Vancouver, BC, Canada, June, 2011.
- IASTED Modelling and Simulation 2007 conference in Beijing, China, October, 2007.
- IASTED Robotics and Applications 2007 conference in Würzburg, Germany, August 2007.
- The 18th IASTED International Conference on Modelling and Simulation, May, 2007 Montreal, Quebec, Canada. Duties included reviewing three full papers for the conference.
- The 16th IASTED International Conference on Modelling, Simulation, and Optimization, September, 2006, Gaborone, Botswana. Duties included reviewing three full papers for the conference.
- The IASTED International Conference on Robotics and Applications, Honolulu, USA, August 2006. Duties included reviewing one full paper for the conference.
- The 16th IASTED International Conference on Modelling and Simulation, May, 2006 Montreal, Quebec, Canada. Duties included reviewing three full papers for the conference.
- The International Conference on Advances in Materials and Processing Technologies, July 2006, Las Vegas.
- The IASTED International Conference on Robotics and Applications, Cambridge, USA, October 2005. Duties included reviewing seven full papers for the conference.
- The IASTED 5th International Conference on Modelling, Simulation, and Optimization, August, 2005, Oranjestad, Aruba. Duties included reviewing three full papers for the conference.
- The 16th IASTED International Conference on Modelling and Simulation, May, 2005 Cancun, Mexico. Duties included reviewing one full paper for the conference.
- The 10th IASTED International Conference on Robotics and Applications, Honolulu, USA, August 2004. Duties included reviewing one full paper for the conference.
- The IASTED International Conference on Modelling, Simulation, and Optimization, August, 2004, Kauai, Hawaii. Duties included reviewing seven full papers for the conference.
- The IASTED International Conference on Modelling and Simulation, March, 2004, Marina Del Rey, CA. Duties included reviewing five full papers for the conference.
- 8th Cairo University International Conference on Mechanical Design and Production (MDP - 8) CAIRO- EGYPT, January 4- 6 / 2004.
- The IASTED International Conference on Modelling, Simulation, and Optimization, July, 2003, Banff, Alberta, Canada. Duties included reviewing three full papers for the conference.

- IASTED International Conference on Robotics and Applications, Salzburg, Austria, June 2003. Duties included reviewing six full papers for the conference.
- IASTED International Conference Modelling and Simulation (MS 2003), Palm Springs, California, February, 2003. Duties included reviewing two full papers for the conference.
- The 5th IASTED International Conference on Intelligent Systems and Control (ISC 2002), Tsukuba, Japan, October 2002. Duties included reviewing four full papers for the conference.
- IASTED International Conference on Applied Simulation and Modelling (ASM 2002), Crete, Greece, June 2002. Duties included reviewing four full papers for the conference.
- IASTED International Conference on Control and Applications, Cancun, Mexico, May 2002. Duties included reviewing six full papers for the conference.
- IASTED International Symposium on Modelling and Simulation, Marina Del Rey, CA, May 2002. Duties included reviewing three full papers for the conference.
- 21st IASTED International Conference Modelling, Identification and Control, Innsbruck, Austria, February, 2002. Duties included reviewing one full paper for the conference.
- IASTED International Conference on Intelligent System and Control, Tampa, USA, October 2001. Duties included reviewing six full papers for the conference.
- IASTED International Symposium on Applied Simulation and Modelling, Marbella, Spain, September 2001. Duties included reviewing eight full papers for the conference.
- IASTED International Conference on Control and Applications, Banff, Canada, June 2001. Duties included reviewing seven full papers for the conference.
- IASTED International Symposium on Modelling and Simulation, Pittsburgh, Pennsylvania, USA, May 2001. Duties included reviewing one full paper for the conference.
- Twentieth IASTED International Conference on Modelling, Identification And Control, Innsbruck, Austria, February 2001. Duties included reviewing seven abstracts for the conference.
- IASTED International Conference on Intelligent System and Control, Honolulu, USA, August 2000. Duties included reviewing four full papers for the conference.
- IASTED International Conference on Robotics and Applications, Honolulu, USA, August 2000. Duties included reviewing five full papers for the conference.
- IASTED International Conference on Applied Simulation and Modelling Banff, Canada, July 2000. Duties included reviewing one full paper for the conference.
- IASTED International Conference on Control and Applications, Cancun, Mexico, May 2000. Duties included reviewing five full papers for the conference.
- IASTED International Conference on Intelligent Systems and Control, Santa Barbara, USA, October 1999. Duties included reviewing seven full papers for the conference.
- IASTED International Conference on Robotics and Applications, Santa Barbara, USA, October 1999. Duties included reviewing eight full papers for the conference.
- IASTED International Conference on Control and Applications, Banff, Canada, July 1999. Duties included reviewing twenty abstracts and full papers for the conference.
- IASTED International Conference on Control and Applications, Honolulu, USA, August 1998. Duties included reviewing papers for the conference.
- IASTED International Conference on Robotics and Manufacturing, Banff, Canada, July 1998. Duties included reviewing papers for the conference.

- IASTED International Conference on Intelligent Systems and Control, Halifax, Canada, June 1998.
- IASTED International Conference on Control, Cancun, Mexico, May 1997.
- IASTED International Conference on Robotics and Manufacturing, Honolulu, Hawaii, August 1996.
- 4th IASTED International Conference on Robotics and Automation, August 1996, Hawaii.

Reviewer of Papers at Professional Journals

- Iranian Journal of Electrical and Computer Engineering
- Journal of Vibration and Control
- ASCE Journal of Energy Engineering
- International Journal of Control
- Control and Intelligent Systems
- International Journal of Control and Computers.
- Journal of Robotic Systems.
- Journal of Intelligent and Fuzzy Systems.
- ASME Journal of Mechanical Design.
- ASME Journal of Dynamic Systems, Measurement, and Control.
- Journal of Applied Mechanisms & Robotics.
- SME Transactions on Robotics Research.
- IEEE Transactions on Systems, Man, and Cybernetics.
- IEEE Transactions on Fuzzy Systems.
- AIAA Journal.

Reviewer of Papers at Professional Conferences

- 2006 ASME International Mechanical Engineering Congress & Exposition (IMECE) (four papers)
- 2005 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2005) (two papers)
- SAE Commercial Vehicle Engineering Congress & Exhibition, October, 2004 (one paper)
- 30th Design Automation Conference, Salt Lake City, Utah, September 2004. (one paper)
- 29th ASME Design Automation Conference, September 2003 (one paper)
- 3rd IASTED International Conference on Circuits, Signals, and Systems, May 2003 (one paper)
- 2000 ASME International Mechanical Engineering Congress and Exposition, November 2000, (two papers).
- IASTED International Conference on Modelling and Simulation, Pittsburgh, Pennsylvania, May 2000. (five papers)
- 1999 ASME Design Automation Conference
- 1999 IEEE International Conference on Robotics and Automation.
- 1998 ASME Winter Annual Meeting, Dynamic Systems and Control Division.
- 1996 World Conference on Robotics Research
- 1997 ASME Mechanisms Conference.
- 1997 ASME Design Automation Conference.

- IASTED International Conference on Applications of Control and Robotics, Orlando, Florida, January 1996.
- 1995 IEEE Conference on Decision and Control.

Reviewer of Proposals

- Reviewer for the Cognitive Information Processing proposals (total of 19 proposals) (2005)
- Intelligent Systems Project NASA (Automated Reasoning). Duties include review of *twenty* pre-proposals.
- Summer Research Fellowship, University of Villanova (2002)
- State of Idaho (1996-1998)

F. Faculty Development Activities

Attended the Following Conferences/Workshops

- The 2013 ASEE Engineering Research Council (ERC) Annual Conference Meeting from March, 2013 at the George Washington University, Marvin Center, Washington DC.
- The 2012 Advanced National Effective Teaching Institute (NETI-2), October 2012, Seattle, Washington.
- NSF Bio-Inspired Design Workshop, March 2011, Palo Alto, California.
- 2007 Advanced Reactor, Fuel Cycle, and Energy Products Workshop for Universities, March 20, 2007, Gaithersburg, MD.
- Mechanical Engineering Department Heads Forum, 2006 International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 2006.
- Mechanical Engineering Department Heads Forum, 2005 International Mechanical Engineering Congress and Exposition, Orlando, Florida, November 2005.
- ASME ABET EC-2000 Preparedness Workshop, New Orleans, Louisiana, November, 2002.
- Decision-Based Design Workshop, 2000 ASME International Design Conferences, Baltimore, Maryland, September 2000.
- SBIR EPSCOR Conference, Reno, October 1998.
- NSF Faculty Enhancement Workshop on Mechatronics Curriculum Development, San Jose, California, June 1996.
- 9th International Conference on CAD/CAM, Robotics, and Factory of the Future, New Jersey, August 1993.
- Third International Workshop on Neural Networks and Fuzzy Logic, (hosted by NASA, Lyndon Johnson Space Center) Houston, Texas, June 1992.
- 22nd Biennial Mechanisms Conference, Scottsdale, Arizona, September 1992.
- Fourth World Conference on Robotics Research, Pittsburgh, Pennsylvania, September 1991.
- "Workshop on the Mathematical and Engineering Aspects of Control Systems," (hosted by the U. S. Army Armament R&D Center) New Jersey, November 1990.