

## ROSALYN HOBSON HARGRAVES, PH.D.

Virginia Commonwealth University  
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### EDUCATION:

#### **Ph.D. Electrical Engineering, University of Virginia, January 1998**

Dissertation: A Spatio-Temporal Artificial Neural Network for Object Recognition Using Bioacoustic Signals

#### **M.S. Electrical Engineering, University of Virginia, January 1995**

Thesis: Hardware Implementation of a Neural Network Controller for a Manipulator Arm

#### **B.S. Electrical Engineering, University of Virginia, May 1991**

Thesis Topic: Investigation of the Operational Characteristics of the Microswitch Mass Airflow Sensor a Silicon Chip Microtransducer for Airflow Sensing Applications

### FACULTY APPOINTMENTS:

#### **Virginia Commonwealth University, Richmond Virginia**

Associate Professor of Teaching and Learning	2012-present
Associate Professor of Electrical and Computer Engineering	2003-present
Assistant Professor of Electrical Engineering	1997-2003
Adjunct Professor of Electrical Engineering	1996-1997

### ADMINISTRATIVE APPOINTMENTS:

#### **Virginia Commonwealth University**

*Interim Department Co-Chair, Department of Teaching and Learning* 2015 – present  
Responsibilities include: ensuring department academic information is current and up-to-date (course catalog, bulletin, class descriptions) for ten Masters of Education tracks, nine Master of Teaching tracks, eleven post baccalaureate certificates, and two Education Doctor of Philosophy tracks, coordinating graduate assistantship assignments, coordinating course scheduling, reviewing and approving graduation applications, co-managing adjunct faculty contracts for approximately 40 adjunct faculty, co-organizing faculty department retreat and monthly faculty meetings, supporting the day to day operation of the department of 21 faculty and approximately 300 graduate students.

*Associate Dean for Graduate Studies, School of Engineering* 2007-2012  
Responsibilities included: administering the recruitment and admissions for two doctoral and four master's degree programs (approximately 250 students), procuring and administering graduate student funding; chairing the Graduate Academic Committee; graduate academic affairs including termination, appeals, graduation, and adherence to all school/university policies and procedures; graduate program assessment; curriculum and new program development. Supervised a staff of two and a programmatic budget of \$2,000,000.

*Commonwealth Graduate Engineering Program Director* 2007-2013  
Served as lead point-of-contact for VCU participation in the state-wide program. Oversaw all distance education programs in the School of Engineering. Submitted annual reports to the State Council for Higher Education in Virginia. Coordinated classes received and transmitted. Ensured distance education facilities meet state requirements. Supervised a staff of two.

*Director: VCU- University of KwaZulu Natal International Partnership* 2007-2013

*Co-Director: VCU- IIT Kharagpur International Partnership* 2007-2010

Served as the primary contact between VCU and UKZN and provide leadership in developing the vision and plans for collaboration. Explored possible projects, recruit appropriate faculty and orchestrate project development. Hosted visiting delegations as well as coordinating outgoing VCU

delegations to the UKZN campuses.

**U. S. Agency for International Development**

*Bureau for Economic Growth Agriculture and Trade*

*Office of Education Higher Education Specialist*

2003-2005

Investigated the role of science and technology in international development, visiting six missions in all four regions, assessing the role of science and technology in their respective programmatic activities, in various sectors including health, energy, agriculture, rural development, education, and economic growth. Fostered collaborations between USAID and the National Science Foundation, the Department of State, the Department of Education, and the American Association for the Advancement of Science that promoted science, technology, engineering and math educational activities in international development.

**OTHER APPOINTMENTS:**

**Signal Processing Technologies**

*Co-founder and Chief Technology Officer*

2010 – present

Developed technology for real-time automated data mining of medical videos. Identified potential clients, investors, and partners. Developed commercialization plan. Secured funding from the National Science Foundation to support the research.

If successfully deployed, the technology enabled by this effort will extend an area of emerging clinical significance. The effort proposes to specialize a tool towards assessment of tissue oxygenation using real-time automated processing of microcirculation videos. The real-time and fully automated nature of image processing and machine learning methods proposed by this project, places this technology in a strong position in the market, both as a standalone system and as a software package included with imaging hardware.

**Siebe Appliance Controls**

*Research Consultant*

1998-1998

Corporate Research and Development Engineer. Investigated method of incorporating intelligence into the design of appliance controllers for large white appliances.

**University of Virginia**

*Office of Minority Programs Graduate Assistant*

1995-1996

Coordinated summer, tutorial, and academic monitoring programs. Hired and supervised summer and tutorial staff. Provided academic counseling for students. Managed budget totaling over \$100,000. Assisted with undergraduate and graduate recruiting effort.

*Office of Residence Life Graduate Advisor*

1992-1996

Provided advice, guidance, and counseling as related to the academic needs of the residents and Resident Staff and responsible for educational and cultural program coordination in two first year residence halls. Advised its dorm council in coordinating area programming events. As *Graduate Advisor Chair* (1994-1995) supervised nine graduate advisors and served on the Resident Staff Appraisal Board, the evaluating board for Resident Staff.

*School of Engineering Graduate Teaching Assistant*

1992-1994

Instructed students in the Control Laboratory where real world electro-mechanical and electrical applications were presented to theory learned in class. Instructed students in the Robotics Lab where they received hands-on experience in the practical use of manipulator arms with vision.

*Office of Residence Life Head Resident*

1990-1991

Managed ten resident coordinators and a residence hall that houses 650 students. Advised dorm council in coordinating area programming events within a \$4,000 budget. Served on the Resident Staff Appraisal Board

## **Hewlett Packard Analytical Equipment**

*Electrical Engineer*

Summers 1988–1992

Projects included: software design in Mathematica to simulate pressure profiles in capillary columns under varying conditions; chromatographic pressure and flow control systems analysis; software design using Open Script to prototype an user interface design for a gas chromatograph; hardware design and implementation of digital pressure control board; characterization of micro-machined pneumatic devices; and design and manufacture of analog control loop circuit and its software for use in the testing product performance on the manufacturing assembly line.

## **PROFESSIONAL DEVELOPMENT**

Advance: Forward to Professorship, Gallaudet University, June 2010

Teaching and Learning with Technology Institute, VCU Center for Teaching Excellence, June 2010

Advance: Peer Mentoring Summit, California Institute of Technology, July 2009

Grace E. Harris Leadership Institute Leadership Development Program, VCU 2007

Women in Engineering Leadership Institute, Anaheim, CA, November 2005

NSF New Century Scholars Workshop Participant, Stanford University, August 2000

Leadership & Community-Building Workshop for Women Junior Faculty in Engineering, 2001, 2002

## **RESEARCH & SCHOLARLY ACTIVITIES**

### **Refereed Journal Publications**

1. R. Alkhasawaneh, **R. Hargraves**, "Developing a Hybrid Model to Predict Student First Year Retention in STEM Disciplines Using Machine Learning Techniques," *Journal of STEM Education*, vol. 15, no. 3, pp. 35-42, 2014.
2. J. Wu, A. Belle, **R. H. Hargraves**, C. Cockrell, Y. Tang, K. Najarian, "Bone Segmentation and 3D Visualization of CT Images for Traumatic Pelvic Injuries," *International Journal of Imaging Systems and Technology*, vol. 24, no. 1, pp. 29-38, 2014.
3. P. A. Nussbaum and **R. H. Hargraves**, "Pilot Study: The Use of Electroencephalogram to Measure Attentiveness towards Short Training Videos," *International Journal of Advanced Computer Science and Applications*, vol. 4, no. 3, pp. 176-182, 2013.
4. X. Qi, A. Belle, S. Shandilya, W. Chen, C. Cockrell, Y. Tang, K.R. Ward, **R.H. Hargraves**, K. Najarian, "Ideal Midline Detection Using Automated Processing of Brain CT Image" *Open Journal of Medical Imaging*, vol. 3, pp. 51-59, 2013.
5. Y. Luo, **R.H. Hargraves**, A. Belle, O. Bai, X. Qi, K.R. Ward, M.P. Pfaffenberger, K. Najarian, "A Hierarchical Method for Removal of Baseline Drift from Biomedical Signals: Application in ECG Analysis," *The Scientific World Journal*, vol. 2013, article ID 896056, 10 pages, 2013.
6. D.T. Nguyen, C.D. Nguyen, **R. Hargraves**, L.A. Kurgan, K.C. Cios, "mi-DS: Multiple-Instance Learning Algorithm" *IEEE Transactions on Systems, Man, and Cybernetics*, Part B, vol. 43, no. 1, pp. 143-154, 2013.
7. S.U. Demir, R. Hakimzadeh, **R. S. Hobson**, K.R. Ward, E. V. Myer and K. Najarian, "An automated Method for Analysis of Microcirculation Videos for Accurate Assessment of Tissue Perfusion" *BMC Medical Imaging*, vol. 12, no. 1, pp. 37, 2012.
8. A. Belle, **R.H. Hargraves**, K. Najarian, "An Automated Optimal Engagement and Attention Detection System Using Electrocardiogram" *Journal of Computational and Mathematical Methods in Medicine*, vol. 2012, article ID 528781, 12 pages, 2012.
9. P. Davuluri, J. Wu, A. Belle, Y. Tang, C. Cockrell, K. Ward, K. Najarian, and **R. Hargraves**, "Hemorrhage Detection and Segmentation in Traumatic Pelvic Injuries", *Journal of Computational and Mathematical Methods in Medicine*, vol. 2012, article ID 898430, 12 pages, 2012.

10. J. Wu, P. Davuluri, K. Ward, C. Cockrell, **R. Hobson** and K. Najarian "Fracture Detection in Traumatic Pelvic CT Images," *International Journal of Biomedical Imaging*, vol. 2012, article ID 327198, 10 pages, 2012.
11. N. Mirshahi, S. Demir, K. Ward, **R. Hobson**, R. Hakimzadeh, K. Najarian, "An Adaptive Entropic Thresholding Technique for Image Processing and Diagnostic Analysis of Microcirculation Videos," *International Journal on Advances in Life Sciences*, vol. 2, no. 3&4, 2010.
12. G. Slaughter, **R. Hobson**, "An Impedimetric Biosensor Based on PC12 Cells For the Monitoring of Exogenous Agents," *Biosensors and Bioelectronics*, vol. 24, no. 5, pp. 1153-1158, 2009.
13. **R. Hobson**, A. Clausi, T. Oh, A. Guiseppi-Elie, "Temperature Correction to Chemoresistive Sensors in an e-NOSE-ANN System," *IEEE Sensors Journal*, vol. 3, no. 4, pp. 484-489, 2003.

### Refereed Conference Publications

1. L.M. Waller, **R.H. Hargraves**, "Work In Progress - Everyday Engineering Discovery Program: Motivating Middle School Children Interest in STEM," in *Proceedings of ASEE Annual Conference and Exposition*, Seattle, WA, June 2015.
2. L. Ghaedi, R. Gottlieb, D.C. Sarrett, A. Ismail, A. Belle, K. Najarian, **R.H. Hargraves** "An automated dental caries detection and scoring system for optical images of tooth occlusal surface," in *Proceedings of IEEE EMBC 36<sup>th</sup> Annual International Conference*, Chicago, IL, August 2014.
3. K.W. Brinkley, F. Rankins, S. Clinton, **R.H. Hargraves**, "Keeping Up with Technology: Transitioning Summer Bridge into a Virtual Classroom," in *Proceedings of ASEE Annual Conference and Exposition*, Indianapolis, IN, June 2014.
4. K.W. Brinkley, R. Krack, **R. H. Hargraves**, "A Two Course Introductory Sequence for Chemical and Life Science Engineering," in *Proceedings of the 2014 ASEE Southeastern Section Conference*, Macon, GA, March 2014.
5. X. Qi, A. Belle, S. Shandilya, **R. Hargraves**, C. Cockrell, Y. Tang, K. Ward, K. Najarian, "Actual Brain Midline Detection using Level Set Segmentation," in *Proceedings of The Eighth International Multi-Conference on Computing in the Global Information Technology*, July 2013.
6. X. Qi, S. Shandilya, A. Belle, **R. Hargraves**, C. Cockrell, Y. Tang, K. Ward, K. Najarian, "Automated Analysis of CT Slices for Detection of Ideal Midline from Brain CT Scans" , in *Proceedings of The Eighth International Multi-Conference on Computing in the Global Information Technology*, July 2013.
7. S. Shandilya, X. Qi, K. Najarian, K. Ward, M. Kurz, **R. Hargraves**, "Finding an Optimal Model for Prediction of Shock Outcomes through Machine Learning" in *Proceedings of The Eighth International Multi-Conference on Computing in the Global Information Technology*, July 2013.
8. **R. Hobson**, C. Jong, D.J. Dockery, M. Hermann, T. J. Carter "Pilot Study: An Exploration of the Experiences that Influence Women's Interest, Pursuit, and Continued Involvement in STEM Careers" " in *Proceedings of ASEE Annual Conference and Exposition*, Atlanta, GA, June 2013.
9. X. Qi, A. Belle, S. Shandilya, K. Najarian, W. Chen, **R.H. Hargraves**, C. Cockrell, "Automated Intracranial Pressure Prediction Using Multiple Features Sources," in *Proceedings of International Conference on Information Science Application*, Pattaya, Thailand, June 2013.
10. P. Nussbaum, A. Herrera, R. Joshi, **R. Hargraves**, "Analysis of Viewer EEG Data to Determine Categorization of Short Video Clip" in *Proceedings of Complex Adaptive Systems Conference 2012*, Washington, D.C. November 2012.
11. P. Davuluri, J. Wu, A. Belle, Y. Tang, C. Cockrell, , K. Ward, **R. Hargraves**, and K. Najarian, "An Image Processing and Machine Learning Based Computer-Aided Decision Support for Traumatic Pelvic Injuries" in *Proceedings of 7th International Workshop on Biosignal Interpretation*, Como, Italy, July 2012.
12. A. Belle, M. Pfaffenberger, **R. H. Hargraves**, and K. Najarian, "An Automated Decision Making System for Detecting Loss of Attention in Individuals Using Real Time Processing of an

- Electroencephalogram" in *Proceedings of 7th International Workshop on Biosignal Interpretation*, Como, Italy, July 2012.
13. R. Alkhasawaneh, **R. Hargraves**, "Identifying significant features that impact URM students academic success and retention upmost using qualitative methodologies: focus group" in *Proceedings of ASEE Annual Conference and Exposition*, San Antonio, TX, June 2012.
  14. P. Davuluri, J. Wu, A. Belle, C. Cockrell, Y. Tang, K. Ward, K. Najarian and **R. Hargraves**, "A Hybrid Approach for Hemorrhage Segmentation in Pelvic CT Scans", *International Workshop on Biomedical and Health Informatics, BIBM*, Atlanta, GA, November 2011.
  15. A. Belle, **R. Hobson**, and K. Najarian, "A Physiological Signal Processing System for Optimal Engagement and Attention Detection" *International Workshop on Biomedical and Health Informatics, BIBM*, Atlanta, GA, November 2011.
  16. J. Wu, P. Davuluri, A. Belle, C. Cockrell, Y. Tang, K. Ward, **R. Hobson**, and K. Najarian, "Fracture detection and quantitative measure of displacement in pelvic CT images" *International Workshop on Biomedical and Health Informatics, BIBM*, Atlanta, GA, November 2011.
  17. S. Ansari, A. Belle, **R. Hobson**, K. Ward, K. Najarian, "Reduction of Periodic Motion Artifacts from Impedance Plethysmography.", *International Workshop on Biomedical and Health Informatics, BIBM*, Atlanta, GA, November 2011.
  18. P. Davuluri, J. Wu, K. Ward, C. Cockrell, K. Najarian, **R. Hobson**, "An automated Method for Hemorrhage Detection in Traumatic Pelvic Injuries" in *Proceedings of Engineering in Medicine and Biology Conference*, Boston, MA, August 2011.
  19. J. Wu, P. Davuluri, K. Ward, C. Cockrell, **R. Hobson**, K. Najarian, "A New Hierarchical Method for Multi-level Segmentation of Bone in Pelvic CT Scans" in *Proceedings of Engineering in Medicine and Biology Conference*, Boston, MA, August 2011.
  20. S.G. Adams, **R. S. Hobson**, "Solider to Engineer: Expediting the Pathway" in *Proceedings of ASEE Annual Conference and Exposition*, Vancouver, BC, June 2011.
  21. R. Alkhasawaneh, **R. Hobson**, "Modeling First-Year Students Retention at VCU Science and Engineering Disciplines Using Neural Networks," in *Proceedings of IEEE EDUCON*, Amman, Jordan, April 2011.
  22. J.F. Groves, S. Caraballo, **R.S. Hobson**, G.R. Scales, L. Vahala, "Work in progress - Transitioning an established engineering distance learning program infrastructure to an on-line instructional setting," in *Proceedings of Frontiers in Education Conference*, Arlington, VA, October 2010.
  23. G. Scales, S. Caraballo, , J. Groves, **R. Hobson**, L. Vahala, C. Amelink, "Implementing tablet PCs in a distance learning environment," in *Proceedings of ASEE Annual Conference and Exposition*, Louisville, KY, June 2010.
  24. R. Alkhasawaneh, **R. Hobson**, "Pre-College Mathematics Preparation: What works?" in *Proceedings of ASEE Annual Conference and Exposition*, Louisville, KY, June 2010.
  25. N. Mirshahi, S. Demir, K. Ward, **R. Hobson**, R. Hakimzadeh, K. Najarian, "A Multi-resolution Entropic-Based Image Processing Technique for Diagnostic Analysis of Microcirculation Videos, " *BIOTECHNO 2010*, Cancun, Mexico March 2010. (Best Paper Award)
  26. P. Davuluri, **R. Hobson**, M. Murphy, K. Najarian, "Performance Comparison of Volterra Predictor and Neural Network for Breathing Prediction," *BIOTECHNO 2010*, Cancun, Mexico March 2010.
  27. S. Demir, N. Mirshahi, K. Ward, **R. Hobson**, K.Najarian, "Vessel Extraction of Microcirculatory Video Recordings Using Multi-Thresholding Based Verification Algorithm," *BIOTECHNO 2010*, Cancun, Mexico, March 2010.
  28. R. Alkhasawaneh, **R. Hobson**, "Summer Transition Program: A Model for Impacting First Year Retention Rates for Underrepresented Groups," in *Proceedings of ASEE Annual Conference and Exposition*, Austin, TX, June 2009.
  29. S. Demir, N. Mirshahi, M. Tiba, G. Draucker, K. Ward, **R. Hobson**, K. Najarian, "Image Processing and Machine Learning for Diagnostic Analysis of Microcirculation," in *Proceedings of IEEE/CME International Conference on Complex Medical Engineering*, March 2009.

30. S. Adams, L. Perez, **R. Hobson**, I. St. Omer, "Globalizing Engineering Education: A Multi-Tiered, Multi-University Approach," in *Proceedings of 7<sup>th</sup> Annual ASEE Global Colloquium on Engineering Education*, Cape Town, South Africa, October 2008.
31. P. Davuluri, **R. Hobson**, C. Eley, S. Wong, "Prediction of Breathing Patterns Using Neural Networks," in *Proceedings of 85<sup>th</sup> Annual Meeting of the Virginia Academy of Science*, Harrisonburg Virginia, May 2007.
32. G. Slaughter, **R. Hobson**, "Artificial Neural Network for Temporal Impedance Recognition of Neurotoxins" in *Proceedings of International Joint Conference on Neural Networks World Congress on Computational Intelligence*, Vancouver, British Columbia, July 2006.
33. **R. Hobson**, "The Role of Engineering Education in International Development," in *Proceedings of ASEE Annual Conference and Exposition*, Chicago, IL, June 2006.
34. M. Morris, **R. Hobson**, "Neural Network Design of a Dishwasher Control Board" in *Proceedings of International Joint Conference on Neural Networks 2002 World Congress on Computational Intelligence*, Honolulu, HI, May 2002.
35. **R. Hobson**, R. Ahmed, N. Balderson, "Classification of Selected Arrhythmia Conditions Using Artificial Neural Networks," in *Proceedings of ANNIE*, St. Louis, MO, November 2001.
36. P. Polur, R. Zhou, J. Yang, F. Adnani, **R. Hobson**, "Isolated speech recognition using artificial neural networks," in *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society*, Istanbul, Turkey, October 2001.
37. H. Raju, **R. Hobson**, P. Wetzel, "Neural Network for Visual Search Classification," in *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society*, Istanbul, Turkey, October 2001.
38. **R. Hobson**, E. Hughes, "Utilization of Active Collaborative Learning in Three Electrical Engineering Courses," in *Proceedings of ASEE Annual Conference and Exposition*, Albuquerque, NM, June 2001.
39. **R. Hobson**, K. Burbank, "Richmond Area Program for Minorities in Engineering Summer Engineering Institute: A Program for Recruiting Minorities into Engineering," in *Proceedings of ASEE Annual Conference and Exposition*, Albuquerque, NM, June 2001.
40. **R. Hobson**, A. Guiseppi-Elie, "The Applicability of Temperature Correction to Chemoresistive Sensors in an e-NOSE-ANN System," in *Proceedings of Modeling and Simulation of Microsystems Conference*, Hilton Head, SC, pp. 314-317, March 2001.
41. **R. Hobson**, "The Changing Face of Classroom Instruction Methods: Service Learning and Design in a Robotics Course," in *Proceedings of Frontiers in Education Conference*, Kansas City, MO, October 2000.
42. **R. Hobson**, "Service-Learning as an Educational Tool in an Introduction to Engineering Course," in *Proceedings of ASEE Annual Conference and Exposition*, St. Louis, MO, June 2000.
43. **R. Hobson**, "A Spatio-temporal Artificial Neural Network for Object Recognition Using Bioacoustic Signals," in *Proceedings of Fourth International Conference on Cognitive and Neural Systems*, Boston, MA, May 2000.
44. **R. Hobson**, R. Inigo, "Hardware implementation of a neural network controller for a manipulator arm," in *Applications and Science of Artificial Neural Networks*, Steven K. Rogers, Dennis Ruck, Editors, *Proceedings SPIE*, vol. 2492, pp. 84-95, 1995.

#### Other Publications

1. K. Najarian, J. Wu, P. Davuluri, K. Ward, and **R. Hobson Hargraves**, "Automated computer-aided decision support for traumatic pelvic and abdominal injuries," SPIE Newsroom 2012  
<http://spie.org/x90360.xml>
2. S. Demir, N. Mirshahi, K. Ward, **R. Hobson**, K. Najarian, "Vessel Segmentation Based on Multi-Thresholding for Diagnostic Analysis of Microcirculation," *Circulation*, vol120:S1491, Abstract P226.

3. National Academy of Sciences, "The Fundamental Role of Science and Technology in International Development: An Imperative for the U.S. Agency for International Development," contributing consultant National Academies Press, May 2006.
4. P. Boland, P. Wetzel, **R. Hobson**, R. Pickler, "An Analysis of Feeding Behavior in Pre-mature Infants," in Proceedings of Virginia Academy of Sciences Meeting 2002, Hampton, VA, May 2002.
5. **R. Hobson**, "Robotics and Engineering Education at Virginia Commonwealth University: An overview of two classes at Virginia Commonwealth University in which robots are used to enhance the student's educational experience," Robots and Education Stanford AAAI Spring Symposium, Palo Alto, CA, March 26-28, 2001.
6. **R. Hobson**, R. Klenke, "The Design of an Intelligent Control System for Appliances," in Proceedings of NSF Design, Service and Manufacturing Grantees and Research Conference, Tampa, FL, January 2001.
7. **R. Hobson**, "Service- Learning: A Natural Extension of VCU's Commitment to Community Service: Service Learning in Engineering 101," VCU Teaching, Best Practices, March 1999.

### Patents

Najarian, K.; **Hobson, R.S.**; Ward, K.; Demir Kanik, S.; Mirshahi, N. 2014. Image processing and machine learning for diagnostic analysis of microcirculation. U.S. Patent #8,805,051, filed March 17, 2010, issued August 12, 2014.

### Invited Lectures and Seminars

1. *Invited Seminar Panelist*, "Pathways with an Engineering Ph.D.," Virginia Polytechnic Institute and State University, Blacksburg, VA, December 2015.
2. *Invited Seminar*, "Basic Grant Management," Virginia Commonwealth University, Richmond, VA, October, 2015.
3. *Invited Seminar*, "NSF Faculty Early Career Development (CAREER) Program – Education Component Opportunities," Virginia Commonwealth University, Richmond, VA, September, 2015.
4. *Invited Seminar*, "African Americans in STEM – The Myth, The Reality, The Opportunity," John Tyler Community College, Midlothian, VA, February 2015.
5. *Invited Seminar*, "STEM – The Bridge Between the Classroom and the Real World," Counselors Conference, Math Science Innovation Center, Richmond, VA, October 2014.
6. *Invited Seminar*, "Integrating STEM – Using Design, Imagination, and Creativity to Facilitate Connections," Loudon County Public Schools, Loudon County, VA, November 2014.
7. *Invited Speaker*, "What Makes The Difference – for Underrepresented Students Staying in STEM Majors," IAJC/ISAM 2014 Conference, Orlando, FL, September 2014.
8. *Invited Seminar*, "Spark Student Interest: Integrate Engineering into Your Science Teaching," with J. McDonough, National Science Teachers Association National Conference, Boston, MA, April 2014.
9. *Invited Seminar*, "What Makes The Difference – for Underrepresented Students Staying in STEM Majors," Armstrong Atlantic University, Savannah, GA, March 2014.
10. *Invited Seminar*, "NSF Faculty Early Career Development (CAREER) Program – Education Component Opportunities," Virginia Commonwealth University, Richmond, VA, November, 2013.
11. *Invited Seminar*, "Developing Successful Collaborative Partnerships," 2013 PVAMU/TAMU ADVANCE-PAID Professional Development Workshop, Houston, TX, May 2013.
12. *Invited Lecture*, "International Collaborations at VCU: Working together to address global issues," University of Johannesburg, October 2010.
13. *Invited Seminar*, "Introduction to Neural Networks and Their Applications," University of the Witwatersrand, Johannesburg, South Africa, August 2002.

14. *Invited Seminar*, "Grant Proposal Writing Workshop," National Society of Black Engineers National Conference, March 2001.
15. *Invited Seminar*, "Introduction to Neural Networks and Their Applications," National Society of Black Engineers Region II Professional Development Conference, October 2000.
16. *Invited Seminar*, "A Spatio-temporal Artificial Neural Network for Object Recognition Using Bioacoustic Signals," Massachusetts Institute of Technology Lincoln Laboratory, May 2000.
17. *Invited Seminar*, "Introduction to Neural Networks and Their Applications," Massey Cancer Research Center, Richmond, Virginia, March 2000.
18. *Invited Seminar*, "Strategies for Obtaining Your Graduate Degree," National Society of Black Engineers National Conference, Charlotte, North Carolina, March 2000.
19. *Invited Seminar*, "Grant Proposal Writing Workshop," National Society of Black Engineers National Conference, March 2000.
20. *Invited Seminar*, "Strategies for Obtaining Your Graduate Degree," Society of Women Engineers Richmond Section, January 2000.
21. *Invited Seminar*, "An Artificial Neural Network for Object Recognition Using Bioacoustic Signals," Virginia Commonwealth University Department of Anatomy Seminar Series, September 1999.
22. *Invited Lecture*, "Service Learning in the Sciences, Mathematics, and Engineering Technology," Virginia Commonwealth University, October 1998.
23. *Invited Lecture*, "State Machine Technology in the Design of Control Systems," Siebe Appliance Controls Cooking and Refrigeration Division, August 1998.
24. *Invited Lecture*, "State Machine Technology in the Design of Control Systems," Siebe Appliance Controls, August 1998.

#### **Funded Research**

1. **R. Hargraves** (PI), J. McDonnough (co-Investigator), "VCU Health Education and Research Opportunities for Teachers (HERO-T)," National Institutes of Health, July 2015 – June 2020 (\$488,976).
2. T. Dozier (PI), N. Alder (senior personnel), C. Batalo (senior personnel), A. Cherry (senior personnel), D. Currie (senior personnel), **R. Hargraves** (senior personnel), R. Reid (senior personnel), E. Waddel (senior personnel) "Richmond Teacher Residency (RTR) 2.0," U.S. Department of Education, October 2014 – September 2019, (\$7,499,637).
3. S. Wu-Pong (PI), S. Barbour (co-PI), **R. Hargraves** (co-PI), W. Kozurn (co-PI), J. Lloyd (co-PI), V. Shivy (co-PI), "Broadening Experiences in Scientific Training (BEST) Program," Virginia Commonwealth University, January 2014 – May 2015, (\$50,000).
4. J. McDonnough (PI), **R. Hobson** (co-PI), C. Trinter (co-PI), "Phase II Virginia Commonwealth University Noyce Initiative," National Science Foundation, September 2013 – August 2018, (\$799,719).
5. **R. Hobson** (VCU PI), "The Virginia – North Carolina Alliance for Minority Participation Mid-Level Grant," National Science Foundation sub-award from the University of Virginia, September 2012 – August 2017, (\$325,080). Total award to the University of Virginia \$3,500,000.
6. G. Fraser (PI), D. Bach (co-PI), S. Black (co-PI), R. Ford (co-PI), M.J. Peña Harden (co-PI), **R. Hobson** (co-PI), C. Vallas (co-PI), "Women in STEM: Engaging Across Difference," National Science Foundation sub-award from George Washington University, July 2010-August 2011 (\$15,000).
7. R. Hakimzadeh (PI), **R. Hobson** (Chief Technology Officer), "SBIR Phase I: An Automated Data Mining System for Analysis of Microcirculation Videos," National Science Foundation SBIR Award to Signal Processing Technologies LLC, January 2011 – June 2011, (\$150,000)
8. G. Tepper (PI), **R. Hobson** (co-PI), R. Jamison (co-PI), "VCU Nuclear Engineering Faculty Development Program," Nuclear Regulatory Commission, June 2010 – May 2013, (\$450,000).



9. **R. Hobson** (PI), A.L. Throckmorton (co-PI), "Interdisciplinary Graduate Engineering Education and Research (I-GEEAR)," Department of Education, August 2009 – August 2015, (\$653,280).
10. S.G. Adams (PI), **R. Hobson** (co-PI), "Soldier to Engineer: Planning VCU's Pathway," National Science Foundation, August 2009 – July 2011, (\$108,115).
11. S.G. Adams (PI), **R. Hobson** (co-PI), "da Vinci Scholarship Program: Promoting the Integration of Engineering, Business, & Art to Inspire Ingenuity," National Science Foundation, July 2009 – June 2016, (\$599,138).
12. **R. Hobson** (VCU PI), "The Virginia – North Carolina Alliance for Minority Participation," National Science Foundation sub-award from the University of Virginia, May 2007 – April 2013, (\$485,000). Total award to the University of Virginia \$4,961,174.
13. **R. Hobson** (PI), "USAID/USDA The Role of Science and Technology in International Development," U.S. Agency for International Development, September 2004 – May 2006, (\$91,520).
14. **R. Hobson** (PI), S. Guerlain (co-PI), "Advance Leadership Award, Leadership Skills and Community Building Program for Junior Women Engineering Faculty," National Science Foundation, October 2003 – September 2009, (\$158,075).
15. **R. Hobson** (PI), "Virginia Commonwealth University and the University Witwatersrand: Summer Research Experience," National Science Foundation, May 2003 – April 2009, (\$196,119).
16. **R. Hobson** (PI), K. Battle (co-PI), "Virginia Commonwealth University and the University Witwatersrand: A Partnership for the Future," National Science Foundation, July 2002 – January 2003, (\$3,216).
17. D. Simon (PI), C. Adeyami (co-PI), J. Bibby (co-PI), A. Ellington (co-PI), R. Farley (co-PI), **R. Hobson** (co-PI), "Gear-Up for College Summer Enrichment Program," Richmond Public Schools, June 2002 – August 2002, (\$33,341).
18. T. M. Cameron (PI), **R. Hobson** (co-PI), G.S. Huvard (co-PI), "Multidisciplinary Dynamic Systems Curriculum," National Science Foundation Division of Undergraduate Education CCLI Grant, March 2001 – March 2003, (\$90,453).
19. **R. Hobson** (PI), R. H. Klenke (co-PI), T. Matt (co-PI), M. Gaston (co-PI), "NSF GOALI: The Design of an Intelligent Control System for Appliances," National Science Foundation Design, Manufacture, and Industrial Innovation, September 1, 1999-August 31, 2002, (\$160,904).
20. **R. Hobson** (PI), R. H. Klenke (co-PI), "The Design of an Intelligent Control System for Appliances," Siebe Appliance Controls, Richmond, Virginia, June 1, 1999-September 29, 2002, (\$171,281).
21. **R. Hobson**, "Incorporating Service Learning Into Engineering Education, ENGR 101," Virginia Commonwealth University Service Learning Associates Program, August 1998–May 1999, (\$2,000).
22. **R. Hobson**, "Travel Grant from Campus Compact, Case Western Reserve University and VCU to attend the National SEAMS Faculty Institute, Integrating Service into the Undergraduate Science, Engineering and Mathematics Curriculum, March 1998, (\$1,000).
23. **R. Hobson**, "University of Virginia NSF-GEE Project: Increasing the number of Minorities Earning Doctorate Degrees in Engineering," National Science Foundation Graduate Engineering Education, August 1994 – May 1996, (\$40,000).

## TEACHING

### Courses Developed and Taught at Virginia Commonwealth University

1. Introduction to Electrical Engineering
2. Introduction to Engineering and Laboratory (course director Fall 1997)
3. Introduction to Engineering Service Learning Section and Laboratory
4. Digital Logic Design and Laboratory

5. Process and Systems Dynamics
6. Signals and Systems
7. Robotics
8. Automatic Controls and Laboratory
9. Special Topics: FIRST Robotics Service-Learning
10. Control Systems Design
11. Special Topics: Neural Networks
12. Artificial Neural Networks
13. Professional Specialty Seminar: Physical Sciences and Engineering
14. Engineering for the K-12 Classroom - modules

**Courses taught at the University of Virginia**

1. Robotics Laboratory
2. Controls Laboratory

**Student Research and Design Project (Supervised/co-Supervised):**

*Virginia Commonwealth University Doctoral Student:*

1. L. Ghaedi, Automated Caries Detection and Scoring Using Intraoral Images, August 2014
2. P. Nussbaum, A Physiological Signal Processing System for Optimal Engagement and Attention, December 2013
3. D. Nguyen, Extending Classical Rule Learners into Multiple-Instance Learning and One-class learners, May 2013
4. P. Davuluri, Image Segmentation and Analysis for Automated Classification of Traumatic Pelvic Injuries, December 2012
5. J. Wu, Segmentation and Fracture Detection in CT Images for Traumatic Pelvic Injuries, May 2012
6. N. Mirshahi, Entropic-Based Image Processing Technique for Diagnostic Analysis of Microcirculation Videos, December 2011
7. R. Alkhasawaneh, Developing a Hybrid Model to Predict Minority Student First Year Retention in STEM Disciplines, August 2011
8. S. Demir, Image Processing Algorithms for Diagnostic Analysis of Microcirculation, August 2010
9. G. Slaughter, Artificial Neural Network Temporal Impedance Recognition of Neurotoxins, May 2005

*Virginia Commonwealth University Master's Student:*

1. A. Herrera, Automated Monitoring of Affective State of Students, 2010-2014
2. A. AlKazzaz, Predicting and Classifying Packet Transmission Efficiency in Bio-Inspired Wireless Sensor Networks, August 2014
3. C. Ruiz Mongui, Artificial Neural Networks for Assessing Teamwork, May 2013
4. R. Joshi, Design of a Wireless Brain Controlled Switch, December 2012
5. B. Sirisha Chitrapu, Neural Network Applications, December 2009
6. P. Davuluri, Prediction of Breathing Patterns using Neural Networks, May 2008
7. K. Fields, Neural Network Approach to Semiconductor Die Level Classification Using Compressed Using Compressed Chip Fail Data, May 2004
8. G. Ferguson, Speech Recognition Using Artificial Neural Networks, May 2003
9. M. Morris, Neural Network Implementation of a Dishwasher Controller, 2000-2002

*Virginia Commonwealth University Undergraduate Projects (including Capstone Projects):*

1. C. Eley, K. Fedosh, B. Jensen, and F. Boateng, 2006-2007
2. J. Giuseppe, S. Hunter, M. Jones, and A. Smith, Summer 2006
3. R. Mahajan, N. Eltahir, D. Ferragut and N. Varnado, Summer 2005
4. K. Dyke, J. McBride, J. Kasak, and S. Rigsbee, Summer 2003
5. M. Baedke, T. Felate, S. Yacob, 2002-2003
6. C. Dauley, M. Sisk, G. Taylor, Y. Tefera, 2002-2003
7. I. Kahana, D. Lewis, S. Rigsbee, Summer 2002
8. K. Hiegel, D. Nguyen, K. Nguyen, K. Sisk, L. Hogge, 2001-2002
9. J. Light, C. Nguyen, A. Pauls, S. Johnson, C. Francabandera, 2001-2002
10. N. Patel and K. Yu, 2001
11. S. Daniels and A. Dunn, 2000-2001
12. D. Sena, Summer 2000
13. D. Shneyder and M. Morris, 1999-2000
14. D. Grammer and M. Morris, Summer 2000
15. O. Daniel and F. Harhara, 1999-2000
16. L. Myint, 1999-2000
17. B. Abbott and C. Woodruff, Summer 1999

*University of Virginia Undergraduate Projects (including Capstone Projects):*

1. Chris Langhorne, NASA Undergraduate Research Grant, 1997-1998
2. Jennie R. Powell, May 1995
3. Nicale L. Whitehead, May 1995

**PROFESSIONAL ACTIVITIES AND SERVICE:**

**Professional Society Memberships:**

American Society for Engineering Education, 1999-present  
Institute for Electrical and Electronics Engineers, 1997-present  
International Neural Network Society, 2000 – 2003, 2007-2009  
American Association for the Advancement of Science, 2003-2005  
American Association for Artificial Intelligence, 2000-2002  
National Society of Black Engineers, 1988–1991, 2004-2009  
Society of Women Engineers, 1990-1991, 2001-2009  
Society of Women Engineers Richmond Section President, 2006-2008  
Engineers for Education, 1992–1995, Director 1993–1994

**Professional Service:**

6<sup>th</sup> Annual VA-NC Alliance for Minority Participation Symposium Organizing Committee 2012-2013  
Society of Women Engineers 2008 Region E Conference “Women Engineering a Sustainable Future”  
Planning Committee  
Society of Women Engineers Richmond Section 2002 Professional Development Conference: Co-organizer  
American Association for the Advancement of Science Fellowship Selection Committee, 2006-2008

**National Academies Service:**

National Academy of Sciences Roundtable on Science and Technology for Sustainability, 2005–2008  
Member, National Academy of Engineering Committee on Engineering Education, 2001-2003

**Advisory / Review Boards:**

Mary and Frances Youth Center Advisory Council, 2015 - present  
American Association for the Advancement of Science Fellowship Advisory Committee, 2015 - present  
WCVE Science Matters Leadership Team, 2015 - present  
Reviewer for AAAS Science Fellowship Program, 2015  
Reviewer for 100kin10 Engineering Fellowship Program, 2015  
Math Science Innovation Center Advisory Board, 2012-present  
Reviewer for AAAS Science Fellowship Program, 2015  
Reviewer for Virginia State Department of Education, 2012  
Rehabilitation Research and Training Center NSF STEM-GI Bill Grant Technical Workgroup, 2012-2015  
Prairie View A&M-Texas A&M Advance Grant Advisory Board, 2010-2014  
Virginia FIRST Advisory Board, 2012-present  
STEM Advisory Council of Richmond's Future, 2011-2013  
Martin Luther King Living History and Public Policy Center Board of Trustees, 2010-2015  
Reaching Every Area Caring for Humanity Board of Directors, 2005-2010  
Richmond Area Program for Minorities in Engineering Board of Directors, 1997–2008  
Chantilly Academy Girls Exploring Engineering Advisory Board, 2007-2008  
Richmond Community High School Board of Directors, 2002–2007  
Reviewer for 2002 International Joint Conference on Neural Networks  
Reviewer for 2003 World Congress on Computational Intelligence  
Reviewer for ASEE ERM Division and MIND Division  
Reviewer for IEEE Transactions on Neural Networks  
Reviewer for National Science Foundation  
Accreditation Technical Reviewer for the State Council for Higher Education in Virginia: ITT-Technical Institute Norfolk, Virginia, ITT-Technical Institute Richmond, Virginia, August 1999, October 1999  
Science Mathematics and Engineering Technology Advisory Committee of Campus Compact, 1998-2001  
Richmond INROADS Board of Directors: Chair of the Students Services, Support and Satisfaction Committee, 1998–2003  
Agape Christian Academy Board of Directors, 2002-2004

**Invited Speaking Engagements:**

1. *Invited Speaker*, “Girls Rule the World Engineering Makes it Better,” Girls Innovate Program, St. Catherine’s School, Richmond, VA October 2015.
2. *Invited Panelist*, “Putting a Face to a Statistic: A Panel of Women of Color in Academia,” Women in Engineering ProActive Network Change Leader Forum Plenary, Broomfield, CO, June 2015.
3. *Keynote Speaker*, “Integrating stEm – Using Design, Imagination, and Creativity to Facilitate Connections and Motivate Children,” Virginia Children’s Engineering Council Convention, Williamsburg, VA, February 2015.

4. *Keynote Speaker*, "Girls Rule the World Engineering Makes it Better," Girls In Science Camp-In, Science Museum and Virginia, Richmond, VA, October 2014.
5. *Keynote Speaker*, "The Road Less Travelled," Richmond Area Program for Minorities in Engineering Welcoming Ceremony, Virginia Commonwealth University, June 2014.
6. *Keynote Speaker*, "Integrating STEM – Using Design, Imagination, and Creativity to Facilitate Connections," Virginia Science Education Leadership Association Spring Meeting, Richmond, VA May 2014.
7. *Invited Panelist*, "Regional STEM Initiatives that Work" 2<sup>nd</sup> Governor's STEM Summit, Richmond, Virginia, September 2013.
8. *Invited Panelist*, "University Panel: Engineering Majors: Opportunities, Expectations, and Requirements," Engineering Fields II A School Counselor's Guide, Richmond, Virginia, April 2013.
9. *Invited Panelist*, "How STEM Transforms Regional Economies?" Workforce Boardroom Conference: A New Forum for Economic Developers!, Richmond, Virginia, September 2012.
10. *Keynote Speaker*, "The Road Less Travelled," Virginia North Carolina Alliance Fourth Annual Symposium, University of Virginia, April 2011.
11. *Invited Panelist*, "Research: Talking the Talk and Walking the Walk," Virginia Commonwealth University, February 2011.
12. *Invited Panelist*, "AAAS Former Fellows Academic Administration Careers Panel," American Association for the Advancement of Science, Washington, D.C., December 2010.
13. *Invited Panelist*, "Race and Gender Matters: Building a Diverse Science, Technology and Engineering Community," Media, Democracy, and Diversity Conference, University of Virginia April 2010.
14. *Invited Speaker*, "Making the Most of Your Life," Norfolk State University School of Engineering Senior Seminar Series, November 2009.
15. *Invited Panelist*, "Career Paths to Engineering," Math Science Innovation Center, August 2009.
16. *Invited Speaker*, "Virginia Commonwealth University and the University of the Witwatersrand: A Partnership for the Future through an Engineering Summer Research Experience," NSF Conference on U.S.- African University Partnerships, Cape Town, South Africa, October 2008.
17. *Invited Speaker*, "Engineering, Yesterday, Today, and Tomorrow," VCU American Studies Program July 2008.
18. *Keynote Speaker*, "SWE - Women in Engineering – The Few, The Proud, The Accomplished," Naval Surface Warfare Center – Dahlgren Division, National Women's History Month 2008 Observance, March 2008
19. *Invited Presenter*, "Prediction of External Breathing Signals Using Neural Networks, 2007 Real-time Motion Adaptive Radiation Therapy Workshop," Georgetown University, May 2007.
20. *Invited Panelist*, "Society of Women Engineers: Trailblazers: Seeing Opportunities Not Obstacles," SWE Hampton Roads Section, April 2007.
21. *Keynote Speaker*, VCU National Society of Black Engineers Annual Awards Banquet, May 2005.
22. *Keynote Speaker*, Colorado State University Women and Minorities in Engineering Program 15<sup>th</sup> Annual Awards Banquet, September 2004.
23. *Invited Speaker*, "New Dimension in Education, Alternatives to the Traditional Delivery Systems: Can Technology Forge a New Paradigm for Education?," The 24<sup>th</sup> Annual Conference on the Black Family, March 2002.
24. *Invited Speaker*, "Providing Service Beyond Your Job," with Annika Fischer, Society of Women Engineers Richmond Section Professional Development Conference, March 2002.
25. *Keynote Speaker*, St Catherine's School Cum-Laude Program, April 2001.
26. *Keynote Speaker*, National Society of Black Engineers National Conference: Faculty and Graduate Student Reception, March 2001.

27. *Invited Presentation*, "Minority Recruiting and Retention at the University of Virginia," 2000 ASEE Annual Conference and Exposition, St. Louis, Missouri, June 2000.
28. *Keynote Speaker*, "Bridging the Gap: Minorities in Technology," Hampton University School of Engineering Annual Banquet, April 2000.
29. *Invited Panelist*, "African American Women Faculty in Engineering: the Obstacles-the Rewards," Black Women in the Academy Conference June 1999.
30. *Invited Participant*, "Enabling and Inhibiting Factors for Obtaining Tenure," Black Women in the Academy Conference June 1999.
31. *Keynote Speaker*, Cooperative Hampton Roads Organizations for Minorities in Engineering 15<sup>th</sup> Student Teacher Annual Recognition Symposium, December 1998.
32. *Invited Speaker*, Richmond Area Program for Minorities in Engineering Opening Ceremony, June 1998.

**University Committees:**

Provost Search Committee, 2014  
 Faculty Senate, School of Education Representative, 2013-2014, 2015-present, Honorary Senator 2014-2015  
 Faculty Senate Leadership Team, 2014-present  
 Interdisciplinary Research Committee, 2012-2013  
 Great Place Initiative Steering Committee, 2012-2015  
 School of Education Dean Search Committee, 2011-2012  
 Associate Vice Provost for Faculty Development Search Committee, 2012  
 Provost Search Committee, 2010-2011  
 VCU 2020 Recalibration Sub-Committee Theme I Working Group, 2010-2011  
 VCU Organizational Assessment Steering Committee, 2010-2011  
 Professional Science Masters in Bioinformatics Advisory Committee, 2010-present  
 Advisory Committee on Online Teaching and Learning co-chair, 2009-2010  
 Preparing Future Faculty Program Advisory Board, 2009-present  
 Presidential Search Committee vice-Chair, 2008-2009  
 University Academic Regulations Committee, 2008-present  
 Commonwealth Graduate Engineering Program Director, 2007-2013  
 Graduate Directors Academic Council, 2007-2012  
 School of Engineering Dean Search Committee, 2005-2006  
 Vice Provost for Academic Affairs Search Committee, 2002  
 University Benefits Committee, 2001-2003  
 Women's Studies Advisory Committee, 2000-2008  
 Center for Teaching Excellence Advisory Committee, 2000-2003  
 Affirmative Action 504 Advisory Committee, 1998-2000  
 School of Engineering Dean's Search Committee, 1998  
 Student Success Task Force, 1997-1998

**School and Departmental Committees:**

School of Education Department of Teaching and Learning Secondary Faculty Search Committee, 2015-2016  
 STEM Program Group Chair, 2015-2016

School of Education Urban Cluster Search Committee Co-Chair, 2014-2015  
School of Engineering ECE Chair Search Committee, 2014  
School of Engineering Director of Undergraduate Research Search Committee Chair, 2014  
School of Engineering CLSE Laboratory Manager Search Committee, 2014  
VCU Life Sciences Promotion and Tenure Peer Review Committee, 2014-2015  
School of Education Scholarship Committee, 2014  
Faculty Search Committee Computer Engineering, 2014  
School of Education Promotion and Tenure Peer Review Committee, 2013  
School of Education New Building Leadership Committee, 2013  
School of Engineering FIRST Scholarship Selection Committee, 2013  
School of Education Associate Dean Search Committee, 2012-2013  
Teaching and Learning VISTA Curriculum Specialist Search Committee, 2012-2013  
School of Engineering Thesis and Dissertation Award Selection Committee, 2102  
Schools of Education and Engineering Excellence Hire Search Committee, 2011  
School of Engineering Diversity Committee Chair, 2011-2012  
School of Engineering Online Teaching and Learning Committee Chair, 2009-2011  
School of Engineering Graduate Academic Committee Chair, 2007-2012  
Faculty Search Committee Computer Science, 2007, 2009  
School of Engineering Sr. Associate Dean for Research Search Committee, 2007  
School of Engineering Administration and Facilities Search Committee, 2007  
Computer Science Chair Search Committee, 2004-2005  
Electrical Engineering Curriculum Committee, 1999-2002  
Organizer of the VCU School of Engineering Workshop on Sensors, Signal Processing, and Neural Network Fundamentals, Technology and Applications, May 2000  
Organizer of African American Scientist and Engineers Speaker Series, February 2000  
Technical Organizer of VCU Student Participation in US First Robotics Competition, 2000  
Electrical Engineering Department Chair Search Committee, 1999-2000  
Student Support Services Task Force Chair, 1999-2001  
Faculty Search Committee Mechanical Engineering, 1998-2001  
Faculty Search Committee Electrical Engineering, 1996-2001, Chair, 1999-2001  
Pre-Engineering Program Task Force, 1997-1998  
Faculty Advisor Society of Women Engineers VCU Chapter, 1997-1999, 2010 - present  
Faculty Advisor National Society of Black Engineers VCU Chapter, 1996-2000  
Electrical Engineering Curriculum Development Committee: 1996-2003  
Faculty Evaluation Committee Chair, 1996-1999

#### **HONORS AND AWARDS:**

VCU Presidential Awards for Community Multicultural Enrichment 2015  
VCU Riese-Melton Award 2015  
Dominion Strong Men & Women Excellence in Leadership Award 2008  
Richmond Joint Engineers Council 2006 Engineer of the Year  
American Association for the Advancement of Science Diplomacy Fellow 2003-2004  
National Society of Black Engineer's 2001 Dr. Janice A. Lumpkin, Educator of the Year Award

Frontiers in Education New Faculty Fellow October 2000  
National Science Foundation Graduate Engineering Education Fellowship 1994-1996  
UVA Edgar A. Starke, Jr. Award, 1994-1995 & 1996-1997  
Department of Electrical Engineering Outstanding Graduate Teaching Assistant Award, 1994, 1995  
Eta Kappa Nu Electrical Engineering Honor Society, elected 1993  
The Raven Society University of Virginia Honor Society, elected 1993  
Virginia Engineering Foundation Scholarship, 1987-1991  
Office of African American Affairs Leadership Award, 1990  
Recognition by Virginia Engineering Foundation for Outstanding Service, 1990