S H R E E K A N T H   A .   M A N D A Y A M ,   P h . D .

R E S E A R C H   O F F I C E • R O W A N   U N I V E R S I T Y
G L A S S B O R O ,   N J   0 8 0 2 8 • (8 5 6)   2 5 6 - 5 3 3 3

RESEARCH: **Imaging, image processing, virtual reality and advanced visualization, sensor data fusion, nondestructive evaluation,** biomedical image processing, digital signal processing, and artificial neural networks.

EDUCATION:

Ph.D., Electrical Engineering   **Iowa State University**
(Communications and Signal Processing)   Ames, IA
Awarded: May 1996
Dissertation: *Invariance Transformations for Processing NDE Signals*

M.S., Electrical Engineering   **Iowa State University**
Awarded: December 1993   Ames, IA
Thesis: *Finite Element Modeling of Electrodynamic and Magnetostrictive Systems*

B.E., Electronics Engineering   **Bangalore University**
Awarded: April 1990   Bangalore, INDIA
Project: *Microprocessor Based Data Acquisition System for Wind Tunnel*

EMPLOYMENT:

Associate Provost for Research   **July 2011 – Present**
Rowan University   Glassboro, NJ
Executive Director   **July 2011 – Present**
South Jersey Technology Park at Rowan University   Mullica Hill, NJ

Department Chair   **July 2006 – June 2011**
Professor   **July 2009 – Present**
Associate Professor   **September 2001 – June 2009**
Graduate Studies Chair   **September 2002 – June 2006**
Assistant Professor   **September 1997 – August 2001**
Rowan University, Electrical & Computer Engineering Dept.   Glassboro, NJ

Senior Research Associate, The National Academies   **August – December 2005**
NASA Stennis Space Center   Mississippi

Research Consultant   **May – July 2005**
GE Global Research, John F. Welch Technology Center   Bangalore, INDIA

Assistant Professor   **August 1996 – August 1997**
Iowa State University, Electrical & Computer Engineering Dept.   Ames, IA

Research Associate   **December 1995 – August 1997**
Iowa State University, Electrical & Computer Engineering Dept.   Ames, IA

Graduate Research Assistant   **August 1991 – December 1995**
Iowa State University, Electrical & Computer Engineering Dept.   Ames, IA

Assistant Lecturer   **September 1990 – March 1991**
R.V. College of Engineering, Electronics Engineering   Bangalore, INDIA

EXPERIENCE: **Associate Provost for Research**   **July 2011 – Present**
                          Rowan University   *Glassboro, NJ*

Reporting to the Provost, I am responsible for promoting, supporting, administering and facilitating the research, scholarly and creative activity of all the faculty, staff and students at the University. Reporting to me is the Office of Sponsored Programs which manages pre-award, post-award, compliance and contracts related to research grants from government and industry.

The University has over 11,000-students, 700-faculty and 4-campuses, housing the Colleges of Business, Communication & Creative Arts, Education, Engineering, Science & Mathematics, Humanities & Social Sciences, Performing Arts, Graduate and Continuing Education, and the Cooper Medical School.

My major administrative accomplishments during the first year of my appointment as the Associate Provost for Research are:

1. Reorganization of the Office of Sponsored Programs: I hired new management and staff, promoted existing staff as appropriate, in order to effectively support pre-award, post-award, compliance and contract functions in the Office. I developed and implemented a strategic operating plan to address issues related to personnel, operations, finances, compliance, advocacy and customer-service.

2. External Advocacy and Outreach: I developed a marketing campaign in which I identified the demonstrated research strengths of the faculty. I engaged the faculty in every department on Campus, our Deans and Senior Administration and our stakeholders including the Board of Trustees and the Board of Directors of the South Jersey Technology Park. I established connections with the offices of our Congressional representatives, Program Directors at the major funding agencies, and my counterparts at our neighboring institutions.

3. Internal Advocacy: In order to reduce the cost to Rowan faculty for doing research on campus, I successfully partnered with the Division of Administration and Finance in negotiating with the Federal government to establish a competitive overhead (indirect) rate for sponsored programs. I advocated to the President's Cabinet for allocating a portion of the indirect funds recovered to be held in a reserve fund in the Research Office to be used for matching faculty grant proposals.

With my leadership, the Office of Sponsored Programs received grant awards in FY-2012 exceeding $9.1M – a 56% increase from the previous year.

Executive Director   **July 2011 – Present**
South Jersey Tech Park at Rowan University   *Mullica Hill, NJ*

Reporting to the President, I am responsible for managing the South Jersey Technology Park, which is a collaborative effort between the State of New Jersey and Rowan University to lead the economic revitalization of southern New Jersey through an integrated strategy of science and technology initiatives.

The Tech Park is situated on a150-acre campus and consists of 16-University research labs, a Business Incubator with 15- tenant companies engaged in collaborative educational and R&D activities with the University.

My significant accomplishments during the first year of my role as Executive Director are:

1. Board Management: I recruited new members to the Board of Directors with expertise in intellectual property, entrepreneurship and technology transfer into the marketplace. I increased the connections between the main campus of Rowan University and the Tech Park by engaging the Board in operations related to intellectual property, technology transfer and marketing of our faculty's technology credentials.

2. Intellectual Property: I persuaded the Board to establish a budget for legal costs associated with protecting faculty invention disclosures with provisional and full patents, and developed an IP solicitation process to expand and foster an IP sensitive climate on campus. I established the position of Director of Technology Transfer who interfaces with faculty (and students) on campus.

3. Marketing: I capitalized on Board member experience to launch a marketing initiative to recruit companies to locate in the Tech Park. A prospectus was developed that addresses not only the technology benefits to associating with a major University in the region, but also competitive and flexible real estate arrangements and tax incentives from the State and County.

As a result of this targeted investment in intellectual property, the number of invention disclosures in the University has doubled and patent applications have tripled. An aggressive marketing and recruiting campaign has targeted 7 potential tenants as candidates for locating in the South Jersey Tech Park.

Department Chair	**July 2006 – June 2011**
Professor	**July 2009 – Present**
Associate Professor	*September 2001 – June 2009*
Assistant Professor	*September 1997 – August 2001*
Rowan University, Electrical & Computer Engineering Dept.	*Glassboro, NJ*

As Department Chair of the Electrical & Computer Engineering program at Rowan University, I led a team of 8-full-time faculty, 3-adjunct faculty, 3-staff and 160-undergraduate and graduate students.

Since my appointment as Department Chair, the Rowan ECE program has been consistently ranked in the **top-10** in the nation by *US News & World Report* (for programs whose highest degree is a Masters').

Since my appointment as Chair, research awards and expenditures for the ECE department have doubled (**FY-11** research awards exceeded **$1.4-Million**) The ECE department has led the College in annual research expenditures.

The ECE department led the College in faculty publications, with **2-book chapters, 15-journal articles and 27-conference proceedings** in FY-2009.

In 2008, the ECE department expanded its research lab facilities by over **3,200-sq-ft** with the opening of the South Jersey Technology Park. As an anchor tenant, ECE

faculty and graduate students currently lead the College in occupancy and activity at the new facility.

I launched a targeted student recruitment campaign, showing consistent **yields** in excess of **45%**, providing healthy enrollments of quality ECE students every year.

Leading a special Task Force created by the Provost, I established a multi-disciplinary program on Systems Engineering, combining faculty from the Colleges of Engineering, Business and Computer Science (the first students will be enrolled in Spring 2010). The ECE program partnered with the Department of Music to offer the College's first general education course in Signals & Systems & Music, targeted towards freshmen engineering and music students (the first offering was in Spring 2010).

I have partnered with University Advancement and the President's Office to launch a development campaign targeted towards the major employers of our students, with the objective of raising external funds to support endowed Chairs and named laboratories. An alumni giving campaign launched in 2008 resulted in **10%** of our alumni responding with donations.

Since I was hired as the first faculty member in the ECE department at the newly created College of Engineering at Rowan University, I have led the development of a laboratory-based curriculum and have designed unique collaborative learning environments. I have developed laboratory experiences for teaching graduate and undergraduate courses in communications, digital image processing, artificial neural networks and engineering electromagnetics.

At Rowan, I have secured research funding of **$4.1-M (As PI: $2.3-M)** from the *National Science Foundation, NASA, US Department of Energy, US Department of Commerce, National Institutes of Health, US Navy, US Army, Water Environment Research Foundation, American Institute of Cancer Research, New Jersey DOT*, etc.

I have developed a state-of-the-art **Imaging & Virtual Reality Laboratory** with X-ray, optical, ultrasonic, acoustic-emission, magnetic and thermal interrogation and advanced visualization including a CAVE® virtual reality system.

As Assessment Activities Coordinator for the ECE department I have developed novel program assessment tools. I led the organization of a successful ABET (EC-2000) **Accreditation** visit for the ECE department in October 2000 and was Department Chair during the successful September 2006 visit.

As the ECE Graduate Studies coordinator, I recruited and enabled the largest increase to date in the size of our graduate program. The ECE department has consistently led the College in external funding for graduate student support.

Assistant Professor   *August 1996 – August 1997*
Research Associate   *December 1995 – August 1997*
Iowa State University   *Ames, IA*
Taught freshman engineering course with computational laboratory in C and graduate course in digital image processing.

Managed research projects, wrote proposals, generated technical reports, supervised research of graduate students (areas include digital signal processing, wavelet neural networks, automatic pattern recognition and interactive computer graphics).

Conducted research in the following areas, applied to nondestructive evaluation: wavelet neural networks, texture-based image processing

Graduate Research Assistant   ***August 1992 – December 1995***
Iowa State University   ***Ames, IA***
Co-taught the following courses: communications systems (junior level), pattern recognition principles (graduate level), electrical circuits (sophomore level)

Developed novel signal processing algorithms and invariant pattern techniques for characterizing gas pipeline inspection data. Project funded by the Gas Research Institute, Chicago, IL.

Designed neural network based models for characterizing hysteresis curves of railroad wheel samples.

Optimized a 3-D finite element code for computing the current density profile inside a railroad wheel, for the Cray C-90 supercomputer.

Assisted in the development of an automated test system for scanning the wheel for defects. Project supported by the Association of American Railroads.

Developed a computationally efficient numerical model for simulating electrodynamic vibration absorbers and magnetostrictive actuators. Project funded by the Carver grant, Iowa State University.

Designed a phase shifter network for an inflatable spherical antenna for lunar astronomy. Project sponsored by NASA.

Investigated spectral estimation techniques for discrete time stochastic processes.

Developed Monte Carlo methods to model electromagnetic NDE phenomena.

Assistant Lecturer   ***September 1990 – March 1991***
R. V. College of Engineering   ***Bangalore, INDIA***
Taught freshman and sophomore courses in electronic devices and circuits, microelectronics, electromagnetics.

TEACHING EXPERIENCE

Digital Image Processing   **F'09, F'07, S'06, F'03, F'01, S'99**
Taught one section of the graduate/senior-elective project-based course in digital image processing.

Artificial Neural Networks   **F'10, F'08, F'06, F'04, S'02, S'00, F'98**
Taught one section of graduate/senior-elective project-based course in artificial neural networks.

Electrical Communications Systems S'11, S'10, S'09, S'08, S'07, S'06, S'04, S'03, S'02, S'01, S'00, S'99
Taught one section of junior-core lab-lecture course in analog and digital communications systems and circuits.

Digital Communications   **F'02**
Taught one section of graduate/senior-elective lab-lecture course in advanced digital communications.

Computer Architecture II: Specialized   **F'01**

Taught two sections of senior-core lab-lecture course in specialized computer architectures.

Engineering Electromagnetics I   **F'04, F'02, F'00, F'99, F'98**

Taught two sections of junior-core lab-lecture course in electrostatics, magnetostatics and quasistatics.

Engineering Frontiers: Seminar   **S'04, S'00**

Coordinated senior-core seminar course.

Principles of Nondestructive Evaluation   **F'99**

Taught one section of the graduate/senior-elective project-based course in nondestructive evaluation.

Networks II   **S'98**

Taught one section of sophomore-core lab-lecture course in AC circuits.

Sophomore Engineering Clinic II   **S'98**

Taught one project module of sophomore level design course – students developed a portable NDE device for aircraft skin inspection.

Networks I   **F'97**

Taught one section of sophomore-core lab-lecture course in DC circuits.

Statics   **F'97**

Taught one section of sophomore-core statics course.

PROPOSAL AND GRANT ACTIVITY

Funded (Total at Rowan: $4.1-M; As PI: $2.3-M)

1. "Application of a 3-D Virtual Reality Tool for Community Planning and Economic Development," **Principal Investigator**, *US Department of Commerce – Economic Development Administration*, Award Amount: $424,962, 2011-2012.

2. "An Immersive, Interactive and Navigable Tool Using 3-D Virtual Reality Systems for Modeling Flooding and Remediation of Urban Environments," **Principal Investigator**, *AT&T Foundation*, Award Amount: $50,000, 2011-2012

3. "Development of a Virtual Green School Simulation in the Rowan University CAVE®," **Principal Investigator**, *Educational Information Resource Center*, Award Amount: $20,390, 2012.

4. "A Virtual Walkthrough of the Rohrer College of Business Living and Learning Center," **Principal Investigator**, *Rohrer College of Business*, Award Amount: $5,000, 2011-2012.

5. "Development of a Teleplace® Enabled On-Board Trainer (OBT) Console," **Principal Investigator**, *US Navy – Naval Surface Warfare Center*, Award Amount: $69,238, 2011.

6. "Acquisition of an X-ray Computed Tomography System with Loading Capabilities," Co-Principal Investigator, *National Science Foundation*, Award Amount: $296,650, 2010-2012.

7. "Acquisition of an Immersive Virtual Reality System for the South Jersey Technology Park at Rowan University," **Principal Investigator**, *National Science Foundation*, Award Amount: **$392,000**, 2008-2011.

8. "US-France Planning Visit; Study of Granular Material Crushing Through Imaging and Discrete Element Modeling Simulation," Co-Principal Investigator, *National Science Foundation*, Award Amount: $ 15,297, 2010-2011.

9. "Intelligent Valves for Integrated Systems Health Management," **Principal Investigator**, *NASA – Stennis Space Center*, Award Amount: **$100,000**, 2008-2010.

10. "Multi-Sensor Data Fusion for Integrated Systems Health Management (ISHM) in a Rocket Engine Test Stand," **Principal Investigator**, *NASA – Stennis Space Center*, Award Amount: **$30,000**, 2009-2010.

11. "Evolutionary Integrated Awareness Platform for Integrated Systems Health Management (ISHM)," **Principal Investigator**, *NASA – Stennis Space Center*, Award Amount: **$60,000**, 2008-2010.

12. "Development of Video Sensor Systems for Monitoring Ship-Board Equipment," **Principal Investigator**, *US Navy – Naval Surface Warfare Center*, Award Amount: $50,000, 2009-2010.

13. "Development of a Virtual Reality Simulation of the Flooding Characteristics for the Cramer Hill Neighborhood in the City of Camden," **Principal Investigator**, *Cooper's Ferry Development Association*, Award Amount: **$68,971**, 2009.

14. "Development of a Video Sensors Laboratory Protocol for Monitoring Ship-Board Systems," **Principal Investigator**, *US Navy – Naval Surface Warfare Center*, Award Amount: **$50,000**, 2008-2009.

15. "Virtual Reality Visualization for an Integrated Systems Health Management of the E-3 Test Facility," **Principal Investigator**, *NASA – Stennis Space Center*, Award Amount: **$90,000**, 2007-2010.

16. "Integrated Systems Health Management Visualization Interfaces," **Principal Investigator**, *NASA – Stennis Space Center*, Award Amount: **$4,500**, 2006-2007.

17. "Acquisition of a Desktop, High-Resolution, Three-Dimensional X-Ray Computed Tomography (CT) System," **Principal Investigator**, *National Science Foundation*, Award Amount: **$238,698**, 2004-2006.

18. "A Data Fusion System for the Non-Destructive Evaluation of Non-Piggable Pipes," **Principal Investigator**, *US Department of Energy*, Award Amount: **$215,866**, 2002-2005.

19. "Acquisition of a Portable Large Scale Visualization System for Nondestructive Evaluation," **Principal Investigator**, *National Science Foundation*, Award Amount: **$171,292**, 2002-2005.

20. "Development of an Acoustic Emission Test Platform with Biaxial Stress Loading System," **Principal Investigator**, *ExxonMobil Inc.*, Houston, TX, Award Amount: **$41,607**, 2002-2004.

21. "An Ensemble Based Incremental Learning Algorithm for Early Diagnosis, Confidence and Severity Estimation of Alzheimer's Disease," Co-Principal Investigator, *National Institutes of Health*, Award Amount: $343,075, 2003-2006.

22. "Three Dimensional Characterization and Modeling of Angular Materials," Co-Principal Investigator, *National Science Foundation*, Award Amount: $146,000, 2003-2005.

23. "Digital Imaging Across the Curriculum," Co-Principal Investigator , *National Science Foundation*, Award Amount: $74,998, 2003-2005.

24. "Development of an Advanced Visualization Protocol for Simulating Ship-Board Fuel Cell Systems," **Principal Investigator**, *Naval Surface Warfare Center, Carderock Division*, Award Amount: **$11,880**, 2004.

25. "Development of a Magnetic Flux Density Mapping System for Internal Magnetic Shields," **Principal Investigator**, *Thomson Consumer Electronics*, Lancaster, PA, Award Amount: **$59,169**; 2001 – 2002.

26. "Advanced Technology Vehicle Demonstrators," Co-Principal Investigator, New Jersey Department of Transportation/ New Jersey State Police, Award Amount: $350,000; 2001 – 2002.

27. "Ultrasonic Based Defect Characterization in Wastewater Concrete Pipelines Using Invariance Transformation Techniques," **Principal Investigator**, *Water Environment Research Foundation*, Award Amount: **$70,206**; 1999 – 2000.

28. "Development of a Configurable Thermal Imaging System for Nondestructive Evaluation of Materials," Co-Principal Investigator, *National Science Foundation*, Award Amount: $91,935; 2000 – 2002.

29. "Dietary Patterns and Breast Density," Co-Investigator, *American Institute of Cancer Research*, Award Amount: $55,000; 2000 – 2002.

30. "Communications, Signal Processing and VLSI: Education Under a Common Framework," Co-Principal Investigator, *National Science Foundation*, Award Amount: $74,939; 2001 – 2003.

31. "Hands on the Human Body," Co-Principal Investigator, *National Science Foundation*, Award Amount: $162,326; 2001 – 2003.

32. "Macroelectronics: A Gateway to Electronics Education," Co-Principal Investigator, *National Science Foundation*, Award Amount: $74,987; 1999 – 2000.

33. "Development of a Position Tracking System for a Handheld Scanner," **Principal Investigator**, *Physical Acoustics Corporation and US Army TACOM*, Award Amount: **$18,000**; 1999.

34. "Low Cost Automated Crash Notification System," Co-Principal Investigator, *New Jersey Department of Transportation*, Award Amount: $111,092; 1999 – 2000.

35. "Detection and Characterization of Stress-Corrosion Cracks in Gas Pipelines," **Principal Investigator**, *The Lindback Foundation*, Award Amount: **$15,000**; 1998.

36. "An Artificial Neural Network for Characterizing Residual Stress from Photothermal NDE Shearography Images," **Principal Investigator**, *Karta Technologies, Inc.*, San Antonio, TX, Award Amount: **$7,500**; 1998.

37. "A Venture Capital Fund to Encourage Rapid Product Development with Multidisciplinary E-Teams in the Junior Engineering Clinic II," Co-Principal Investigator, *National Collegiate Inventors and Innovators Alliance/Lemelson Foundation*, Award Amount: $30,000; 2000 – 2002.

38. "A Venture Capital Fund to Encourage Rapid Product Development with Multidisciplinary E-Teams in the Junior Engineering Clinic II," Co-Principal Investigator, *National Collegiate Inventors and Innovators Alliance/Lemelson Foundation*, Award Amount: $11,000; 1998 – 2000.

39. "A Venture Capital Fund to Promote Rapid Product Development in the Engineering Clinic at Rowan University," Co-Principal Investigator, *National Collegiate Inventors and Innovators Alliance/Lemelson Foundation*, Award Amount: $10,000; 1998 – 2000.

40. "Development of a Software Validation Protocol for the IBM AS400 System," **Principal Investigator**, *Electric Mobility*, Award Amount: **$5,000**; 2000.

41. "Development of Numerical Models for a Maglev System," **Principal Investigator**, *Cooper Grant*, Award Amount: **$2,500**; 2000.

42. "A Data Fusion Imaging System for In-Line NDE of Ferromagnetic Objects," **Principal Investigator**, *Rowan University SBR Grant*, Award Amount **$2,700**; 1997 – 1998.

43. "A Real-Time Computer Vision/Object Recognition System," **Principal Investigator**, *Rowan University Sponsored Creative Research Activity Grant*, Award Amount: **$4,700**; 1998.

PUBLICATIONS

Journal Articles

Manuscripts in Preparation

1. B. Wenger and S. Mandayam, "Segmentation and tracking of anomalous events in shipboard surveillance video using Gaussian mixture models and Kalman filters," in preparation for submission to the *IEEE Transactions on Instrumentation and Measurement*.

2. J. Oagaro and S. Mandayam, "Multi-sensor data fusion using geometric transformations for the nondestructive evaluation of gas transmission pipelines," in preparation for submission to *Nondestructive Testing & Evaluation International*.

Published Journal Articles

1. M. Russell, S. Mandayam and S. Jensen, "The "Intelligent" valve: A diagnostic framework for integrated systems health management of a rocket engine test stand," *IEEE Transactions on Instrumentation and Measurement*, Volume 60, Issue 4, March 2011, Page(s): 1489 – 1497
   Digital Object Identifier: 10.1109/TIM.2010.2101350

2. P. Jansson, R. P. Ramachandran, J. L. Schmalzel and S. Mandayam, "Creating an agile ECE learning environment through engineering clinics," *IEEE Transactions on Education*, Volume: 53, No. 3, August 2010, Page(s): 455 – 462

3. M. Bloom, M. Russell, A. Kustau, S. Mandayam and B. Sukumaran, "Measurement of porosity in granular particle distributions using adaptive thresholding," *IEEE Transactions on Instrumentation and Measurement*, Volume: 59, Issue 5, May 2010, Page(s): 1192 – 1199
   Digital Object Identifier: 10.1109/TIM.2010.2040902

4. P. Giordano Jr., J. Corriveau, M. Bloom, G. D. Lecakes, Jr., S. Mandayam and B. Sukumaran, "Imaging systems and algorithms for the numerical characterization of 3D shapes of granular particles," *IEEE Transactions on Instrumentation and Measurement*, Volume: PP, Issue 99, Dec 2009, Page(s): 1 – 11
   Digital Object Identifier: 10.1109/TIM.2009.2034579

5. G. D. Lecakes, Jr., J. A. Morris, J. L. Schmalzel and S. Mandayam, "Virtual reality environments for integrated systems health management of rocket engine tests," *IEEE Transactions on Instrumentation and Measurement*, Volume 58, Issue 9, Sept. 2009, Page(s):3050 – 3057
   Digital Object Identifier 10.1109/TIM.2009.2016823

6. J. L. Schmalzel, F. Figueroa, J. Morris, S. Mandayam and R. Polikar, "An architecture for intelligent systems based on smart sensors," *IEEE Transactions on Instrumentation and Measurement,* Volume 54, Issue 4, Aug. 2005 Page(s):1612 - 1616
Digital Object Identifier 10.1109/TIM.2005.851477

7. K. Hwang, S. Mandayam, S. S. Udpa, L. Udpa, W. Lord, M. Afzal, "Characterization of gas pipeline inspection signals using wavelet basis function neural networks," *NDT & E International*, Volume 33, Issue 8, Pages 531-545, December 2000.

8. M. Yan, S. Udpa, S. Mandayam, Y. Sun, P. Sacks and W. Lord, "Solution of inverse problems in electromagnetic NDE using finite element methods," *IEEE Transactions on Magnetics,* Volume 34, Issue 5, Part 1, Sept. 1998 Page(s):2924 - 2927
Digital Object Identifier 10.1109/20.717682

9. S. Mandayam, L. Udpa, S. S. Udpa and W. Lord, "Monte Carlo methods for modeling magnetostatic NDE phenomena: a feasibility study*," Magnetics, IEEE Transactions on*, Volume 32, Issue 3, Part 1, May 1996 Page(s):1425 - 1428
Digital Object Identifier 10.1109/20.497515

10. S. Mandayam, L. Udpa, S. S. Udpa and W. Lord, "Invariance transformations for magnetic flux leakage signals," *Magnetics, IEEE Transactions on*, Volume 32, Issue 3, Part 1, May 1996 Page(s):1577 - 1580
Digital Object Identifier 10.1109/20.497553

11. M. Yan, M. Afzal, S. S. Udpa, S. Mandayam, Y. Sun, L. Udpa and P. Sacks, "Iterative algorithms for electromagnetic NDE signal inversion," *Electromagnetic Nondestructive Evaluation (II) - Studies in Applied Electromagnetics and Mechanics*, Vol. 14, pp. 287-296, IOS Press, 1998.

12. S. Mandayam, L. Udpa, S. S. Udpa and W. Lord, "Wavelet based permeability compensation technique for characterizing magnetic flux leakage images," *NDT & E International*, Vol. 30, No. 5, pp. 297-303, 1997.

13. L. Udpa, S. Mandayam, S. Udpa, Y. Sun and W. Lord, "Developments in gas pipeline inspection technology," *Materials Evaluation*, Vol. 54, No. 4, pp. 467-472, April 1996.

14. S. Mandayam, L. Udpa, S. S. Udpa and W. Lord, "Signal processing for in-line inspection of gas transmission pipelines," *Research in Nondestructive Evaluation*, Vol. 8, no. 4, pp. 233-247, 1996.

15. S. Mandayam, L. Udpa and S. S. Udpa, "Parametric models for representing hysteresis curves," *Nondestructive Testing and Evaluation,* Vol. 11, No. 4, pp. 235-245, 1994.

Archival Peer-reviewed Conference Proceedings on IEEE*Xplore*

16. B. Wenger, S. Mandayam, P.J. Violante and K.J. Drake, "Detection of anomalous events in shipboard video using moving object segmentation and tracking," *IEEE AUTOTESTCON Proceedings*, September 2010, Page(s): 1 – 6
Digital Object Identifier: 10.1109/AUTEST.2010.5613544

17. M. Russell, G.D. Lecakes, Jr., S. Mandayam and S. Jensen, "Diagnostic models for sensor measurements in rocket engine tests," *IEEE Sensors Conference Proceedings*, October 2009, Page(s):764 – 769
Digital Object Identifier 10.1109/ICSENS.2009.5398535

18. M. Bloom, M. Russell, A. Kustau, S. Mandayam and B. Sukumaran, "An X-ray computed tomography technique for the measurement of packing density in granular particles,"

Instrumentation and Measurement Technology Conference Proceedings, 2009. I2MTC '09. IEEE, 5-7 May 2009 Page(s):74 – 79
Digital Object Identifier 10.1109/IMTC.2009.5168419

19. M. Russell, G. D. Lecakes and S. Mandayam, "Acquisition, interfacing and analysis of sensor measurements in a VR environment for integrated systems health management in rocket engine tests," *Sensors Applications Symposium Proceedings, 2009. SAS 2009. IEEE*, 17-19 Feb. 2009 Page(s):132 - 136
Digital Object Identifier 10.1109/SAS.2009.4801793

20. G. D. Lecakes, M. Russell and S. Mandayam, "Visualization of multiple sensor measurements in a VR environment for integrated systems health management in rocket engine tests," *Sensors Applications Symposium Proceedings, 2009. SAS 2009. IEEE,* 17-19 Feb. 2009 Page(s):132 - 136
Digital Object Identifier 10.1109/SAS.2009.4801793

21. G. D. Lecakes, J. A. Morris, J. L. Schmalzel and S. Mandayam, "Virtual reality platforms for integrated systems health management in a portable rocket engine test stand," *Instrumentation and Measurement Technology Conference Proceedings, 2008. IMTC 2008. IEEE*, 12-15 May 2008 Page(s):388 - 392
Digital Object Identifier 10.1109/IMTC.2008.4547066

22. J. A. Oagaro, and S. Mandayam, "Multi-sensor data fusion using geometric transformations for gas transmission pipeline inspection," *Instrumentation and Measurement Technology Conference Proceedings, 2008. IMTC 2008. IEEE*, 12-15 May 2008 Page(s):1734 - 1737
Digital Object Identifier 10.1109/IMTC.2008.4547324

23. P. M. Jansson, S. Mandayam and J. L. Schmalzel, "Green power engineering: pedagogy for the next generation of electrical engineers," *Power Engineering Society General Meeting, 2004. IEEE*, 6-10 June 2004 Page(s):65 - 70 Vol.1
Digital Object Identifier 10.1109/PES.2004.1372755

24. D. Parikh, M. T. Kim, J. Oagaro, S. Mandayam and R. Polikar, "Ensemble of classifiers approach for NDT data fusion," *Ultrasonics Symposium, 2004 IEEE*, Volume 2, 23-27 Aug. 2004 Page(s):1062 - 1065 Vol.2
Digital Object Identifier 10.1109/ULTSYM.2004.1417959

25. D. Parikh, M. T. Kim, J. Oagaro, S. Mandayam and R. Polikar, "Combining classifiers for multisensor data fusion," *Systems, Man and Cybernetics, 2004 IEEE International Conference on*, Volume 2, 10-13 Oct. 2004 Page(s):1232 - 1237 vol.2
Digital Object Identifier 10.1109/ICSMC.2004.1399793

26. J. Schmalzel, F. Figueroa, J. Morris, S. Mandayam and R. Polikar, "An architecture for intelligent systems based on smart sensors," *Instrumentation and Measurement Technology Conference, 2004. IMTC 04. Proceedings of the 21st IEEE*, Volume 1, 18-20 May 2004 Page(s):71 - 75 Vol.1
Digital Object Identifier 10.1109/IMTC.2004.1350998

27. S. Papson, J. Oagaro, R. Polikar, J. C.Chen, J. L. Schmalzel and S. Mandayam, "A virtual reality environment for multi-sensor data integration," *Sensors for Industry Conference, 2004. Proceedings the ISA/IEEE* , 2004 Page(s):116 - 122
Digital Object Identifier 10.1109/SFICON.2004.1287142

28. J. Schmalzel, F. Figueroa, J. Morris, W. Solano, S. Mandayam and R. Polikar, "A framework for intelligent rocket test facilities with smart sensor elements," *Sensors for Industry Conference, 2004. Proceedings the ISA/IEEE*, 2004 Page(s):91 - 95

Digital Object Identifier 10.1109/SFICON.2004.1287137

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GRADUATE STUDENTS ADVISED

1. Benjamin Wenger, *Master of Science*, Electrical Engineering, Thesis: *A Framework Based on Gaussian Mixture Models and Kalman Filters for the Segmentation and Tracking of Anomalous Events in Shipboard Video,* December 2010.

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8. Daniel Randall-Barrot, *Master of Science*, Electrical Engineering, Thesis: *An Algebraic Reconstruction Technique (ART) for the Synthesis of Three-Dimensional Models of Particle Aggregates from Projective Representations,* May 2006.

9. Justin Bram, *Master of Science*, Electrical Engineering, Thesis: *A "Divide-and-Conquer" Strategy for NDE Signal Inversion in Gas Transmission Pipelines,* May 2006.

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15. Richard Eckert, *Master of Science*, Electrical Engineering, Thesis: *Spatially Varying Threshold Models for the Automated Segmentation of Radiodense Tissue in Digitized Mammograms,* Dec 2003.

16. Philip J. Kulick, *Master of Science*, Electrical Engineering, Thesis: *Multi-Sensor Data Fusion Using Geometric Transformations For The Nondestructive Evaluation Of Gas Transmission Pipelines,* Dec 2003.

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18. Jeremy T. Neyhart, *Master of Science*, Electrical Engineering, Thesis: *Automated Segmentation of Radiodense Tissue in Digitized Mammograms Using a Constrained Neyman-Pearson Classifier,* May 2002.

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Chair, Educational Activities, *IEEE Instrumentation and Measurement Society*, 2008 – 2009
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Student Activities Chair, *IEEE Region-2* (Eastern United States), 2004 – 2008
IEEE Region-2 Executive Committee, 2004 – 2008
Member, *IEEE Instrumentation and Measurement Society Administrative Committee*, 2007 – 2010
Chair, *IEEE Sensors Applications Symposium, 2008, 2009, 2010, 201, 2012*
Vice- Chair, *IEEE Sensors Applications Symposium, 2007*
Technical Program Chair, *IEEE Sensors Applications Symposium, 2006*
Reviewer for the *IEEE Transactions on Instrumentation & Measurement*
Reviewer for the *IEEE Sensors Journal*
Reviewer for the *IEEE Transactions on Magnetics*
Reviewer for the *International Conference on Electromagnetic NDE*
Session Chair, Midwest Electrotechnology Conference, Ames, IA, 1996
Treasurer, American Society for Nondestructive Testing, Iowa Chapter, 1996 – 1997

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Chair, University Task Force on Systems Engineering, 2009
Chair, ECE Department Graduate Committee, 2002 – 2006
Chair, College of Engineering Planning Committee, 2001 – 2002
Chair, College of Engineering Laboratory Committee, 1998 – 1999
Chair, University Technology Task Force, 2004
Chair, University Networking and Infrastructure Sub-Committee
Assessment Activities Coordinator, ECE Department, 1998 – 2002
IEEE Student Branch faculty advisor, 1997 – 2002
Academic Policies and Procedures Committee member, 1997 –1999
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Senior Director in University Advancement, 2 Positions, 2012
Dean of the College of Engineering, Rowan University, 2010-2011
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Electrical and Computer Engineering Faculty, 1 Position, 2008
Electrical and Computer Engineering Technician (Committee Chair), 1 Position, 2004, 2006
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Electrical and Computer Engineering Faculty, 3 Positions, 2000
Electrical and Computer Engineering Faculty, 2 Positions, 1999
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NSF New Century Scholars Fellowship, Stanford University, August 1999.
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