

DR. KAREN A. PANETTA

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Career Summary:

- Dedicated professional with exceptional research and industrial experience utilizing my computer and electrical engineering background to develop innovative state-of-the-art technologies across various arenas. Research areas include simulation, artificial intelligence, virtual and augmented reality, image and signal processing, digital design, and robot vision.
- A track record as Dean of Graduate Engineering Education of progressive expertise in leadership, problem solving and pioneering cost-effective programs to deliver exceptional learning experiences for students and value to the institution.
- Award winning leader and author promoting women and underrepresented groups of individuals in Science, Technology, Mathematics and Engineering with an unparalleled track record for harnessing technology to benefit humanity across the globe.
- Established leader, technical & policy expert in the IEEE, including President of IEEE-HKN (eta-kappa-nu) and Vice-President for the Systems, Man & Cybernetics Society and IEEE-USA.
- Consulting expert for corporations and new ventures. Evaluating new technologies & design strategies that ensure successful system integration and mitigate risk.

Research Areas

Applications

Technologies

**indicates Dr. Panetta's Intellectual Property*

Image enhancement	<ul style="list-style-type: none">• Biomedical imaging• Safety and security• Recoloring for improved Human Visual perception	<ul style="list-style-type: none">• Visible, thermal, NIR Sensors, IoT• Human Visual System modeling*
Detection and recognition systems	<ul style="list-style-type: none">• Cancer detection and classification• Homeland security• Animal conservation, animal population control	<ul style="list-style-type: none">• Artificial intelligence, machine learning*• Drones, UAV• Image Quality Measures*
Data fusion	<ul style="list-style-type: none">• Navigation and autonomous control.• Homeland security including human trafficking• Human health and nutrition• Annotation and training using Augmented Reality• Tracking medical treatment progress & tools for diagnosis	<ul style="list-style-type: none">• Artificial intelligence, machine learning*• Image Quality Measures*• Human Visual System modeling*
Systems simulation	<ul style="list-style-type: none">• Digital multi-domain fault simulation• Catastrophic modeling	<ul style="list-style-type: none">• Multi-Domain Concurrent Simulation modeling*

Education:

Ph.D. *Northeastern University*, Boston, MA, Electrical Engineering

Minors: Robotics (vision and control) and Information Systems

Thesis Topic: Multiple Domain Concurrent Simulation of Interacting Experiments

M.S. *Northeastern University*, Boston, MA, Electrical Engineering

B.S. *Boston University*, Boston, MA, Computer Engineering

Award Highlights:

Career & Research Awards

- IEEE Fellow.
- Norm Augustine Award from the National Academies of Engineering and Science, American Association of Engineering Societies.
- IEEE Harriet B. Rigas Award for outstanding female Educator.
- IEEE William Sayle Award for achievement in Education.
- NSF CAREER Award.
- Outstanding Contributions to NASA Research.
- NASA Excellence in Research Award.

Social Impact Awards

- President Obama awarded Karen the nation's highest award for Engineering, Science and Mathematics Education and Mentoring.
- Women of Vision Award from the Anita Borg Institute.
- IEEE Ethical Practices Award.
- STEM Advisor to Her Excellency, Joyce Banda, during her Presidency as the leader of Malawi.
- APEX Grand Award, Editor-in-Chief of IEEE Women in Engineering Magazine.

Professional Experience:

Tufts University, Department of Electrical and Computer Engineering, Medford, MA

Dean of Graduate Education for the School of Engineering 2017-Present

Associate Dean for Graduate Education 2013-2017

Full Professor 2009-Present

Associate Professor 2001-2009

Assistant Professor and NASA Langley Research Scientist, JOVE program 1996-2001

Visiting Professor 1994-1995

- Responsible for managing all Graduate programs including, Ph.D., M.S., combined degree programs, certificate programs and post-baccalaureate programs throughout the School of Engineering, including the Tufts Gordon Institute of Engineering Management. In this role, I develop recruitment and retention strategies, while supporting teaching and professional enrichment programs for all 2013-Present

- Graduate Students. Develop corporate relationships to support graduate education and new programs.
- Director of the Panetta Visualization, Sensing & Simulation Research Laboratory at Tufts University. Current research areas include the development of image and signal processing, algorithms for applications in homeland security, biomedical applications. Methods include machine learning for enhancing detection and recognition systems across a variety of application areas. 1995-Present
 - Responsible for instructing computer and electrical engineering. Specific courses taught include: Digital Logic Circuits, Microprocessor Design, Embedded Systems, Robotics, Digital System Simulation and Testability, Analog Electronics, Operating Systems, Computer Architecture, Advanced Computer Architecture, VLSI, Circuit Theory, Computer Animation for Technical Communications. 1994-Present
 - Creator and Founder of “The Nerd Girls”. This program encourages young girls to pursue engineering and science careers and shows all young children that Engineers are cool and very talented. Website: <http://www.nerdgirls.com>. Dr. Panetta and her award-winning team have appeared on the TODAY Show, the Boston Globe, Newsweek Magazine, the IEEE Institute and ASEE Prism Magazine. 2000
 - Co-developer of the interdisciplinary Multimedia and arts minor. This was the first program in the United States that paired liberal arts students with engineers. Secured endowed funds to support the program. 1995-Present
 - Advisor for the Tufts University IEEE and Society of Women Engineers Student Branches. 1994-Present
 - Created the Lincoln Laboratory Seminar Series for the Electrical and Computer Engineering Department (ECE) Graduate Seminar Program. 2010
 - Established the ECE department’s formal relationship with MIT Lincoln Laboratories with MIT Lincoln Labs Director Eric Evans and former Assistant Director Lee Upton. 2010
 - While teaching the ECE Graduate Seminar, all students contributed to an IEEE EBook for teaching engineering concepts to high school students to enhance graduate students’ communication and teaching skills. I also engaged all graduate students in the graduate seminar to become technical reviewers for SPIE Journals. Students created functional specifications for mobile applications for Non-Profit Organizations to help the organizations advance their social and humanitarian missions. 2012
 - Initiated the School of Engineering Internship Program and secured funding for the first full time School of Engineering Internship Coordinator.
 - Developed the first interdisciplinary projects in “Sports Engineering” at Tufts University. 1996
 - Served as a Faculty Advisor for the Robotics Academy at Tufts University and Faculty Advisor for the IEEE Student Chapter, which sponsors the “Junk Yard Wars in Engineering” and the IEEE robotics competition. Developed the “Robot Escape!” and “Virtual Student Pets” design projects for the advanced digital design course within the Electrical and Computer Engineering department. Created the “binary

- in box” decoder project for the NSF funded “4 Schools for Women in Engineering project”.
- Appointed by former Tufts University President Lawrence S. Bacow to be a member of the Tufts University Task Force on Undergraduate Education. This committee of 5 faculty and 2 students was responsible for designing the future of the Tufts University Undergraduate education and proposed the Summer Scholars research program. 1999
- MACOM/Tyco Electronics, Lowell, MA**
- Design Consultant* 2000-2012
- Designed High-Speed 0C48 communications equipment utilizing SiGe and GaAs processes.
 - Participated in critical design reviews for projects involving mixed signal FPGA/microwave systems.
 - Assisted corporate R&D in evaluating outside contractor designs.
 - Served as the resident digital and mixed-signal system design consultant.
 - Designed interfaces to be compliant with IEEE LVDS standards.
- BA Logix, Inc., Medford, MA**
- Chief Research Scientist* 2007-2011
- Responsible for directing all research efforts in developing image and signal processing software and hardware systems for biomedical and security applications.
- General Scanning, Bedford, MA**
- Consultant* 1997-1999
- Project consultant for new embedded processor based thermal printer designs.
 - Evaluated real-time operating systems for new designs.
 - Reviewed project specifications including, electrical, diagnostic, and safety specifications.
- Digital Equipment Corporation, Hudson, MA**
- Principal Software Engineer* 1991-1992
- Developed the modeling, fault simulation and manufacturing test strategy for ALPHA 21064 RISC processor.
 - Performed simulation tools need analysis for Engineering, Manufacturing and Test.
- Fault Simulation Project Leader* 1989-1991
- Directed research and development of fault simulation techniques for the ALPHA 21064 architecture. Responsible for directing a team of 5 engineers.
 - Co-developer of the DECSIM corporate simulator. Tasks included developing concurrent software algorithms for advanced features and technical customer support for the product.

Senior Software Engineer

1987-1989

- Designed and implemented a Min-Max timing verification tool that efficiently removed common source ambiguity due to reconvergent fanout in digital circuits, while providing accurate glitch/spike reporting.

Diagnostic Engineer

1985-1987

- Developed Diagnostic tests for the VAX 8800.
- Wrote Diagnostic Cache Specifications for a Vector and Scalar processor and designed test hardware for a Vector cache.

Gillette Company, Boston, MA

Information Research Analyst

1984-85

- Design and implementation of department automation.
- Evaluated and planned courses and seminars presented within the company.

Publications & Patents:

Patents

1. Karen Panetta, Long Bao, and Sos Agaian, "*Methods and Systems for Human Imperceptible Computerized Color Transfer*", International Application No.: PCT/US2017/050567, filed on 09-2017.
2. Panetta, Karen, Kamath K.M, Shreyas, and Sos S. Agaian. "*Bio- Inspired Multimedia Processing Systems and Methods*" 2017.
3. Panetta, Karen, Kamath K.M, Shreyas, Agaian, Sos S., Henessy Erin, Shonkoff, Eleanor, Economos, Christina "*AI Platform for Food and Nutrient Estimation, Dietary Assessment, Evaluation, Prediction and Management,*" 2018.
4. Panetta, Karen, Wan, Qianwen, Sos S. Agaian, Kaszowska, Aleksandra, Rao, Shishir Paramathma, and Kamath K.M, Shreyas, "*Methods and Systems for Combining both: AI and Eye/Gaze Movement Captured Multisensory Multimedia Data Fusion Concepts for Cognitive Load Assessments to Help Human to Organize, Learn, Interpret and Use This Data*" 2018.
5. Karen Panetta, Sos Agaian, Aruna Ramesh, Rahul Rajendran. "Methods and Apparatus for Dental Disease Detection and Isolation", 2018
6. Karen A. Panetta, Shahan Nercessian, and Sos Agaian, "Methods and Apparatus for Image Processing and Analysis," 2014, patent pending.
7. Karen A. Panetta, Sos Agaian, and Chen Gao, "Systems and Methods for Image and Video Signal Measurement," 2013, patent pending.
8. G. Nagel, J. Jose, N. Matiasz, and K. Panetta, "Electro larynx devices and uses thereof," 2013, patent pending.
9. Karen A. Panetta, Sos Agaian, and Aaron Greenblatt, "Methods and Apparatus for Image Restoration," US8285070, 10-09-2012, 2008.
10. Karen A. Panetta and Sos Agaian, "Methods and Apparatus for Visual Sub-Band Decomposition of Signals," US8285076, 03-27-2008, 2008.
11. Karen A. Panetta and Sos Agaian, "Methods and Apparatus for Using Boolean Derivatives to Process Data," 2007.

12. Ernst G. Ulrich, Karen Panetta, and Michael M. Gustin, "Method for Testing, Debugging, and Comparing Computer Programs Using Concurrent Simulation of Program Paths," US5291497 A, 03-01-1994, 1994.
13. Ernst G. Ulrich and Karen Panetta, "A Method for Multi-Domain and Multi-Dimensional Concurrent Simulation Using a Digital Computer," US5307479 A, 04-26-1994, 1994.

Authored Books, Book Chapters, and Edited Books

1. Karen Panetta and K. Williams, "*Count Girls In: Empowering Girls to Combine Any Interests with STEM to Open Up a World of Opportunity*": Chicago Review Press, 2018.
2. Zhou Yicong, Sos S. Agaian, Karen Panetta, and C. L. Chen, "Nonlinear Unsharp Masking for Enhancing Suspicious Regions in Mammograms," in *Computer-Aided Cancer Detection and Diagnosis: Recent Advances*, ed: SPIE, 2013.
3. Sos Agaian, Karen Panetta, and Shahan Nercessian, "Image Fusion Using a Parameterized Logarithmic Image Processing Framework," in *Image Fusion*, O. Ukimura, ed: InTech, 2011, pp. 139-165.
4. Yicong Zhou, Karen A. Panetta, and Sos S. Agaian, *Multimedia Encryption Using Recursive Sequences*: VDM Verlag Dr. Müller, 2008.
5. Contributor to the book Parag K. Lala, *Principles of modern digital design*. Hoboken, N.J: Wiley-Interscience, 2007.
6. Contributor to the book Borivoje Furht, *Handbook of multimedia computing*. Boca Raton, Fla: CRC Press LLC, 1999.
7. Ernst G. Ulrich, Vishwani D. Agrawal, Jack H Arabian, and Karen Panetta (Contributor), *Concurrent and comparative discrete event simulation*. Boston; Dordrecht; London: Kluwer academic publ., 1994.
8. Contributor to the book, *Handbook of Communications*, CRC Press.
9. Karen Panetta, and others, *Four Schools for Women in Engineering*, National Science Foundation, "How to Grow a STEM Team", Co-author of this 417 page book.

Journals

1. K. Panetta, L. Bao, and S. Agaian, "A New Unified Impulse Noise Removal Algorithm "Using a new Reference Sequence-to-Sequence Similarity Detector," *IEEE Access*, vol. 6, pp. 37225-37236, 2018.
2. K. Panetta ; Q. Wan ; S. Agaian ; S. Rajeev ; S. Kamath ; R. Rajendran ;S. Rao ; A. Kaszowska ; H. Taylor ; A. Samani ; X. Yuan, "A comprehensive database for benchmarking imaging systems," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2018.
3. Rahul Rajendran, Kevan Iffrig, Deepak Pruthi, Allison Wheeler, Brian Neuman, Dharam Kaushik, Ahmed Mansour, Karen Panetta, Sos S. Agaian and Michael Liss. "Initial Evaluation of Computer Assisted Radiologic Assessment for Renal Mass Edge Detection as an Indication of Tumor Roughness to Predict Renal Cancer Subtypes," In *Advances in Urology* 2019.
4. Karen Panetta, Long Bao, Sos Agaian, Victor Oludare, "A Color Theme-based Aesthetic Enhancement Algorithm to Emulate the Human Perception of Beauty in Photographs," accepted to *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)* accepted 2019.
5. Karen Panetta, Long Bao, Sos Agaian, "Fast Hue-division-based Selective Color Transfer." Accepted with revisions to *IEEE Transactions on Circuits and Systems for Video Technology* 2019.
6. K. Panetta, A. Samani, and S. Agaian, "A Robust No-Reference, No-Parameter, Transform Domain Image Quality Metric for Evaluating the Quality of Color Images," *IEEE Access*, vol. 6, pp. 10979-10985, 2018.

7. K. Panetta, L. Bao, and S. Agaian, "A human visual "no-reference" image quality measure," *IEEE Instrumentation & Measurement Magazine*, vol. 19, pp. 34-38, 2016.
8. K. Panetta, L. Bao, and S. Agaian, "Novel multi-color transfer algorithms and quality measure," *IEEE Transactions on Consumer Electronics*, vol. 62, pp. 292-300, 2016.
9. K. Panetta, C. Gao, S. Agaian, and S. Nercessian, "A New Reference-Based Edge Map Quality Measure," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. PP, pp. 1-13, 2016.
10. K. Panetta, L. Bao, and S. Agaian, "Sequence-to-Sequence Similarity-Based Filter for Image Denoising," *IEEE Sensors Journal*, vol. PP, pp. 1-1, 2016.
11. K. Panetta, C. Gao, and S. Agaian, "Human-Visual-System-Inspired Underwater Image Quality Measures," *Oceanic Engineering, IEEE Journal of*, vol. PP, pp. 1-11, 2015.
12. Karen Panetta, Sos Agaian, Jean-Charles Pinoli, and Yicong Zhou, "Image Processing Algorithms and Measures for the Analysis of Biomedical Imaging Systems Applications", *International Journal of Biomedical Imaging*, vol. 2015, p. 1, 2015.
13. K. Panetta, A. Samani, and S. Agaian, "Choosing the optimal spatial domain measure of enhancement for mammogram images," *Int J Biomed Imaging*, vol. 2014, p. 937849, 2014.
14. Karen Panetta, Gao Chen, Agaian Sos, and Shahan Nercessian, "Nonreference Medical Image Edge Map Measure," *International Journal of Biomedical Imaging*, 2014.
15. Zhou Yicong, K. Panetta, S. Agaian, and C. L. P. Chen, "(n, k, p)-Gray code for image systems," *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on*, vol. 43, pp. 515-529, 2013.
16. K. Panetta, Gao Chen, and S. Agaian, "No reference color image contrast and quality measures," *Consumer Electronics, IEEE Transactions on*, vol. 59, pp. 643-651, 2013.
17. S. C. Nercessian, K. A. Panetta, and S. S. Agaian, "Non-Linear Direct Multi-Scale Image Enhancement Based on the Luminance and Contrast Masking Characteristics of the Human Visual System," *IEEE Transactions on Image Processing*, vol. 22, pp. 3549-3561, Sep 2013.
18. Yicong Zhou, Karen Panetta, Sos Agaian, and CL Chen, "Image encryption using P-Fibonacci transform and decomposition," *Optics Communications*, vol. 285, pp. 594-608, March 2012.
19. Jean-Charles Pinoli, Karen Panetta, and Seiji Hata, "Special Section Guest Editorial: Quality Control by Artificial Vision," *Journal of Electronic Imaging*, vol. 21, pp. 021101-1-021101-1, 2012.
20. Karen Panetta, Junjun Xia, and Sos Agaian, "Color image enhancement based on the discrete cosine transform coefficient histogram," *Journal of Electronic Imaging*, vol. 21, pp. 021117-1-021117-10, 2012.
21. Shahan C. Nercessian, Karen A. Panetta, and Sos S. Agaian, "Multiscale image fusion using an adaptive similarity-based sensor weighting scheme and human visual system-inspired contrast measure," *Journal of Electronic Imaging*, vol. 21, pp. 021112-1-021112-13, 2012.
22. Shahan C. Nercessian, Karen Panetta, and Sos Agaian, "Fusing images for contextual enhancement," *Electronic Imaging & Signal Processing*, August 2012.
23. Karen A. Panetta, Sos S. Agaian, Shahan C. Nercessian, and Ali A. Almunstashri, "Shape-dependent canny edge detector," *Opt. Eng. 50(8), 087008*, vol. 50, pp. 087008-1-12, 2011.
24. K. Panetta, Zhou Yicong, S. Agaian, and Jia Hongwei, "Nonlinear Unsharp Masking for Mammogram Enhancement," *Information Technology in Biomedicine, IEEE Transactions on*, vol. 15, pp. 918-928, 2011.
25. K. Panetta, S. Agaian, Zhou Yicong, and E. J. Wharton, "Parameterized Logarithmic Framework for Image Enhancement," *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on*, vol. 41, pp. 460-473, 2011.
26. Shahan C. Nercessian, Karen A. Panetta, and Sos S. Agaian, "Multiresolution Decomposition Schemes Using the Parameterized Logarithmic Image Processing Model with Application to Image Fusion," *EURASIP Journal on Advances in Signal Processing*, vol. 2011, pp. 1-17, 11 October 2010.

27. S. S. Agaian, K. A. Panetta, S. C. Nercessian, and E. E. Danahy, "Boolean derivatives with application to edge detection for imaging systems," *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on*, vol. 40, pp. 371-82, Apr 2010.
28. Karen A. Panetta, Eric J. Wharton, and Sos S. Agaian, "Logarithmic edge detection with applications," *Journal of Computers*, vol. 3, pp. 11-19, 11-19, Sep 2008.
29. K. A. Panetta, E. J. Wharton, and S. S. Agaian, "Human visual system-based image enhancement and logarithmic contrast measure," *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on*, vol. 38, pp. 174-88, Feb. 2008.
30. S. S. Agaian, E. E. Danahy, and K. A. Panetta, "Logical System Representation of Images and Removal of Impulse Noise," *Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions on*, vol. 38, pp. 1349-1362, Nov. 2008.
31. S. S. Agaian, B. Silver, and K. A. Panetta, "Transform coefficient histogram-based image enhancement algorithms using contrast entropy," *IEEE Trans Image Process*, vol. 16, pp. 741-58, March 2007.
32. Karen Panetta, Charles Dornbush, and Catherine Loomis, "A Collaborative Learning Methodology for Enhanced Comprehension using TEAMThink®," *Journal of Engineering Education*, vol. 91, pp. 223-229, 2014-05-10 2002.
33. K Panetta, "Industrial/university liaison," *Electronic Design*, vol. 49, pp. 54-54, Sept. 17 2001.
34. S. S. Agaian, K. Panetta, and A. M. Grigoryan, "Transform-based image enhancement algorithms with performance measure," *IEEE Transactions on Image Processing*, vol. 10, pp. 367-382, Mar 2001.
35. K. Panetta, J. Heller, and P. L. Montessoro, "System verification using multilevel concurrent simulation," *Micro, IEEE*, vol. 19, pp. 60-67, 1999.
36. Karen Panetta, EliasS Manolakos, Edward Czeck, and Jamie Heller, "Multiple Experiment Environments for Testing," *Journal of Electronic Testing*, vol. 11, pp. 247-262, 1997/12/01 1997.
37. K. Panetta, "Multimedia on Campus: New Multimedia Lab at Tufts University," *Professional Journal of the Special interest Group on CD Applications and Technology (SIGCAT)*, vol. 10, 1996.
38. K. Assiter, K. Panetta, A. Couch, and C. Currey, "Locating Anomalies in Large Data Sets," *Society for Computer Simulation Military, Government and Aerospace Simulation*, vol. 30, pp. 218-223, April 5, 1998.
39. Ernst Ulrich, Karen Panetta, Jack Arabian, Michael Gustin, Vishwani D. Agrawal, and Pier Luca Montessoro, "Comparative and concurrent simulation of discrete-event experiments," *Journal of Electronic Testing: Theory and Applications (JETTA)*, vol. 3, pp. 107-118, 2011-11-11 1992.
40. S. Demba, E. Ulrich, K. Panetta, and D. Giramma, "Experiences with concurrent fault simulation of diagnostic programs," *Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on*, vol. 9, pp. 621-628, 1990.

Conferences

1. Shreyas Kamath, Rahul Rajendran, Wan, Qianwen, Karen Panetta, and Sos Agaian, "TERNet: A deep learning approach for thermal face emotion recognition", SPIE 2019.
2. Rajeev, Sriji, Kamath KM Shreyas, Wan, Qianwen, Karen Panetta, and Sos Agaian." *Illumination invariant NIR face recognition using directional visibility*" Electronic Imaging 2019 (Accepted)
3. Rahul Rajendran, Karen Panetta, Sos Agaian, "A Pixel-Based Color Transfer System to Recolor Nighttime Imagery," In SPIE Commercial & Scientific Sensing and Imaging (2019)
4. Shishir Paramathma Rao, Qianwen Wan, Karen Panetta, et al. "Vision based pointing error estimation for mobile eye-tracking system" In SPIE Commercial+ Scientific Sensing and Imaging (2019) (Accepted)

5. Rajeev, Sriji, Samani, Arash, Karen Panetta, and Sos Agaian. "3D Navigational Insight using AR Technology" In Technologies for Homeland Security (HST), 2019 IEEE International Symposium (submitted).
6. Wan, Qianwen, Sriji Rajeev, Aleksandra Kaszowska, Karen Panetta, Holly A. Taylor, and Sos Agaian. "Augmented-reality based vision-aid indoor navigation system in GPS denied environment", In Mobile Multimedia/Image Processing, Security, and Applications 2019, International Society for Optics and Photonics, (Submitted)
7. Panetta, K., Rajeev, S., Kamath K.M, S., Agaian, S., "Unrolling post-mortem 3D fingerprints using mosaicking pressure simulation technique", submitted IEEE Access 2019.
8. Wan, Qianwen, Shishir Paramathma Rao, Aleksandra Kaszowska, V. Voronin, Karen Panetta, Holly A. Taylor, and Sos Agaian. "Face description using anisotropic gradient: thermal infrared to visible face recognition." In *Mobile Multimedia/Image Processing, Security, and Applications 2018*, vol. 10668, p. 106680V. International Society for Optics and Photonics, 2018.
9. Wan, Qianwen, Sriji Rajeev, Aleksandra Kaszowska, Karen Panetta, Holly A. Taylor, and Sos Agaian. "Fixation oriented object segmentation using mobile eye tracker." In *Mobile Multimedia/Image Processing, Security, and Applications 2018*, vol. 10668, p. 106680D. International Society for Optics and Photonics, 2018.
10. Rajeev, Sriji, Karen Panetta, and Sos S. Agaian. "No-reference color-depth quality measure: CDME." In *Mobile Multimedia/Image Processing, Security, and Applications 2018*, vol. 10668, p. 106680L. International Society for Optics and Photonics, 2018.
11. Shreyas Kamath, Karen Panetta, and Sos Agaian. "Multi-view near-Infrared Image mosaicking for face detection in smart cities." In *Mobile Multimedia/Image Processing, Security, and Applications 2018*, vol. 10668, p. 106680N. International Society for Optics and Photonics, 2018.
12. L. Bao, K. Panetta, and S. Agaian, "Hill climbing-based histogram equalization for camouflage object detection," in *SPIE Commercial + Scientific Sensing and Imaging*, vol. 10668, Orlando, Florida, United States, 2018, p. 12.
13. A. Samani, K. Panetta, S. Agaian, Q. Wan, "Automatic Frame-Cut Detection for Self-Diagnostics of Video Surveillance Systems", IEEE International Symposium on Technologies for Homeland Security, 2018.
14. Q. Wan, A. Samani, A. Kaszowskab, K. Panetta, S. Agaian, H. Taylor, "Aerial Border Surveillance for Search and Rescue Missions Using Eye Tracking Techniques", IEEE International Symposium on Technologies for Homeland Security, 2018.
15. Long Bao, Karen Panetta, and Sos Agaian, "Single Image based Random-value Impulse Noise Level Estimation Algorithm," *Science and Information Conference*. Springer, Cham, 2018.
16. Q. Wan, K. Panetta, and S. Agaian, "A video forensic technique for detecting frame integrity using human visual system-inspired measure," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-6.
17. Shreyas Kamath, S. Rajeev, K. Panetta, and S. S. Agaian, "Fingerprint authentication using geometric features," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-7.
18. Shreyas Kamath K. M, Sriji Rajeev, Karen Panetta, and Sos S. Agaian, "Comparative study of palm print authentication system using geometric features," presented at the Proc. SPIE, 2017.
19. A. Samani, K. Panetta, and S. Agaian, "No-reference quality metrics for satellite weather images and sky images," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-6.
20. S. P. Rao, R. Rajendran, K. Panetta, and S. S. Agaian, "Combined transform and spatial domain based "no reference" measure for underwater images," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-7.

21. Shishir Paramathma Rao, Karen Panetta, and Sos S. Agaian, "A novel method for rotation invariant palm print image stitching," presented at the Proc. SPIE, 2017.
22. R. Rajendran, S. P. Rao, K. Panetta, and S. S. Agaian, "Adaptive Alpha-Trimmed Correlation based underwater image stitching," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-7.
23. S. Rajeev, K. K. M. Shreyas, K. Panetta, and S. Agaian, "3-D palmprint modeling for biometric verification," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-6.
24. Srijith Rajeev, Shreyas Kamath K. M., Karen Panetta, and Sos S. Agaian, "Forensic print extraction using 3D technology and its processing," presented at the Proc.SPIE, 2017.
25. Karen Panetta Sos Agaian Qianwen Wan, "Autonomous facial recognition system inspired by human visual system based logarithmical image visualization technique," presented at the Proc. SPIE, 2017.
26. Shreyas Kamath K. M, Rahul Rajendran, Karen Panetta, and Sos Agaian, "A human visual based binarization technique for histological images," presented at the Proc.SPIE, 2017.
27. O. Erat, K. Panetta, and S. Agaian, "Contrast enhancement for underwater images in maritime border protection," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-5.
28. C. Corrado and K. Panetta, "Data fusion and unmanned aerial vehicles (UAVs) for first responders," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-6.
29. L. Bao, K. Panetta, and S. Agaian, "Fast color transfer for camouflage applications," in *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, 2017, pp. 1-5.
30. S. Agaian, P. Rad, R. Rajendran, and K. Panetta, "A Novel Technique to Enhance Low Resolution CT and Magnetic Resonance Images in Cloud," in *2016 IEEE International Conference on Smart Cloud (SmartCloud)*, 2016, pp. 73-78.
31. Rajendran, R., Rao, S. P., Agaian, S. S., & Panetta, K., "A versatile edge preserving image enhancement approach for medical images using guided filter". In Systems, Man, and Cybernetics (SMC), 2016 IEEE International Conference on, October 2016, pp. 002341-002346.
32. A. Samani, K. Panetta, and S. Agaian, "Contrast enhancement for color images using discrete cosine transform coefficient scaling," in *2016 IEEE Symposium on Technologies for Homeland Security (HST)*, 2016, pp. 1-6.
33. Q. Wan and K. Panetta, "A facial recognition system for matching computerized composite sketches to facial photos using human visual system algorithms," in *2016 IEEE Symposium on Technologies for Homeland Security (HST)*, 2016, pp. 1-6.
34. L. Bao, K. Panetta, and S. Agaian, "A new color transfer quality measure," in *Mobile Multimedia/Image Processing, Security, and Applications 2016*, Baltimore, Maryland, United States, 2016, pp. 986904-986904-7.
35. C. Gao, K. Panetta, and S. Agaian, "Coefficients training methods for image and video quality measures," in *Imaging Systems and Techniques (IST), 2015 IEEE International Conference on*, 2015, pp. 1-6.
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6. K. Panetta. (2015) Dressing an open wound [Letter from the Editor]. *Women in Engineering Magazine, IEEE*. 2-3. Available: <http://ieeexplore.ieee.org/ielx7/4509581/7322334/07322339.pdf?tp=&arnumber=7322339&isnumber=7322334>
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9. K. Panetta. (2014) Getting Comfortable Being Uncomfortable [Point of View]. *Proceedings of the IEEE*. 411-413. Available: <http://ieeexplore.ieee.org/ielx7/5/6777968/06777980.pdf?tp=&arnumber=6777980&isnumber=6777968>
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 24. K. Panetta. (2009) Two Degrees of Separation from Einstein, The Good, the Bad, & the Ugly: Engineering FACTS. *Women in Engineering Magazine, IEEE*. 8-12. Available: <http://ieeexplore.ieee.org/ielx5/4509581/5173133/05173139.pdf?tp=&arnumber=5173139&isnumber=5173133>
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Newspapers

1. K. Panetta, "Peanut Butter and Jelly," in *Edtech Digest*, ed: Edtech Digest, 2016.
2. K. Panetta, "Old People," in *The Digital Reflector* vol. LXIV, ed. Boston: IEEE, 2016, pp. 4-5.
3. K. Panetta, "Science Fiction," in *IEEE Reflector Newspaper*, ed. Boston: IEEE, 2015.
4. K. Panetta, "Are Those Real?," in *IEEE Reflector Newspaper* vol. LXIII, ed. Boston: IEEE, 2015, p. 1.
5. K. Panetta, "Happy Valentines Day!," in *IEEE Reflector Newspaper* vol. LXIII, ed. Boston: IEEE, 2015, p. 1.
6. Panetta K, "How Did I Get Here?," in *The IEEE Reflector Newspaper* vol. LXII, ed. Boston: IEEE, 2014.
7. Panetta K, "Reverse Bias," in *The IEEE Reflector Newspaper* vol. LXII, ed. Boston: IEEE, 2014.
8. K. Panetta, "Who Wants To Be An Engineer," in *The IEEE Reflector Newspaper* vol. LXII, ed. Boston: IEEE, 2013.
9. K. Panetta, "Revisiting the Columbia Space Shuttle Disaster, 10 Years Later," in *The IEEE Reflector Newspaper* vol. LXI, ed. Boston: IEEE, 2013.
10. Panetta K, "The Back of the Envelope," in *The IEEE Reflector Newspaper* vol. LXI, ed. Boston: IEEE, 2012.
11. Panetta K, "What a Dump," in *The IEEE Reflector Newspaper* vol. LXI, ed. Boston: IEEE, 2012.
12. K. Panetta, "Friends with Benefits?," in *The IEEE Reflector Newspaper* vol. LIX, ed. Boston: IEEE, 2011.
13. K. Panetta, "Well Rounded Engineers are the New Black," in *The IEEE Reflector Newspaper* vol. LX, ed. Boston: IEEE, 2011.
14. K. Panetta, "Come Celebrate with us," in *The IEEE Reflector Newspaper* vol. LX, ed. Boston: IEEE, 2011.
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16. K. Panetta, "Ethically Speaking," in *The IEEE Reflector Newspaper* vol. LVIII, ed. Boston: IEEE, 2010.
17. K. Panetta, "How to Work for A Jerk," in *The IEEE Reflector Newspaper* vol. LIX, ed. Boston: IEEE, 2010.
18. Panetta K, "Reverse Bias," in *The IEEE Reflector Newspaper* vol. LVIII, ed. Boston: IEEE, 2010.
19. Panetta K, "Media Madness," in *The IEEE Reflector Newspaper* vol. LVII, ed. Boston: IEEE,

- 2009.
20. Panetta K, "Facing Facebook!," in *The IEEE Reflector Newspaper* vol. LVII, ed. Boston: IEEE, 2009.
21. Panetta K, "Two Degrees of Separation from Einstein," in *The IEEE Reflector Newspaper* vol. LVII, ed. Boston: IEEE, 2009.
22. K. Panetta, "Technology Rules," in *The IEEE Reflector Newspaper* vol. LVII, ed. Boston: IEEE, 2008.

Poster Presentations

1. Karen Panetta, "Novel Methods to Measure, Score and Rank the Quality of Biomedical Images", Massachusetts Life Sciences Innovation Data, Boston, MA, June 3, 2014.

Podcasts

1. K. Panetta and Ellen Ochoa, "Tell me More: Women in Space," May 1, 2019.
<https://soundcloud.com/user-491829505>
2. K. Panetta and Ken Briodagh, IoT Time, "Saving the World with IoT", S3, Episode 19 IEEE Part 1. IoT Evolution World, June 13, 2018.
<https://www.stitcher.com/podcast/ken-briodagh/iot-time>
3. K. Panetta and Lauren Hasson, DevelopHer show, <https://developer.com/the-developer-episode-8/>
4. K. Panetta and Peggy Smedley, The Peggy Smedley Show, Episode 563, Segment 2-Data and Skills, May 15, 2018.
5. K. Panetta, "How Computer Science Education Leads Tech Industry," in *WSJ Tech News Briefing*, K. Panetta, Ed., ed: Wall Street Journal, 2016.
6. K. Panetta, "The Value of Teaching", in Wharton Business Radio with host Dan Loney, Sirius XM Radio, Dec 01, 2016.
7. K. Panetta, "Gender bias in the STEM industry" in Wharton Business Radio with host Dan Loney, Sirius XM Radio, April 12, 2016.

Videos and Multimedia

1. IEEE, "IEEE Asks an Engineer with Karen Panetta," IEEE, Ed., ed: IEEE, 2014, p. 2:52.
2. IEEE WIE, "IEEE Women in Engineering Live Chat with Dr. Karen Panetta," ed, 2013, p. 1:00:23.
3. Anita Borg Institute, "Karen Panetta Video Bio: 2011 Anita Borg Institute Women of Vision Award for Social Impact," ed: Anita Borg Institute, 2011, p. 4:14.
4. Anita Borg Institute, "Karen Panetta Acceptance Speech: 2011 Anita Borg Institute Women of Vision Award for Social Impact," ed: Anita Borg Institute, 2011, p. 7:12.
5. IEEE.TV, "Ship the Chip: Real World Engineering," ed: IEEE.TV, 2010, p. 7:18.
6. Paola DiFlorio and Karen Johnson, "Meet the Nerd Girls," ed: IEEE.TV, 2010, p. 8:48.
7. Conferenza Women & Technologies, "Intervento a distanza di Karen Panetta," ed: Conferenza Women & Technologies, 2009, p. 7:04.
8. Four Schools for Women in Engineering, National Science Foundation, "STEM team Partnerships", Video.

Publicity:

1. T. Williamns, "Women Total 48.5% of Carnegie Mellon's 2016 Computer Science Class," in *GoodCall*, ed: GoodCall, 2016.

2. J. Sahadi, "Now hiring: Women with these degrees," in *CNN Money*, ed: CNN Money, 2016.
3. Patrick Thibodeau, "H-1B reform bill bolstered by testimony about male visa-holders", *Computer World*, March 19, 2016.
4. Yennie Jun, "Nerd Girls Encourages Women in STEM," ed. Medford, MA: Tufts Daily News, 2014, p. 3.
5. "IEEE Facebook Ask Me Anything, Featuring Karen Panetta," ed: IEEE Facebook, 2014.
6. Marisa Cohen, "Nerd Girls Rule," ed: *Women's Day Magazine*, 2013.
7. "Karen Panetta: Engineering for Good," 5 ed. Medford: Jumbo: Tufts Admission Magazine, 2013, pp. 18-20.
8. "Ethical Honor: Panetta wins Distinguished Ethical Practices Award [Amperes: Current Affairs from Around the World]," in *Women in Engineering Magazine, IEEE* vol. 7, ed, 2013, pp. 31-31.
9. "IEEE WIE Congratulates IEEE Women in Engineering Magazine Editor-In-Cheif Dr. Karen Panetta: On Receiving the U.S. Presidential Award for Engineering and Science Education and Mentoring," in *Women in Engineering Magazine, IEEE* vol. 6, ed, 2012, pp. 7-7.
10. "USTREAM Live community chat with Karen Panetta!," ed, 2013.
11. "Anne E. Borghesani Community Foundation Inc. Annual Newsletter," November 2012 2012.
12. (2012, April 3, 2012) Why aren't there more women in science and math careers? *The Daily Circuit*. Available: <http://minnesota.public.org/display/web/2012/04/03/daily-circuit-girls-science-careers/>
13. Dorothy Berlandi. (2012, May/June 2012) 29th Law and Justice Day Breakfast. *Sons of Italy News*.
14. Emily Kaiser. (2012, Aug 7, 2012) Improving Science Education In America. *MPR News*. Available: <http://www.mprnews.org/story/2012/08/07/daily-circuit-science-education-teachers>
15. (2012, Spring 2012) ENG Alum Receives Presidential Award for Mentoring Excellence. *ENGINEER: Boston University College of Engineering*. 22.
16. Bill Hess, "Nerd Girls' Cites Importance of Women in Engineering," in *The Herald*, ed: The Herald, 2012.
17. Nancy Friedrich. (2012, Jan. 2012) Inside Track with Dr. Karen Panetta. *Microwaves and RF*. 32-34. Available: <http://mwrf.com/interviews/interview-dr-karen-panetta-professor-tufts-university>
18. "Women and IT," in *BBC Radio*, ed: BBC, 2011.
19. Margo Mallar. (2011, Winter 2010/Spring 2011) Real-world Apps in School Help EEs find Jobs. *Diversity/Careers in Engineering and Information Technology*. 64-68. Available: http://www.diversitycareers.com/articles/college/10-winspr/jm_ees.htm
20. Anna Bogdanowicz. (2010, March 2010) Looking at the Gender Gap. *The Institute: IEEE*.
21. Hanorah Vanni, "Engineering prof. lauded for advancing women in science," in *Tufts' Daily* vol. LXI, ed. Medford, MA: Tufts University, 2011.
22. (2009, February 1, 2009) Women Making Strides in Science, Engineering. *Motion System Design*.
23. Liz Callanan. (2009, Nov. 2009) A Winning Collaboration Between Academia and Industry. *MathWorks*. 18-21. Available: http://www.mathworks.com/tagteam/60356_91785v00_NN09_StudentCompetitions.pdf
24. Julia C. Keller. (2009, Summer 2009) Technological Edge. *Tufts' Alma Matters*. 23-24. Available: <http://gradstudy.tufts.edu/documents/alumniMattersSummer2009TechnologicalEdge.pdf>
25. (2008, Sept. 2008) Women and Science: How to Achieve the Right Balance. *The Independent*.
26. Jenny Block. (2008) Nerd Girls. *ELLE girl Magazine*.
27. Susan LaHoud, "Women Engineers Inspire Young People at Attleboro Museum Forum," in *The Sun Chronicle*, ed, 2008.
28. Joan Goodchild, "Tufts' Nerd Girls' Engineering Program Hits Reality TV," in *Boston Business Journal*, ed, 2007.

29. Jason Simpson, "Thatcher's Twin Towers Shine Again," in *Gloucester Daily Times*, ed, 2006.
30. "The Nerd Girls Team Hits the Islands!," in *Tufts Department of Electrical and Computer Engineering Newsletter*, ed, 2006.
31. Margaret Loftus. (2005, Oct. 2005) Circle of Support. *ASEE Prism*. 40-43. Available: http://www.prism-magazine.org/oct05/tt_01.cfm
32. "Revenge of the Girls," in *LOCAL*, ed, 2002.
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34. Sarah Butrymowicz, "Tufts' Nerd Girls get \$10,000 from Verizon plan to use it for outreach," in *The Tufts Daily*, ed, 2007.
35. Upfront. (2003, Spring 2003) Nerd Girls. *TUFTS Magazine*. 6-7. Available: <http://www.tufts.edu/alumni/magazine/spring2003/departments/upfront.html>
36. Taylor Anne, "Get 'em When They're Young," in *Mass High Tech*, ed, 2003, p. 17.
37. Marjorie Howard. (2006, July 2006) Nerd Girls Bring Solar Power to Thatcher Island. *Tufts Journal*. Available: http://tuftsjournal.tufts.edu/archive/2006/september/briefs/aglow_again.shtml
38. Jessamyn Lockhart, "Working Girls," in *The Observer*, ed, 2003.
39. Spencer Baselice. Thatcher Island Power is On.
40. Helen Horwitz. (2002, Sept 2002) Tufts University Project Seeks to Attract More Women to Engineering. *The IEEE Institute*.
41. Jenna Russel, "Science of Snaring," in *The Boston Sunday Globe*, ed, 2002.
42. Patricia Resende. Nerds Getting Ready to Rev Up Solar Engine. *Mass High Tech*. Available: <http://www.bizjournals.com/boston/blog/mass-high-tech/2002/09/nerds-getting-ready-to-rev-up-solar-engine.html?page=all>

Memberships:

- Institute of Electrical and Electronics Engineers (IEEE) (Fellow Member)
 - IEEE Systems, Man, and Cybernetics Society Membership
 - IEEE Computer Society Membership
 - IEEE Signal Processing Society Membership
 - IEEE Oceanic Engineering Society
 - IEEE Educational Society Membership
 - IEEE Women in Engineering Membership
 - IEEE Robotics and Automation Society Membership
 - IEEE Product Safety Engineering Society
- Society of Women Engineers (SWE) (Life Member)
- SPIE International Society for optics and photonics (Life Member)
- Association for Computing Machinery (ACM)
 - SIGGRAPH Membership
- American Association for the Advancement of Science (AAAS)
- American Society for Engineering Education (ASEE)
- Order of Sons of Italy (OSIA)
- Society for Modeling & Simulation International (SCS) (Senior Member)
- Society of Hispanic Professional Engineers (SHPE)
- Association for Women in Science (AWIS)
- Eta Kappa Nu Engineering Honor Society, member
- Tau Beta Pi Honor Society, member
- Order of the Engineer
- Massachusetts Clean Cities, member

- Test Technology Technical Committee (TTTC), member

Grants:

Award Date * currently active	Agency	Amount
2018*	U.S. ARMY	\$331,271.00
2018*	MITRE Corporation	\$48,000.00
2017*	U.S. ARMY	\$186,508.00
2017*	MITRE Corporation	\$48,000.00
2017	Computing Research Association (CRA) Undergraduate Student support	\$6,000.00
2016*	National Science Foundation, PI, FAST-TRAC Engineering, Co-Pis Dr. Tom Vandervelde, Dr. Valencia Koomson, Dr. Darryl Williams and Dr. Sinai Nathanson	\$1,000,000.00
2014*	National Science Foundation, Developing Female Leaders in STEM, Co-Pi with Dr. Tom Vandervelde and Dr. Sinaia Nathanson	\$600,000.00
2010	MIT Lincoln Laboratory: Image Enhancement Algorithms for Program 1857	\$10,000.00
2007-2004	National Science Foundation, "A Unified Simulation and Fault Modeling Environment for Mixed Signal Systems Including MEMS Components". PI	\$560,814.00
1999-Present*	Endowed Gomez Multimedia and Visualization Grant	\$377,334.00
2008	Textron Inc.	\$20,000.00
2008	The Mathworks Inc.	\$20,000.00
2008	Verizon Foundation	\$10,000.00
2008	INTEL Corporation	\$5,000.00

2007	Allied Minds Inc. Research Grant, "Boolean Function Derivatives for Edge Detection and Compression in Digital Images", PI, \$700,000: \$600,000 plus \$100,000 supplement in 2008	\$700,000.00
2007	Tycoelectronics Inc.	\$5,000.00
2006	Altera	\$4,480.00
2006	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
2005	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
2004	National Science Foundation, "Four Schools for Women in Engineering," Senior Staff	\$24,000.00
2004	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
2003	Nerd Girls: Breaking the Stigmas and Stereotypes of Women in Engineering and Science, Massachusetts Technology Collaborative	\$35,000.00
2002	Nerd Girls: Breaking the Stigmas and Stereotypes of Women in Engineering and Science, Tyco Electronics Inc.	\$25,000.00
2000	Intellectual Partnership for simulating the ALPHA 21064 RISC Architecture, National Science Foundation Industrial Matching with Compaq Computer	\$25,000.00
2000	Teradyne Inc., Support for Simulation Laboratory, Co-PI with Dr. Denis Fermental	\$26,000.00
2000	National Semi-Conductor, Support for Electronics Laboratory	\$100,000.00
2000	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
2000	National Science Foundation, Travel Grant	\$10,000.00
1999	National Science Foundation Intranet-II, Wilson Dilloway, Ioannis Miaoulis	\$500,000.00
1999	Selmer/ Steinway Networked Database, Co-PI with Dr. Alva Couch	\$24,000.00
1999	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
1999	National Science Foundation Equipment Grant, PI	\$20,000.00
1999	National Semi-Conductor, PI	\$10,000.00
1999	Mellon Research Grant, Tufts University - Research Leave	\$0.00
1998	National Science Foundation Research Experiences for Undergraduates, PI	\$10,000.00
1998	National Science Foundation Computing Research Association student support grant, PI	\$10,000.00
1998	Microtouch Corporation, Equipment grant, touch screen monitor, PI	\$2,885.00
1998	General Scanning Inc., Equipment grant, thermal printer, PI	\$2,300.00
1997	National Science Foundation, CAREER Award. "Robust Behavioral Fault Simulation Algorithms for Multilevel Simulation". MIP-9733584 PI	\$272,766.00

1997	Viacom Multimedia grant, Co-PI, with Dr. Alva Couch and Dr. Ioannis Miaoulis	\$475,000.00
1997	Selmer/ Steinway proposal for multimedia, Co-PI with Dr. Alva Couch	\$11,000.00
1997	Digital/INTEL equipment grant, PI, 4 machines @4k	\$16,000.00
1997	Tufts University, FRAC, Co-PI, with Dr. David Locke, “ Music and Media”	\$2,000.00
1996	NASA JOVE (NASA/ Joint University Venture) Grant PI	\$186,000.00
1996	Beveridge Foundation, Co-Pi, Dr. Ioannis Miaoulis	\$75,000.00
1996	National Science Foundation, National Science Foundation, Planning Grant Award. “Compression and Interaction Algorithms for Modeling and Simulation Environments”. MIP-9528194, PI	\$18,000.00
1996	Tufts University, FRAC, “Interactive Media Environments for Occupational Therapy”	\$2,200.00
1995	Massachusetts Cultural Council (MCC), FY96-EP-MED-0795, “Multimedia in the Classroom”	\$3,000.00
1995	Gloucester Cultural Council (GCC), "Multimedia in the Classroom Training"	\$300.00
1994	Tufts University, Summer School Development Fund, “Computer Animation for Technical Communications”	\$2,500.00
1991	Digital Equipment Corporation Research And Development, PI	\$500,000.00

Awards:

2014

- Soroptimist Ruby Award, 2014.

2013

- IEEE Ethical Practices Award, inaugural recipient, 2013.
- IEEE William E. Sayle Award for Achievement in Education, Oklahoma City, October 25, 2013.
- IEEE Outstanding Member for the Boston Section, 2013.
- Engineers Week, New England, Leadership Award, 2013.

2012

- Order of the Sons of Italy Public Service Award Law and Justice, May 6, 2012.
- Under Karen’s leadership as Chair, the IEEE Boston Section won the “Outstanding Large Section Award,” 2011.
- IEEE Certificate of Recognition for chairing IEEE Boston Section, 2012.
- Named IEEE Ambassador.

2011

- IEEE Certificate for Notable Services and Contributions towards the advancement of IEEE and the Engineering Professionals, 2011.
- IEEE Certificate of Appreciation for services as a Region 1 Section Chair, August 2011.

- IEEE Women in Engineering Affinity Group Certificate of Appreciation, Phoenix, Arizona, May 2011.
- NSF Presidential Award for Engineering, Science and Mathematics Education and Mentoring. 2010, Awarded in 2011.
- IEEE Education Society Harriet Rigas award for Outstanding Educator. 2011.
- Anita Borg Institute Women of Vision Award for Social Impact, 2011.

2010

- IEEE Major Educational Innovation Award 2010.
- IEEE EAB Award for Major Educational Innovation, June 26 2010.
- Norm Augustine Award from the National Academies of Engineering and Science, American Association of Engineering Societies, Washington DC, April 19, 2010.
- APEX awards for publication excellence, six time winner, for the IEEE Women in Engineering Magazine. She is the magazine's Editor-in-Chief.

2009

- State Commissionerate for the Disabled, Certificate of Appreciation, December 1, 2009.

2008

- IEEE Fellow, 2008
- "Be the Change", Massachusetts Conference for Women, chosen by first ladies, Mrs. Duval Patrick and Mrs. Thomas Menino, 2008.
- Galaxy Award for Outstanding Mentoring and Leadership to recruit young girls into Science and Engineering, Science Club for Girls, September 30, 2008.

2007

- 16th IEEE North Atlantic Test Workshop, Certificate for significant contribution. Boxborough, MA. May 2007.
- Regional Hero Award, Alt-Wheels Festival for renewable energy, Boston City Hall Plaza, 2007.
- IEEE Representative for the National Women's Hall of Fame induction, Weedsport, NY, 2007.

2006

- Women at Work Museum, recognized for "Outstanding Contributions to Women in Engineering and Science", 2006.
- Cape Ann Historical Museum, selected as a featured artist for Cape Ann Blossoms Exhibit, entitled piece: "Our Lady of Good Voyage", May 20, 2006.
- IEEE North Atlantic Test Workshop: recognition of dedication, May 2006.
- IEEE North Atlantic Test Workshop, Recognition Award for contributions to the workshop. Burlington, VT. May 2006.
- 15th IEEE North Atlantic Test Workshop, Certificate for significant contribution. Essex, VT. May 2006.
- Boston University Outstanding Engineering Alumni Award, April 2006.

2005

- 14th IEEE North Atlantic Test Workshop, Certificate for significant contribution. Essex, VT. May 2005.

2004

- 13th IEEE North Atlantic Test Workshop, Certificate for significant contribution. Essex, VT. May 2004.
- Larz Anderson Museum of Transportation, “Alt Wheels” Conference. Winner Best Educational Exhibit for the Nerd Girls Project, 2004.

2003

- International Test Conference: Technical Contributions, October 2003.
- 2003 International Test Conference Technical Paper Reviewer
- Massachusetts High Tech Magazine, “All Star” award for contributions to technology in MA, 2003.
- The Madeline and Henry Fischer Award for Engineering Teacher of the Year, Tufts University, 2003.

2002

- IEEE North Atlantic Test Workshop, Outstanding Contributions, Long Island, NY. May 2002.

2001

- IEEE North Atlantic Test Workshop, Certificate for significant contribution. Gloucester, MA. May 2001.
- International Test Conference: Outstanding Contributions, October 2001.
- IEEE Computer Society: Certificate of Appreciation, October 28, 2001

2000

- IEEE Micromouse Robotics Competition: advised the students for this competition. The team won second place in 2003, 2002, third place in 2001 and fourth place in 2000.
- International Test Conference: Technical Contributions, October 2000.

1999

- Tufts University Mentorship/Research Award, with Terry Orfanos, 1999.

1998

- Outstanding Contributions to NASA Research, 1998.
- NASA Excellence in Research Award, 1998.
- NASA Curriculum Development Award for EE202: “Digital System Testing and Simulation”, 1998.
- NASA Curriculum Development Award for the Tufts University Multimedia Minor, 1998.
- NASA Best Team Poster Presentation, JOVE conference, 1998.

1997

- NASA Excellence in Research Award, 1997.
- NASA Curriculum Development Award for “Animation for Technical Communications”, 1997.

1996

- NASA Langley Research Scientist Fellow, 1996.

- Massachusetts Interactive Media Council (MIMC), third place for student CD-ROM project on African Drum music, “Gahu of the Ewe” in collaboration with the Music department, 1996.

1994

- Electrical Women Round Table, Julia Kiene Fellowship, 1994.

1993

- Digital Equipment Corporation Fellowship, 1993.

1992

- Digital Equipment Corporation Recognition Award for “Outstanding Research and Performance”, 1992.

1985

- Boston University Alumni Association Outstanding Senior Award, 1985.

Honors of Advisees:

2011

- Anne E Borghesani Symposium Presentation by Lisa Pinals Electrical Engineering (Engineering Outreach Abroad, Australia), Supervised by Dr. Panetta, November 16, 2011. Lisa was also awarded an IEEE Graduate Fellowship for her Ph.D. program.

2010

- Sampathkumar Veeragathan, Dr. Panetta’s graduate research assistant, Tufts University Presidential Community Leadership award for his research project conducted under Dr. Panetta’s advisement, April 2010.

2009

- IEEE TePRA Student Robotics Competition, Dr. Panetta’s students placed second and third in the competition, 2009.
- Sampathkumar Veeragathan, Dr. Panetta’s graduate research assistant, IEEE Member Geographic Area Award for his research project conducted under Dr. Panetta’s advisement. November 21, 2009.
- Sampathkumar Veeragathan, Dr. Panetta’s graduate research assistant, IEEE President’s Humanitarian Challenge finalist, 2009

2008

- Aaron Greenblatt, Dr. Panetta’s undergraduate research assistant, National Science Foundation Fellowship, honorable mention, 2008.

2007

- Lauren S. Jones, Dr. Panetta’s Nerd Girl Project leader, National Semi-Conductor Research Association, graduate fellowship award, 2007.

2006

- Ethan Danahy, Dr. Panetta's Ph.D. student was the recipient of the 2006 Graduate Student Research Award, 2006.

2004

- Ethan Danahy, Dr. Panetta's Ph.D. student was the recipient of the 2004 Outstanding Graduate contributor to Engineering Education Award, 2004.
- Barry Goldwater Scholarship, Thomas Baran, now a Ph.D candidate at MIT for his research work in Digital Signal Processing with Dr. Panetta, 2004.
- IEEE national student paper competition, Thomas Baran, second place for his research with Dr. Panetta, 2004.
- IEEE national student paper competition, Marco Enriquez, third place for his research with Dr. Panetta, 2004.

2002

- IEEE Best Student Paper Competition, Daniel Keefe, now a Ph.D. graduate from Brown University for his collaborative work on Dr. Panetta's NASA Grant, 2002.
- IEEE Silver Medal for the Tufts University IEEE Student Chapter web design, 2002.

2001

- Ethan Danahy, Graduate Research Fair, 3rd Place in October 2003 and 1st place in October 2001.
- Terry Orfanos, received the Outstanding Graduate Research Assistant Award from the Graduate School of Arts and Sciences. 2001.

Invited Talks:

2016

- "Inspiring Innovation", ADI Women in Technology, Keynote Speaker, Boston, MA, April 12, 2016.
- "Empowering Your Potential", Advisory Council for Women (ACW) at the Jet Propulsion Laboratory (JPL) NASA, Keynote Speaker, Pasadena, CA, March 25, 2016.

2015

- Women Accelerators, De La Femme's "Breaking the glass Ceiling in STEM Disciplines", The Broad Institute, Keynote Speaker, Cambridge, MA, November 9, 2015.
- "Empowering your Potential", IEEE Women in Engineering Summit, Keynote Speaker, Philadelphia, PA, November 7, 2015.
- Inspiring Innovation, Intel Corporation, Keynote Speaker, Hudson, MA, October 20, 2015.

2014

- Nerd Girls, Math Moves You, Keynote Speaker, Middlesex Community College, November 2, 2014.
- "Real World Engineering using MATLAB", Mathworks, October 7, 2014.
- "Change the World: Inspiring future Engineers," Dana Hall, Wellesley MA, September 9, 2014.

- USA Science and Engineering Festival, Speaker, “Beyond the Pink Aisle- Cool, Creative Ways, Inspiring Girls in STEM”, Washington DC, April 27, 2014.
- IEEE Integrated STEM Education Conference (ISEC 2014), Keynote, “Inspiring Innovation,” March 8, 2014.
- Empowering Nerd Girls, Brearley School, New York City, February 21, 2014.

2013

- USA Science Festival, Nifty Fifty Speaker, St. Gertrude High School, Virginia, December 10, 2013.
- Nerd Girls, Math Moves You, invited speaker, Middlesex Community College, November 17, 2013.
- IEEE Women in Engineering Annual Meeting, Panelist, Portland Oregon, August 2013.
- Order of the Sons of Italy 58th Annual Scholarship Awards, invited speaker, May 19, 2013.
- IEEE WIE/Google, Enhancing the Sustainability of Women in Technology, Speaker, January 23, 2013.

2012

- USA Science Festival, Nifty Fifty Speaker, Madeira School, Virginia, April 12, 2012.
- Microsoft Digigirlz Camp, Keynote Speaker, Cambridge MA, March 30, 2012.
- Next Generation of Experion Headlines Technology Advancements at Honeywell Users Group, Moderator. Houston, Texas. June 12, 2012.
- URL: https://www.honeywellprocess.com/en-US/news-and-events/Pages/pr_06152012_honeywell-puts-a-twist-on-sustain-ability-at-americas-users-group-symposium.aspx
- Math Moves You, Keynote Speaker, Middlesex Community College, October 21, 2012.
- Tri-Cities Engineers Week Banquet, Engineer of the Year Award Presentation, Keynote Speaker, Pasco Washington February 24, 2012.
- IEEE/EWEEK, Fort Huachuca, Arizona, Keynote Speaker.

2011

- IEEE Milestone Presentation to MIT Lincoln Labs, Opening Speaker, December 8 2011.
- Society of Women Engineers, Tufts University, Keynote Speaker, October 18, 2011.

2010

- IEEE Region 1 Northeast Industry Day, Speaker, September 24, 2010.
- National Science Foundation Center For Energy-Efficient Ultra-Dense Computing University of Michigan, Ann Arbor, Speaker, September 14, 2010.
- Boston University Career Night speaker, November 10, 2010.
- IEEE Women in Engineering Phased Array Conference Reception, co-speaker with Dr. Millie Dresselhaus, October 12, 2010.
- IEEE Region 1 Industry Day, Evening Keynote Speaker, Portsmouth, NH, September 25, 2010.
- “Human Visual System Image Processing Algorithms and Applications to Image Recognition Systems,” MIT Lincoln Laboratories, August 2010.

2009

- Microsoft Digigirlz Camp, Keynote Workshop Speaker, North Carolina, June 2009.

- IEEE 2009 Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), “Fostering better use of the talent pool of Women in Engineering and Science,” Orlando, Florida, October 28, 2009.
- IEEE Women in Engineering Professional Development Seminar, Keynote Speaker, White Plains, NY, September 25, 2009.
- Society of Women Engineers, “Engineering with a Global Perspective,” April 4, 2009.
- Society of Women Engineers, Professional Night, Boston, MA, February 19, 2009.
- Rockport Middle School, “Kids to College,” April 15, 2009.
- Society of women’s Engineers Region F Conference, Speaker, 2009
- Wentworth Institute of Technology, Fourth Annual Women’s Leadership Conference, Keynote Speaker, March 21, 2009.

2008

- Delta Academy, Minority Women Engineering Day, April 10, 2008.
- Women at Work Museum, Envision 2020 Exhibit, keynote speaker, March 19, 2008.
- University of Central Florida, Women in EECS Luncheon, Keynote Speaker, October 30, 2008.
- Boston University 2008 Engineering Distinguished Alumni Awards, “Engineering and the Community,” Boston, MA. November 2008.
- IEEE Sections Congress 2008, Women in Engineering, Quebec City, Canada, 2008.
- Order of the Engineer, Ring Ceremony, Keynote Speaker, Boston University, February 22, 2008.
- National Academy of Engineering Diversity Forum, Boston, MA, February 14, 2008.
- IEEE Congress, Chennai, India, January 2008.
- Government of Dubai, Silicon Oasis Authority, January 2008.
- Women at Work Museum, Envision- Women Engineers, Keynote Speaker, March 19, 2008.
- IEEE RFID Conference, Las Vegas, Nevada, April 2008.
- Envision-Women Engineers, Attleboro High School, Keynote Speaker, March 19, 2008.

2007

- FIRST Robotics, Keynote Speaker, Nashua New Hampshire, December 4, 2007.
- International Joint conference on Neural networks, Women in Computational Intelligence Keynote Speaker, Orlando, Florida, August 17, 2007.
- IEEE Power Engineering Conference, Orlando, Florida, 2007.
- IEEE Women in Engineering Forum, Melbourne, Australia, March 2007.
- IEEE Women in Engineering Conference, University of New Hampshire, keynote speaker, April 10, 2007.
- IEEE Radar Conference, Boston, MA, April 17 2007.
- Clean Cities of Massachusetts, “Renewable Energy Systems on Thatcher Island,” Boston, MA, January 30, 2007.

2006

- The Massachusetts Conference for Women: Session: The Next Generation of Global Architects”, Boston, MA, December 14, 2006.
- Society of Women Engineers, “Walks of Life Career Panel”, Medford, MA, December 12, 2006.
- Build Boston Conference, Women in Design, Session: Degrees of Connections, title: “Connecting Ideas with Actions and Inspiring Change.”, World Trade Center, Boston, MA, November 14, 2006.

- MACOM/ Tyco Electronics Professional Women's Network distinguished speaker seminar, title: "Running Through the Finish Line: Experiences from the Nerd Girl Engineering Project", Lowell, MA, November 10, 2006.
- Women at Work Museum, Defining the Decade Exhibit, title: Women in Transport: Visualizing Complex Data Sets from NASA Shuttle missions", Attleboro, MA, November 4, 2006.
- Women at Work Museum, Dream it! Design it! Exhibit, title: "Art, Engineering and Alternative Energy.", Attleboro, MA, August 2, 2006.
- SolarNow Inc., Greenergy Park renewable energy fair, "Solar Energy Engineering", Beverly, MA, July 2006.
- Women at Work Museum, title: "The Nerd Girls: Breaking the Stigmas and Stereotypes of Women in Engineering and Science", June 13, 2006.
- Rockport Public School, Girls and Technology, title: "Everyday Engineering", Medford, MA, April 12, 2006.
- Peabody Public Schools, Welch Middle School, "Engineering for Everyone", January 2006.
- Peabody Public Schools, West Middle School, "Visualization versus Animation", January 2006.
- Welch Elementary School, Peabody, MA, February, 2006.

2005

- Clean Cities of Massachusetts, Department of Energy Resources: "Renewable Energy Designs for Thacher Island", Boston, MA, February 2005.
- Thacher Island Association, title: "Renewable Energy Engineering Solutions for Remote Environments", Rockport, MA, April 2005.
- Sandwich Public Schools, title: "Renewable Energy and Engineering", Sandwich, MA, February 2005.
- Woodward School for Girls, title: "Girls in Engineering", Quincy MA, January 2005.
- Clean Cities: Department of Energy Resources: Keynote speaker, 2005.
- Burke School, Peabody, MA, December 21, 2005.
- West Memorial School, Peabody, MA, December, 2005.
- Massachusetts Guidance Symposium for Engineering and Engineering Technology Conference, Boston Museum of Science, Cambridge, MA, November 10, 2005.

2004

- NSF PSET Project, title: "Inventing the Binary Box for teaching Digital Communications", March 2004.
- Rockport Educational Foundation, Keynote Speaker, title: "Visualization of NASA Data", April 24, 2004.
- Tufts University First Year Scholars program.
- Malden Middle School Outreach Program: "What Engineers Do", April 2, 2004.
- Malden Middle School Outreach Program: "What Engineers Do", April 16, 2004.

2003

- Larz Anderson Auto Museum: The Museum of Transportation, Brookline, MA, September 2003.
- Girls Inc., Smart Conference, Keynote Speaker, title: "Engineers, Ready to Take on any Feat!", April 2003.
- Society of Women Engineers, Sports Engineering workshop for girls, May 2003.

- American Society of Engineering Education and NASA: title: “NASA Joint Ventures for Engineering Education”, Virginia, April 2003.

2002

- Somerville Middle School Outreach Program: “Animation for Engineering and Science”, July 19, 2002.
- Society of Women Engineers, title: “The Real World: Industry Perspectives on Engineering Careers”, April 5, 2002.
- Association for Women in Computing, “Animation for Technical Communications”, April 25, 2002.
- Tufts University First Year Scholars Program, “Multimedia and Engineering”, July 17, 2002.
- Discovery Museum: “Girls Get Set!” program, “Engineers Changing the World!”, July 26, 2002.
- Discovery Museum, Educator’s Open House, Acton, MA, July 26, 2002.
- Runkle School, Brookline, MA, November 1, 2002.

1999

- National Science Foundation, “CAREER Awardees Workshop”, invited presenter, 1999.

1998

- Boston University, College of Engineering. Title: “Multilevel Concurrent Simulation”, 1998.
- Syllabus Conference, Title: “Adding Multimedia to the Curriculum: Issues and Approaches”, July 1998.
- NASA JOVE Conference, Cocoa Beach Florida, Guest Speaker, 1998.
- Eta Kappa Nu Induction Ceremony, Keynote Speaker, 1998.

1997

- Society of Women engineers, keynote speaker, 1997
- University of Lowell, Electrical Engineering department. Title: “Stimulating Simulating”.
- Girls in Engineering NSF Summer Program, Keynote Speaker, 1997.
- Tufts University Sixth Annual Teaching Conference, Speaker and organizer Multimedia Workshop, 1997.

1995

- Tau Beta Pi Induction Ceremony, Keynote Speaker 1995.

Professional Service:

Institute of Electrical and Electronic Engineers (IEEE)

IEEE HKN President 2019

IEEE Systems Man and Cybernetics, Vice-President 2019

IEEE Public Visibility Chair 2018

IEEE Educational Board Awards and Recognition Committee Past Chair 2018

IEEE Activities Board EPICS Committee Member 2018

<i>IEEE Global Public Policy Committee Member</i>	2018-2019
<i>IEEE Systems Man and Cybernetics Board of Governors Member at Large</i>	2017-2019
<i>IEEE Transactions on Systems Man and Cybernetics Associate Editor</i>	2017-2018
<i>IEEE Fellows Evaluation Committee</i>	2018
<i>IEEE Signal Processing Society, Boston Section Chair</i>	2017- Present
<i>IEEE HKN Board of Governors, Member-at-Large</i>	2017
<i>IEEE Systems, Man and Cybernetics Society, Board of Governors Member-at-Large</i>	2017
<i>IEEE Honors Summit Organizing Committee</i>	2017
<i>IEEE Public Visibility Committee member</i>	2016-2017
<i>IEEE Educational Activities Board, Computing and Technology Strategy Committee (ECTPSC) Member</i>	2017
<i>IEEE Educational Activities Board, Past-Chair</i>	2017
<i>IEEE Educational Activities Board, Awards Chair</i>	2016
<i>IEEE New Initiatives Disruptive Innovations Committee Member</i>	2016
<i>IEEE Region 1 Pace Chair</i>	2015
<i>IEEE Boston Education Society Chair</i>	2015- Present
<i>IEEE Awards Presentation and Publicity Committee Chair</i>	2014-2015
<i>IEEE-USA Nominations and Appointments Committee</i>	2015
<i>Women in Engineering (WIE) Editor-In-Chief</i>	2007-Present
<ul style="list-style-type: none"> • Editor-In-Chief for the Award winning IEEE Women in Engineering Magazine. Direct a team of writers, staff and production team of 25 people and a subscription membership of over 40,000 individuals. 	
<i>IEEE Systems, Man, and Cybernetics Society, Founding member of the IEEE Technical Committee on Information Assurance, Multimedia & Mobile Intelligent Systems</i>	2007-Present
<i>IEEE Boston Section Editor of The Reflector Newspaper</i> Over 8900 subscribers	2009-Present
<i>IEEE Critical Infrastructure and Security Initiative Committee</i>	2007-Present

<i>IEEE North Atlantic Test Workshop, Steering Committee Member</i>	1999-Present
<i>IEEE TePRA International Conference on Technologies for Practical Robot Applications, Steering Committee</i>	2008-Present
<i>IEEE Tufts University Branch Student Chapter Advisor</i>	1994-Present
<i>IEEE Educational Activities Board (EAB) Awards Chair</i>	2013-2014
<i>IEEE Educational Activities Board (EAB) Sections Educational Outreach Committee</i>	2011-2014
<i>IEEE Region 1 Education Outreach Coordinator</i>	2011-2014
<i>IEEE USA Vice-President of Communications and Public Relations</i> <ul style="list-style-type: none"> • Manage and coordinate IEEE-USA's communications, public awareness and recognition programs and associated budgets totaling over two million dollars. Supervised 15 professional staff and 100 engineers. • Appoint committee chairs and volunteer editors for IEEE-USA communications, public awareness and recognition committees and publications with the concurrence of the IEEE-USA President. • Serve on the IEEE-USA Board of Directors, the IEEE-USA Operations Committee and the IEEE-USA Finance and Budget Committee. • Serve as an ex officio member of each of the communications, public awareness and recognition committees. • Created the App-E-Feat competition, Appfeat.org, and mobile application matching system, where Non-Profit Organizations could post their needs for mobile applications and IEEE Engineers would be matched with the organization. This initiative was in conjunction with the Clinton Global Initiative, for which I served as the IEEE representative. • Consultant to the Clinton Global Initiative commitment for Women Leading Women in Information Computing Technology (ICT) to "build a pipeline of women and girls entering into ICT and to enhance retention and advancement of women currently studying and working in ICT." • Clinton Global Initiative WeTech Advisor. This initiative is to help more women and girls enter and succeed in technology careers in Africa, India and the U.S. 	2013-2014
<i>IEEE Homeland Security Technology Committee, Program Committee</i>	2007-2012
<i>IEEE Award Presentation and Publicity Committee Member</i>	2010, 2012-2013
<i>IEEE Boston Section, Executive Board Member, Senior Past Chair</i>	2013
<i>IEEE Boston Section, Executive Board Member, Past Chair</i>	2012

<i>IEEE Educational Society, Central New England, Chair</i>	2004-2012
<i>IEEE Boston Section, Executive Board, Student Activities Chair</i>	2007-2011
<i>IEEE Awards Review Committee</i>	2009-2011
<i>IEEE Public Visibility Committee</i>	2011
<i>IEEE Boston Section, Executive Board Member, Chair</i>	2011
<ul style="list-style-type: none"> Managed the section's million dollar budget, supervised an executive board of 22 individuals and 32 society section chairs and two professional staff. 	
<i>IEEE Boston Section, Executive Board Member, Vice Chair</i>	2010
<i>IEEE Boston Section, Executive Board Member, Secretary</i>	2009
<i>IEEE Homeland Security Conference Session Chair</i>	2009
<ul style="list-style-type: none"> Session Chair for the Border and Maritime: Tunnel Detection, IEEE Boston, May 12, 2009. Session Chair for the Border and Maritime: Nonintrusive Contraband and WMD Detection, IEEE Boston, May 12, 2009. Session Chair for the Disaster Response: Situational Awareness (Personnel, Resources, Physical Situation), IEEE Boston, May, 12, 2009. 	
<i>IEEE Technology Management Conference, Steering Committee</i>	2009
<i>IEEE Boston Section, IEEE 125th Anniversary Celebration Committee</i>	May 11, 2009
<i>Women in Engineering (WIE) Committee Chair</i>	2007-2009
<ul style="list-style-type: none"> Director for the world's largest professional women's engineering and science organization. Over 450 WIE Chapter Chairs reported to Dr. Panetta in addition to two professional staff administrators. Dr. Panetta was responsible for driving this organization's strategic plan, overseeing a million dollar budget and developing programs to help attract, retain and support women in engineering at all stages of their careers. 	
<i>IEEE Boston Section, Executive Board Member, Treasurer</i>	2008
<i>IEEE Boston Section, Executive Board Member, Member-At-Large</i>	2005-2007
<i>IEEE North Atlantic Test Workshop, Session Chair</i>	1997-2006
<i>IEEE International Test Conference (ITC), Session Chair</i>	2003-2005
<i>IEEE International Test Conference (ITC), Program Committee Member</i>	2000-2005
<i>IEEE Educational Society, Central New England, Vice Chair</i>	2003-2004

<i>IEEE International Test Conference (ITC), Topic Coordinator for the “Path Delay Fault Test” Session</i>	2000-2003
<i>IEEE Embedded Fault Tolerant Workshop, Program Committee</i>	2000
<i>IEEE International Test Conference (ITC), Panel Coordinator</i>	2000
<ul style="list-style-type: none"> Panel Coordinator for “Testing Challenges for MEMS” (micro-Electromechanical systems) 	
<i>IEEE North Atlantic Test Workshop, General Chair</i>	2000
<ul style="list-style-type: none"> General Chair during May 25, 26, 2000 in Gloucester, MA 	
<i>IEEE North Atlantic Test Workshop, Vice General Chair</i>	1999
<i>IEEE North Atlantic Test Workshop, Program Chairman</i>	1997-1998
IEEE Networked Computing Conference (NCA), Program Committee Member	
International Society for Optics and Photonics (SPIE) <i>Program Committee Member for the Advanced Concepts for Intelligent Vision Systems (ACIVS) Conference</i>	2015
Society for Modeling & Simulation International (SCS) <i>Liaison between the Society of Computer Simulation (SCS) and the Advanced Simulation Technologies Conference</i>	1998-2004
<i>Program Committee Member, 35th Annual Simulation Symposium, San Diego, CA</i>	April 2002
<i>Program Committee Member, Communication Networks and Distributed Systems Modeling and Simulation conference (CNDS)</i>	2000
<i>Session Chair, Society for Computer Simulation 33rd Simulation Symposium</i>	2000
<i>Session Chair, Society for Computer Simulation 32nd Simulation Symposium</i>	1999
<i>Program Chair, Simulation Symposium, San Diego, CA</i>	1999
The European Association for Signal Processing (EURASIP) <ul style="list-style-type: none"> Guest Editor for <i>Journal on Advances in Signal Processing</i> 	2014
US Senate Judiciary Committee <i>Expert Witness</i>	2013
<ul style="list-style-type: none"> Testified as Expert Witness for a Senate Judiciary Committee Hearing on “How Comprehensive immigration Reform Should Address the Needs of Women and Families,” March 18, 2013. 	
Society of Women Engineers (SWE) <i>Society of Women Engineers (SWE) Tufts Student Chapter Advisor</i>	2006-Present

Society of Women Engineers Roundtable on Practical Approaches to Attracting and Retaining Women in Science Technology, Engineering and Mathematics (STEM) Fields, Member Jan. 12, 2010

National Science Foundation (NSF)
NSF Girls Collaborative Champions Board Member 2011-2014

NASA

NASA/ASEE (American Society of Engineering Education) Committee

- *Developed a new joint grant initiative to replace the NASA/ASEE Summer Faculty Program*

External Advisory Committees

Associate Editor of the International Journal of Reliable Electronic Systems Design, International Press 2006-Present

“She’s So Boss”, a women entrepreneurs support organization, member of Board of Advisors 2014

UTSA External Advisory Committee for the Center on Simulations, Visualization and Real Time Computing (SiViRT) March 5, 2010

Boston University College of Engineering External Programs, Evaluator Aug. 21, 2009

Women in Technology Seminar Series, Session Chair

Judge of the Society for Technical Communications International Video Competition 1996-1998

Reviewing Responsibilities:

1. Reviewer for “Canals and Dams: Investigate Feats of Engineering”, by Donna Latham, Nomad Press, ISBN: 978-1-61930-165-8, 2013
2. Reviewer for “Explore Electricity”, by Carmella Van Vleet, Nomad Press, ISBN: 978-1-61930-180-1, 2013
3. NSF Site Visit Team, 2010
4. IEEE Fellows Review sub-committee, Computer Society, 2010
5. NSF Grant Proposal Review: SBIR and Circuit Simulation Proposals, 1998
6. Reviewer for Essentials of Electronic Testing for Digital Testing, by Michael Bushnell and Vishwani Agrawal, Kluwer Academic Press
7. Reviewer for National Science Foundation of Ireland
8. Reviewer for middle school text book, “Electricity” and “Electromagnetism”, by Ioannis Miaoulis and Martha Cyr, Pearson Education Publishers
9. Reviewer for “Structured Computer Organization”, by Andrew Tannenbaum, fourth edition, Prentice Hall Publishers
10. Reviewer for “Operating Systems”, by William Stallings, fourth edition, Prentice Hall Publishers

11. Reviewer of the book, "Power Electronics", by K.C. Agrawal, 2008
12. Reviewer for "Software and Hardware Engineering", by Frederick Cady and James Sibigtoth, Oxford University Press, 2006
13. Reviewer for "Microcontrollers: Motorola MC68HC12", Oxford University Press, 2006
14. Reviewer for "Digital Logic and Applications", by Parag Lala, Prentice-Hall Publishers, 2006
15. Reviewer for "The Handbook of Information Security, Data Compression", John Wiley & Sons, Inc., 2006
16. Reviewer for "The Handbook of Information Security, Video Imaging Techniques", John Wiley & Sons, Inc., 2006
17. Reviewer for Kluwer Academic Science Mathematics Series Journal
18. Technical Reviewer for:
 - 18.1. Reviewer for the IEEE Test Conference
 - 18.2. Reviewer for the IEEE Transactions on VLSI
 - 18.3. Reviewer for the IEEE Transaction on Computers
 - 18.4. Reviewer for the IEEE Transactions on Image Processing
 - 18.5. Reviewer for the IEEE Transactions on Signals and Systems
 - 18.6. Reviewer for the IEEE Computer
 - 18.7. Reviewer for the IEEE Embedded Fault Tolerant Systems Workshop
 - 18.8. Reviewer for 7th IEEE International Conference on Microelectronic Systems Education
 - 18.9. Reviewer for Society of Computer Simulation 31st Simulation Symposium, 1998

Teaching Activity:

1. ES 4: Introduction to Digital Logic
2. EE 11: Introduction to Analog Electronics
3. EE 14: Microprocessor
4. EE 26: Digital Logic Systems
5. EE 103: Introduction to VLSI Design
6. EE 120: Computer Animation for Technical Communications
7. EE 126: Computer Architecture
8. EE 128/CS111: Operating Systems
9. EE 192: Graduate Seminar Series
10. EE 194SIM: Embedded System Design
11. EE 202: Digital Systems Testing and Simulation with VHDL
12. EE 215: Computer Architecture and Organization

Departmental, College, and University Services:

<i>Chair of the Engineering Graduate Studies Committee</i>	2013-Present
<i>Elected Co-Chair of the Tufts University Executive Committee</i>	2011-2014

<i>Appointed as the Office of Equal Opportunity Liaison for the Tufts University School of Engineering</i>	2014
<i>Appointed to the President's Council on Diversity</i>	2014
<i>Elected to the Tufts University Committee on Committees and served as Chair</i>	2011-2013
<i>Served as the Tufts University School of Engineering Academic Standing Committee</i>	2006-2011
<i>Served as member of Committee on Committees</i>	2001-2003
<i>Served as Chair of Committee on Committees</i>	2004-2006
<i>Committee Member of the Experimental College</i>	1999-2001
<i>Chair of the Experiment College</i>	2001-2002
<i>Parents Weekend, School of Engineering Representative and Speaker</i>	1994-2004

Activities:

Consulting:

- NSF/NAE Equity Extension Services Project: ENGAGE: Engaging Students in Engineering 2009-2010.
- Camros Capitol.
- National Academy of Engineering.
- WEPAN - Women in Engineering Proactive Network.
- Westwood Public Schools.

Community Service:

- Volunteer for Nursing Homes conducting flower arrangement activities with residents
- Present many outreach talks every year to k-12 students to promote engineering and science careers
- Women at Work Museum, Planning Committee for the Museum's new building
- Boston High School Science Fair Judge
- Education committee for the Gloucester, MA, historic Schooner, "Adventure"
- Member of the Friends of the Cape Ann Symphony
- Hostess for the Topsfield Fair, Flower Building, Topsfield, MA

Interests:

Trained in voice, piano, flute, violin and engineering for the benefit of humanity.
Special Effects, Animation, Music, Sailing, Robotics, Gardening, and Ichthyology.