Curriculum Vitae
Michael T. Johnson

Professor and Chair
University of Kentucky Department of Electrical and Computer Engineering,
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CURRICULUM VITAE EXECUTIVE SUMMARY

Publications: **38 journal papers, over 100 refereed publications/presentations**
Citations ≈1500, h-index 20, i10-index 38 (per Google scholar)

Grant funding: **5 major grants, over $2.5 million in total external funding**
Multi-institution, interdisciplinary, international collaborations

Students: **6 PhD graduates, 11 MS graduates**

Leadership roles: **UK ECE Department Chair (2016-present)**
Chair of MU Board of Graduate Studies (2012-2016)
Director of Marquette Speech and Signal Processing Lab (2000-2016)
Director of Graduate Studies, EECE (2009-2012)
Senior Visiting Professor, Tsinghua University (2008-2009, 2014-2015)
Engineering Manager (1993-1996)

Honors: **Featured in "Groundbreaking Thinkers in Wisconsin" series 2007**
Marquette COE Researcher of the Year 2006-2007
Engineers and Scientists of Milwaukee Young Engineer of the Year 2006
HKN EECE Teacher of the year 2005, 2014

RESEARCH SPECIALIZATION

- Speech Processing: speech recognition and enhancement, natural language processing
- Signal Processing: bioacoustics, microphone array processing, signal enhancement
- Pattern Recognition and Machine Learning: statistical estimation and classification

EDUCATION

Doctor of Philosophy, School of Electrical and Computer Engineering, August 2000
Purdue University, West Lafayette, IN   GPA: 4.00/4.00
"Incorporating Prosodic Information and Language Structure into Speech Recognition Systems"
Advisor: Dr. Leah H. Jamieson

Master of Science in Electrical Engineering (concentration Digital Signal Processing), Dec. 1994
University of Texas at San Antonio, San Antonio, TX   GPA: 4.00/4.00
"An Adaptive Texture Model Based on Markov Random Fields"
Advisor: Dr. Mita Desai

Bachelor of Science, Engineering with Electrical Concentration, April 1990
LeTourneau University, Longview, TX   GPA: 3.60/4.00

Bachelor of Science, Computer Science and Engineering with minor in Mathematics, April 1989
LeTourneau University, Longview, TX   GPA: 3.57/4.00

ACADEMIC WORK EXPERIENCE

8/2016 – present University of Kentucky, Lexington, KY

- *Department Chair, Electrical and Computer Engineering* (2016-present)
- *Full Professor, Electrical and Computer Engineering* (2016 - present)

8/2000 – 8/2016 Marquette University, Milwaukee, WI

- *Full Professor, Electrical and Computer Engineering*: (2013 - 2016)
- *Director of Graduate Studies, Electrical and Computer Engineering*: (2009 - 2012)
- *Associate Professor with Tenure, Electrical and Computer Engineering* (2007 – p2009)
- *Assistant Professor, Electrical and Computer Engineering*: (2000 – 2007)

2008-2009 and 2014-2015 Tsinghua University, Beijing, China (two 1-year sabbaticals)

- *Senior Visiting Faculty, Electronic Engineering Dept.* While on sabbatical, taught courses and collaborated on research in speech processing with Prof. Liu Jia.

9/1996 – 8/2000 Purdue University, West Lafayette, IN

- *Graduate Research Assistant, Audiology Dept.:* (5/97 to 5/00) Research focused on studying the consistency of speech articulator movement in children and young adults.
- *Graduate Research Assistant, ECE Dept.:* (1/97 to 1/98) Part of an NSF-funded research grant working on interfacing speech recognition and language processing systems.
- *Teaching Assistant, ECE Dept.:* (9/96 to 12/96 and 1/98 to 5/98) Assisted with a course in Speech Processing and taught a laboratory course in Digital Circuits.

1/1993 - 9/1993 University of Texas at San Antonio, San Antonio, TX

- *Graduate Research Assistant, UTSA Image Processing Lab:* Did research in the field of biological image processing as part of masters thesis in mammogram image analysis.

INDUSTRIAL WORK EXPERIENCE

9/1993 - 7/1996 SNC Manufacturing, Oshkosh, WI

- *Engineering Manager, Telecommunications Division (11/94 - 7/96):* Responsible for all new and existing product lines, including design, project management, and personnel.
- *Senior Engineer (9/93-11/94):* Project lead for new products, primarily in the area of SNC's Lyte Lynx line of fiber-optic interfaces for high-voltage environments.

9/1991 - 1/1993 Datapoint Corporation , San Antonio, TX

- *Engineer II*: Hardware engineer on the ArcnetPlus networking and MINX videoconferencing projects. Lead engineer on the PC HUB project for ArcnetPlus.

5/1990 - 9/1991 Micronyx, Inc. / Micro Technology Services, Inc., Richardson, TX

- *Design Engineer:* Telecommunications and embedded microprocessors design, at both hardware and software levels, for Micronyx and its spin-off company MTSI.

5/1989 - 8/1989 GTE , Ft. Wayne, IN *Engineering Intern:* Designed circuits for Business Services, including a project restructuring an analog phone system into a digital carrier system.

6/1988 - 8/1988 NBS , Ft. Wayne, IN *Electrical Technician:* Gained experience with troubleshooting circuit boards, soldering, and designing and building test equipment.

PUBLICATIONS

<u>Peer-reviewed Journal Publications</u>

1. Xu-Kui Yang, Liang He, Dan Qu, Wei-Qiang Zhang, Michael T Johnson, Semi-supervised feature selection for audio classification based on constraint compensated Laplacian score, EURASIP Journal on Audio, Speech, and Music Processing, 1, 2016, 1-10.

2. Wei-Qiang Zhang, Cong Guo, Qiao Zhang, Jian Kang, Liang He, Jia Liu, and Michael T. Johnson，A Speech Enhancement Algorithm Based on Computational Auditory Scene Analysis. Journal of Tianjin University, in press, 2015.
(Chinese journal. Original language citation: 张卫强，郭璁，张乔，康健，何亮，刘加，and Michael T. Johnson, 种基于计算听觉场景分析的语音增强算法，天津大学学报.)

3. B.T.W. Bochera, K. Cherukurib, J.S. Makib, M. Johnsonc, D.H. Zitomer, Relating methanogen community structure and anaerobic digester function, Water Research, 70 (1), March 2015, 425-435.

4. PM Scheifele, MT Johnson, M Fry, B Hamel, K Laclede, Vocal classification of vocalizations of a pair of Asian Small-Clawed otters to determine stress, The Journal of the Acoustical Society of America, 138 (1), EL105-EL109, 2015.

5. Liu Wei-Wei,Cai Meng, Zhang·Wei-Qiang Zhang, Liu Jia, Johnson Michael T., "Discriminative Boosting Algorithm for Diversified Front-End Phonotactic Language Recognition," Journal of Signal Processing Systems, May 2015.

6. Trawicki, Marek B. and Johnson, Michael T., "Beta-order minimum mean-square error multichannel spectral amplitude estimation for speech enhancement", International Journal of Adaptive Control and Signal Processing, January 2015.

7. Arik Kershenbaum, Daniel Blumstein, Marie Roch, Michael T. Johnson, et. al., Acoustic sequences in non-human animals: a tutorial review and prospectus, Biological Reviews, 2014.

8. C Yu, KK Wójcicki, PC Loizou, JHL Hansen, MT Johnson, "Evaluation of the importance of time-frequency contributions to speech intelligibility in noise", *The Journal of the Acoustical Society of America*, vol. 135, no. 5, May 2014, 3007-3016.

9. Marek B. Trawicki, Michael T. Johnson , "Speech enhancement using Bayesian estimators of the perceptually-motivated short-time spectral amplitude (STSA) with Chi speech priors", *Speech Communication*, vol. 57, no. 2, February 2014, pp101-103.

10. Liu Weiwei, Zhang Weiqiang, Johnson Michael T., Liu Jia, "Homogenous ensemble phonotactic language recognition based on SVM supervector reconstruction", EURASIP Journal on Audio, Speech, and Music Processing vol. 2014 no. 1, January 2014, pp 1-13.

11. Junhong Zhao, Wei-Qiang Zhang, Hua Yuan, Michael T Johnson, Jia Liu, Shanhong Xia, "Exploiting contextual information for prosodic event detection using auto-context", *EURASIP Journal on Audio, Speech, and Music Processing*, vol. 2013, no. 1, December 2013 pp 1-14.

12. Marek B. Trawicki, Michael T. Johnson , "Distributed multichannel speech enhancement based on perceptually-motivated Bayesian estimators of the spectral amplitude", *IET Signal Processing*, vol. 7, no.4, April 2013, pp. 337-344.

13. An Ji, Michael T. Johnson, Edward J. Walsh, JoAnn McGee, Doug L. Armstrong, Discrimination of individual tigers (Panthera tigris) from long distance roars, *The Journal of the Acoustical Society of America*,vol. 133 no. 3, March 2013, pp1762-1769.
14. Yongzhe Shi, Weiqiang Zhang, Jia Liu, Michael T. Johnson, "RNN language model with word clustering and class-based output layer", *EURASIP Journal on Audio, Speech, and Music Processing* vol. 2013 no. 1, January 2013, pp1-7.
15. Peter M. Scheifele, Michael T. Johnson, David C. Byrne, John G. Clark, Ashley Vandlik, Laura W. Kretschmer, Kristine E. Sonstrom, "Noise impacts from professional dog grooming forced-air dryers", *Noise and Health*, vol. 14 no. 60, October 2012, p224-226.
16. Wen-Lin Zhang, Wei-Qiang Zhang, Bi-Cheng Li, Dan Qu and Michael T. Johnson, "Bayesian Speaker Adaptation Based on a New Hierarchical Probabilistic Model", *IEEE Transactions on Speech and Language Processing*, vol. 20 no. 7, July 2012, pp2002-2015.
17. Yuxiang Shan, Yan Deng, Jia Liu, Michael T. Johnson, "Phone lattice reconstruction for embedded language recognition in LVCSR", *EURASIP Journal on Audio Speech and Music Processing*, vol. 2012, no. 15, April 2012, pp1-13.
18. Marek B. Trawicki, Michael T. Johnson, "Distributed multichannel speech enhancement with minimum mean-square error short-time spectral amplitude, log-spectral amplitude, and spectral phase estimation". *Signal Processing*, vol. 92 no. 2, February 2012, pp 345-356.
19. Peter M. Scheifele, Michael T. Johnson, Laura W. Kretschmer, John G. Clark, Deborah Kemper, Gopu Potty, "Ambient habitat noise and vibration at the Georgia Aquarium", *The Journal of the Acoustical Society of America*, vol. 132 no. 2, February 2012, EL88-EL94.
20. Wei Qiang Zhang, Liang He, Yan Deng, Jia Liu, Michael T. Johnson, "Time-Frequency Cepstral Features and Heteroscedastic Linear Discriminant Analysis for Language Recognition", IEEE transactions on audio, speech, and language processing vol. 19 no. 2, February 2011, pp.266-276.
21. Kuntoro Adi, Michael T. Johnson, and Tomasz S. Osiejuk, "Acoustic Censusing using Automatic Vocalization Classification and Identity Recognition," *Journal of the Acoustical Society of America*, vol. 127, no. 2, February 2010, pp 874-883.
22. Yao Ren, Michael T. Johnson, Patrick J. Clemins, Michael Darre, Sharon Stuart Glaeser, Tomasz S. Osiejuk, and Ebenezer Out-Nyarko, "A Framework for Bioacoustic Vocalization Analysis Using Hidden Markov Models", *Algorithms*, vol. 2 no. 3, November 2009, pp 1410-1428.s
23. Yanmin Qian, Jia Liu, Michael T. Johnson "Efficient Embedded Speech Recognition for Very Large Vocabulary Mandarin Car-Navigation Systems," *IEEE Transactions on Consumer Electronics*, vol. 55, no. 3, August 2009, 1496-1500.
24. Yao Ren, Michael T. Johnson, Jidong Tao, "Perceptually motivated wavelet packet transform for bioacoustic signal enhancement", *Journal of the Acoustical Society of America*, vol. 124, no. 1, July 2008, 316-327.
25. Jidong Tao, Michael T. Johnson, Tomasz S. Osiejuk, "Acoustic model adaptation for ortolan bunting (*Emberiza hortulana* L.) song type classification", *Journal of the Acoustical Society of America*, vol. 123, no. 3, March 2008, 1582-1590.

26. Michael T. Johnson, Xiaolong Yuan, Yao Ren, "Speech signal enhancement through adaptive wavelet thresholding", *Speech Communication*, vol. 49, No. 2, February 2007, pp 123-133.

27. Patrick Clemins and Michael T. Johnson, "Generalized perceptual linear prediction (gPLP) features for animal vocalization analysis", *Journal of the Acoustical Society of America*, Vol. 120, No. 1, July 2006, pp 527-534.

28. Richard J. Povinelli, Michael T. Johnson, Andrew C. Lindgren, Felice Roberts, and Jinjin Ye, "Statistical Models of Reconstructed Phase Spaces for Signal Classification", *IEEE Transactions on Signal Processing*, vol. 54, no. 6, June 2006, 2178-2186.

29. Michael T. Johnson and Richard J. Povinelli, "Generalized phase space projection for nonlinear noise reduction", *Physica D*, No. 201, February 2005, pp 306-317.

30. Kevin M. Indrebo, Richard J. Povinelli, and Michael T. Johnson, "Sub-banded Reconstructed Phase Spaces for Speech Recognition", *Speech Communication*, Vol. 48, No. 7, July 2006, pp 760-774.

31. Michael T. Johnson, "Capacity and Complexity of HMM Duration Modeling Techniques", *IEEE Signal Processing letters*, Volume 12, No. 5, May 2005, pp 407-410.

32. Patrick J. Clemins, Michael T. Johnson, Kirsten M. Leong, and Anne Savage, "Automatic Classification and Speaker Identification of African Elephant (Loxodonta Africana) vocalizations", *Journal of the Acoustical Society of America*, Volume 117, No. 2, February 2005, pp 956-963.

33. Michael T. Johnson, Richard J. Povinelli, Jinjin Ye, Xiaolin Liu, Andrew Lindgren, and Kevin Indrebo, "Time-Domain Isolated Phoneme Classification using Reconstructed Phase Spaces", *IEEE Transactions on Speech and Audio Processing*, Vol. 13, No. 4, July 2005, pp 458-466.

34. Richard J. Povinelli, Michael T. Johnson, Andrew C. Lindgren, and Jinjin Ye, "Time Series Classification using Gaussian Mixture Models of Reconstructed Phase Spaces", *IEEE Transactions on Knowledge and Data Engineering*, vol. 16, no. 6, June 2004, 779-783.

35. Kelly Stonger and Michael T. Johnson, "Optimal Calibration of PET Crystal Position Maps using Gaussian Mixture Models", *IEEE Transactions on Nuclear Science*, Vol. 51, No. 1, 2004, pp 85-90.

36. Yang Liu, Mary P. Harper, Michael T. Johnson, and Leah H. Jamieson, "The Effect of Pruning and Compression on Graphical Representations of the Output of a Speech Recognizer", *Computer Speech and Language*, Volume 17, 2003, pp. 329-256.

37. A.M. Surprenant, S.L. Hura, M.P. Harper, L.H. Jamieson, G.Long, S.M. Thede, A. Rout, T.H. Hsueh, S.A. Hockema, M.T. Johnson, P. Srinivasan, and C.M. White, "Familiarity and Pronouncibility of Nouns and Names*", Behavior Research, Methods, Instruments, & Computers*, Vol. 31, Nov. 1999, pp. 638-649.

38. Anne Smith, Michael Johnson, Clare McGillem, and Lisa Goffman "On the Assessment of Stability and Patterning of Speech Movements*", Journal of Speech, Language, and Hearing Research*, Vol. 43, 2000, pp 277-286.

39. Andrew J Kolb, Michael T Johnson, Jeffrey Berry, Interpolation of Tongue Fleshpoint Kinematics from Combined EMA Position and Orientation Data, Sixteenth Annual Conference of the International Speech Communication Association (Interspeech), September 2015.

40. Yi Liu, Yao Tian, Liang He, Jia Liu, Michael T Johnson, Simultaneous Utilization of Spectral Magnitude and Phase Information to Extract Supervectors for Speaker Verification, ASV Spoofing Challenge 2015, presented at Interspeech 2015, September 2015.

41. Gui Jin, Michael T Johnson, Jia Liu, Xiaokang Lin, Voice conversion based on Gaussian mixture modules with Minimum Distance Spectral Mapping, 2015 5th International Conference on Information Science and Technology (ICIST), April 2015, pp. 356-359.

42. Berry, Jeffrey, Cassandra North, and Michael T. Johnson, Dynamic aspects of articulating with a virtual vocal tract in dysarthria, International Conference on Motor Speech, 2014.

43. Berry, Jeffrey, A Kolb, C North, and Michael T. Johnson, Acoustic and Kinematic Characteristics of Vowel Production through a Virtual Vocal Tract in Dysarthria, Interspeech, Singapore, September 2014.

44. Berry, Jeffrey, John Jaeger, M Wiedenhoeft, B Bernal, and Michael T. Johnson, Consonant Context Effects on Vowel Sensorimotor Adaptation, Interspeech, Singapore, September 2014.

45. Ji, An, Michael T. Johnson, and Jeffrey Berry, Palate-referenced Articulatory Features for Acoustic-to-Articulator Inversion, Interspeech, Singapore, September 2014.

46. Jianglin Wang and Michael T. Johnson, "Physiologically-motivated Feature Extraction for Speaker Identification", International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2014, Florence, Italy.

47. Jeffrey Berry, Cassandra North, and Michael T. Johnson, "Sensorimotor adaptation of speech using real-time articulatory resynthesis", International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2014, Florence, Italy.

48. An Ji, Michael T. Johnson, and Jeffrey Berry, "The Electromagnetic Articulography Mandarin Accented English (EMA-MAE) Corpus of Acoustic and 3D Articulatory Kinematic Data", International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2014, Florence, Italy.

49. Jeffrey Berry, An Ji, and Michael T. Johnson, "Dynamic aspects of vowel production in Mandarin-accented English", American Speech-Language-Hearing Association 2013, Chicago, IL, November 2013.

50. Jeffrey Berry, Christine Belchel, Cassandra North, and Michael T. Johnson, "Learning novel articulatory acoustic mappings in dysarthria", American Speech Language Hearing Association 2013, Chicago, IL, November 2013.

51. Jianglin Wang and Michael T. Johnson, "Vocal source features for bilingual speaker identification", China SIP, July 2013, Beijing China.

52. An Ji, Michael T. Johnson, Jeffrey Berry, "Articulatory space calibration in 3D Electromagnetic Articulography", China SIP, July 2013, Beijing China.

53. Jeffrey Berry, Cassandra North, Benjamin Meyers, Michael T. Johnson, Speech sensorimotor learning through a virtual vocal tract, Proceedings of Spring 2013 Meetings on Acoustics, Montreal, June 2013.

54. An Ji, Jeffrey Berry, Michael T. Johnson, Vowel production in Mandarin accented English and American English: Kinematic and acoustic data from the Marquette University Mandarin accented English corpus, Proceedings of Spring 2013 Meetings on Acoustics, Montreal, June 2013.

55. Jianglin Wang, MT Johnson, "Residual Phase Cepstrum Coefficients with Application to Cross-lingual Speaker Verification", Interspeech 2012, Portland, September 2012.

56. Trawicki, Marek B. and Michael T. Johnson. "Improvements of the Beta-Order Minimum Mean-Square Error (MMSE) Spectral Amplitude Estimator using Chi Priors," Interspeech 2012, Portland, September 2012.

57. An Ji, Michael T. Johnson, Jeffrey Berry, "Tracking articulator movements using orientation measurements", 2012 International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, China, July 2012.

58. Marek B. Trawicki, Michael T. Johnson, An Ji, Tomasz S. Osiejuk, "Multichannel speech recognition using distributed microphone signal fusion strategies", 2012 International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, China, July 2012.

59. Jianglin Wang, An Ji, Michael T. Johnson, "Features for phoneme independent speaker identification", 2012 International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, China, July 2012.

60. Michael T. Johnson and Patrick Clemins, "Individual Identification using Hidden Markov Models for Population Monitoring and Assessment", Invited Presentation to Special Session "Topical Meeting on Signal Processing of Subtle and Complex Acoustic Signals in Animal Communication", Acoustical Society of America Spring 2010 Meeting, Baltimore, Maryland, April 2010.

61. Marek Trawicki and Michael T. Johnson, "Optimal Distributed Microphone Phase Estimation," International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2009, Taiwan, April 2009, pp 2177-2180.

62. Yao Ren and Michael T. Johnson, "Auditory Coding based Speech Enhancement", International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2009, Taiwan, April 2009, pp 4685-4688.

63. Marek B. Trawicki, Yao Ren, Michael T. Johnson, Tomasz S. Osiejuk, Distributed Multi-Channel Speech Enhancement of Ortolan Bunting (Emberiza Hortulana) Vocalizations, Acoustic Communication by Animals, Corvallis, Oregon, 2008, pp. 276-277.

64. Kuntoro Adi, Michael T. Johnson, Tomasz S. Osiejuk Hidden Markov Model (HMM) based animal acoustic censusing, Acoustic Communication by Animals, Corvallis, Oregon, 2008, pp. 3-4.

65. Ebenezer Otu-Nyarko, Peter Scheifele, Michael Darre, Michael Johnson, Classification of stressful vocalizations of captive laying chickens using the Hidden Markov Model (HMM), Acoustic Communication by Animals, Corvallis, Oregon, 2008, pp. 176-177.

66. Kristine Sonstrom, Peter Scheifele, Michael Darre, Michael Johnson, The classification of vocalizations to identify social groups of beluga whales in the St. Lawrence River

Estuary using the Hidden Markov Model, Acoustic Communication by Animals, Corvallis, Oregon, 2008, pp 251-252.

67. Kuntoro Adi, Kristine E. Sonstrom, Peter M. Scheifele, Michael T. Johnson, "Unsupervised validity measures for vocalization clustering," International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2008, April 2008, pp 4377-4380.

68. Yao Ren, Michael T. Johnson, "An Improved SNR estimator for speech enhancement," International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2008, April 2008, pp 4901-4904.

69. Mohamed A. Mneimneh, Michael T. Johnson, Richard J. Povinelli, "A Heart Cell Model for the Identification of Myocardial Ischemia," International Conference on Health Informatics, Funchal Madeira, Portugal, January 2008.

70. Z. W. Slavens, R. S. Hinks, J. A. Polzin, and M. T. Johnson, "Improved MR Image Magnification by Generalized Interpolation of Complex Data," Proceedings of the 15th Annual Meeting of ISMRM, Berlin, Germany, (Abstract #1887), May 2007.

71. Craig A. Struble, Richard J. Povinelli, Michael T. Johnson, Dina Berchanskiy, Jidong Tao, Marek Trawicki, "Combined Conditional Random Fields and n-Gram Language Models for Gene Mention Recognition, Proceedings of the Second BioCreative Challenge Evaluation Workshop, Madrid, Spain, April 2007.

72. Xi Li, Jidong Tao, Michael T. Johnson, Joseph Soltis, Anne Savage, Kirsten M. Leong,, John D. Newman, Stress and Emotion Classification using Jitter and Shimmer Features, International Conference on Acoustics Speech and Signal Processing 2007 (ICASSP07), Honolulu, Hawaii, April 2007, pp 1081-1084.

73. Mohamed A. Mneimneh, Richard J. Povinelli, Michael T. Johnson " An Integrative Approach for the Measurement of QT interval" Computers in Cardiology, Valencia, Spain, September 2006, pp 329-332.

74. Mohamed A. Mneimneh, Edwin E. Yaz, Michael T. Johnson, Richard J. Povinelli "Adaptive Kalman Filter Approach for the Baseline Removing Baseline Wandering " Computers in Cardiology, Valencia, Spain, September 2006, pp. 253-256.

75. Richard J. Povinelli, Mohamed A. Mneimneh, Michael T. Johnson "Cardiac Model Based Approach to QT Estimation" Computers in Cardiology, Valencia, Spain, September 2006, pp. 333-336.

76. Patrick Clemins, Marek B. Trawicki, Kuntoro Adi, Jidong Tau, and Michael T. Johnson, "Generalized Perceptual Features for Vocalization Analysis across Multiple Species", International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2006, Toulouse, France, May 2006.

77. Kuntoro Adi, Michael T. Johnson, Cepstral moment normalization for robust individual identification of ortolan bunting (*emberiza hortulana L*), presented at the Spring 2006 meetings of the Acoustical Society of America, May 2006, Providence, RI

78. Anthony D. Ricke, Richard J. Povinelli, Michael T. Johnson. "Segmenting Heart Sound Signals," Computers in Cardiology, Leon, France, September 2005.

79. Marek Trawicki and Michael T. Johnson, "Automatic Song-Type Classification and Speaker Identification of Norwegian Ortolan Bunting (Emberiza Hortulana) Vocalizations", IEEE International Conference on Machine Learning in Signal Processing (MLSP), Mystic, Connecticut, September 2005.

80. Patrick J. Clemins and Michael T. Johnson, "Unsupervised Classification of Beluga Whale Vocalizations", Spring 2005 Meetings of the Acoustical Society of America, Vancouver, May 2005.

81. Kevin M. Indrebo, Richard J. Povinelli, Michael T. Johnson. "Third-Order Moments of Filtered Speech Signals For Robust Speech Recognition," International Conference on Non-Linear Speech Processing (NOLISP) 2005, Barcelona, Spain, 151-157.

82. Jidong Tao and Michael T. Johnson, "Comparison and Evaluation of Animal Vocalization Enhancement Techniques", Fall 2004 Meetings of the Acoustical Society of America, San Diego, November 2004.

83. Kuntoro Adi and Michael T. Johnson, "Automatic Song-type classification and individual identification of Ortolan Bunting (Emberiza Hortulana L) vocalizations", Fall 2004 Meetings of the Acoustical Society of America, San Diego, November 2004.

84. Heather E. Ewalt and Michael T. Johnson, "Combining Multi-source Wiener Filtering with Parallel Beamformers to Reduce Noise from Interfering Talkers", International Conference on Signal Processing (ICSP) 2004, Beijing, August 2004.

85. Kevin M. Indrebo, Richard J. Povinelli, and Michael T. Johnson, "A comparison of reconstructed phase spaces and cepstral coefficients for multi-band phoneme classification", ICSP 2004, Beijing, August 2004.

86. Patrick Clemins and Michael T. Johnson, "Generalized perceptual features for animal vocalization classification", Spring 2004 Meetings of the Acoustical Society of America, New York, May 2004.

87. Andrew Lindgren, Michael T. Johnson, and Richard J. Povinelli, Joint Frequency Domain and Reconstructed Phase Space Features for Speech Recognition", International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2004, Montreal, May 2004.

88. Mike Zimmerman, Richard J. Povinelli, Michael T. Johnson, and Kris Ropella, "A Reconstructed Phase Space Approach for Distinguishing Ischemic from Non-Ischemic ST Changes using Holter ECG Data", Computers in Cardiology, Thessolonica, Greece, September, 2003.

89. Patrick Clemins and Michael T. Johnson, "Automatic Classification of African Elephant (Loxodonta africana) Follicular and Luteal Rumbles", 1st International Conference on Acoustic Communication by Animals, Baltimore, Maryland, July 2003, pp 81-82.

90. Patrick Clemins and Michael T. Johnson, "Automatic Type Classification and Speaker Identification of African Elephant (Loxodonta Africana) Vocalizations", Spring 2003 Meetings of the Acoustical Society of America, Nashville, May 2003.

91. Heather E. Ewalt and Michael T. Johnson, "Multiple Speech Signal Enhancement using a Microphone Array", Spring 2003 Meetings of the Acoustical Society of America, Nashville, May 2003.

92. Kevin M. Indrebo, Richard J. Povinelli, and Michael T. Johnson, "A Combined Sub-band and Reconstructed Phase Space Approach to Phoneme Classification", Non-Linear Speech Processing (NOLISP) 2003, Le Croisic, France, May 2003.

93. Jinjin Ye, Michael T. Johnson, and Richard J. Povinelli, "Study of attractor variation in the reconstructed phase space of speech signals, NOLISP 2003, Le Croisic, France, May 2003.

94. Jinjin Ye, Michael T. Johnson, and Richard J. Povinelli, "Phoneme classification over reconstructed phase space using principal component analysis", NOLISP 2003, Le Croisic, France, May 2003.

95. Xiaolin Liu, Richard J. Povinelli, and Michael T. Johnson, "Vowel classification by global dynamic modeling", NOLISP 2003, Le Croisic, France, May 2003.

96. Andrew C. Lindgren, Michael T. Johnson, and Richard J. Povinelli, "Speech Recognition using Reconstructed Phase Space Features", Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2003, Hong Kong, April 2003, pp I-60 – I-63.

97. Patrick Clemins and Michael T. Johnson, "Application of Speech Recognition to African Elephant (Loxodonta Africana) Vocalizations", Proceedings of ICASSP 2003, Hong Kong, April 2003, pp I-484 – I-487.

98. Michael T. Johnson, Andrew C. Lindgren, Richard J. Povinelli, and Xiaolong Yuan, "Performance of Nonlinear Speech Enhancement using Phase Space Reconstruction", Proceedings of ICASSP 2003, Hong Kong, April 2003, pp I-872 – I-875.

99. Xiaolin Liu, Richard Povinelli, and Michael T. Johnson, "Detecting Determinism in Speech Phonemes", IEEE Digital Signal Processing Workshop 2002, October 2002.

100. Jinjin Ye, Richard J. Povinelli, and Michael T. Johnson, "Phoneme Classification Using naïve Bayes Classifier in Reconstructed Phase Space", IEEE Digital Signal Processing Workshop 2002, October 2002.

101. Richard J. Povinelli, Michael T. Johnson, Nabeel A.O. Demerdash, and John F. Bangura, "A Comparison of Phase Space Reconstruction and Spectral Coherence Approaches for Diagnostics of Bar and End-Ring Connector Breakage and Eccentricity Faults in Polyphase Induction Motors using Motor Design Particulars", IEEE Industry Applications Society meetings 2002, October 2002.

102. Richard J. Povinelli, Felice M. Roberts, Kristina M. Ropella, and Michael T. Johnson, "Are Nonlinear Ventricular Arrhythmia Characteristics Lost, As Signal Duration Decreases?", Computers in Cardiology 2002, September 2002.

103. Patrick Clemins and Michael T. Johnson, "Automatic Speech Recognition and Speaker Identification of Animal Vocalizations", Measuring Behavior 2002, August 2002, pp 41-46.

104. Patrick Clemins, Heather Ewalt and Michael Johnson, "Time-aligned SVD Analysis for Speaker Identification", International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2002, May 2002, p 4160.

105. Michael T. Johnson and Leah H. Jamieson, "Temporal Features for Broadcast News Segmentation", ISCA Workshop on Prosody in Speech Understanding and Recognition, October 2001.

106. Michael T. Johnson and Mary P. Harper, "Near Minimal Weighted Word Graphs for Post-processing Speech", International Workshop on Automatic speech Recognition and Understanding (ASRU), December 1999.

107. M.P. Harper, M.T. Johnson, L.H. Jamieson, S.A. Hockema, and C.M. White, "Interfacing a CDG Parser with an HMM Word Recognizer Using Word Graphs", Proceedings of the International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 1999, March 1999, pp 733-736.

108.   Michael T. Johnson, Leah H. Jamieson, and Mary P. Harper "Interfacing Acoustic Models with Natural Language Processing Systems", Proceedings of the International Conference on Spoken Language Processing (ICSLP) 1998, December 1998, pp 2419-2422.

109.   A.M. Supranant, S.L. Hura, M.P. Harper, L.H. Jamieson, G. Long, S.M. Thede, A. Rout, T.H. Hsueh, S.A. Hockema, M.T. Johnson, J.B. Laflen, P. Srinivasa, and C.M. White, "Familiarity and Pronouncibility of Nouns and Names: The Purdue Proper Name Database", Spring 1998 Meetings of the Acoustical Society of America, June 1998.

110.   Michael Johnson and Mita Desai, "An Adaptive Approach for Texture Modelling", Proceedings of the International Conference on Image Processing (ICIP) 1994, November 1994.

111.   Harold Longbotham, Michael Johnson, Jack Harris, and Redouan Rouzky, "The FatBear: a nonarithmetic pico filter", Proceedings of the SPIE, Image Algebra and Morphological Image Processing IV, July 1993, pp 128-139.

Selected Invited Presentations

- Invited speaker, Shanghai Jiaotong University Colloquium Series, "Electromagnetic Articulography for Speaker Independent Acoustic-to-Articulatory Inversion, April 2015.

- Invited speaker, University of Memphis Institute of Intelligent Systems Colloquium Series, "Applying Speech Technology to Animal Vocalizations", April 2014.

- Invited speaker, NIMBioS Investigative Workshop on Analyzing Animal Vocal Sequences, "Using HMMs to model vocal structure and sequence for classification and identification", October 2013.

- Featured Keynote Speaker, GE Healthcare Technology symposium, "Innovations and Applications of Artificial Intelligence and Bayesian Modeling", August 2011.

- "Individual Identification using Hidden Markov Models for Population Monitoring and Assessment", Invited Presentation to Special Session "Topical Meeting on Signal Processing of Subtle and Complex Acoustic Signals in Animal Communication", at Acoustical Society of America Spring 2010 Meeting, Baltimore, Maryland, April 2010.

- Featured speaker at ShARE World Seminar 2008, "Innovation in Computation", Tsinghua University, Beijing China, December 2008.

- Keynote speaker for annual Tau Beta Pi banquet, "The Dr. Dolittle Project: Applying Speech Processing to Animal Vocalizations," November 2007.

- Presentation to Beijing Institute of Technology annual colloquia, "The Dr. Dolittle Project: Applying Speech Processing to Animal Vocalizations," Beijing, China, May 2007.

- Presentation to Tsinghua University Center for Speech Technology, "The Dr. Dolittle Project: Applying Speech Processing to Animal Vocalizations," Beijing, China, May 2007.

- Presentation to the Chinese Academy of Sciences, "The Dr. Dolittle Project: Applying Speech Processing to Animal Vocalizations," Institute of Acoustics, Beijing, China, May 2007.

- Michael T. Johnson, "The Dr. Dolittle Project: Applying speech technology to animal vocalizations", Sigma Xi annual banquet, April 27, 2007.
- Michael T. Johnson, "Speech Research at Marquette – The Dr. Dolittle Project", Marquette Trustees Committee on Academic Affairs and Planning, March 3, 2004.
- Michael T. Johnson, "Speech Recognition and Chaos Theory: A new approach to signal analysis", Lynde Bradley Science Club, Rockwell Automation, November 11, 2003.
- Michael T. Johnson, "The Dr. Dolittle Project: Applying human speech processing algorithms to other species", UW Milwaukee Computer Science Department Colloquium, November 7, 2003.
- Michael T. Johnson, "Talking with the Animals: Automatic Classification and Identification of Animal Vocalizations using Speech Technology", Keynote Speaker for Physics Club of Milwaukee Annual Banquet, June 5, 2002.
- Michael T. Johnson, "Speech Processing Research at Marquette (Elephants and Cocktail Parties)", COE National Research Council meeting, April 26, 2002.
- Michael T. Johnson, "Speech and Signal Processing Research at Marquette", Invited speaker at Sigma Xi annual meeting, February 20, 2002.

PhD Dissertation and MS Thesis

- Michael T. Johnson, "Incorporating Prosodic Information and Language Structure into Speech Recognition Systems", PhD Dissertation, Purdue University School of Electrical and Computer Engineering, August 2000.
- Michael T. Johnson, "An Adaptive Texture Model Based on Markov Random Fields", Masters Thesis, University of Texas at San Antonio, August 1994.

Student PhD Dissertations (primary advisor)

- An Ji, "Speaker Independent Acoustic-to-Articulatory Inversion", PhD Dissertation, Marquette University, December 2014.
- Jianglin Wang, "Physiologically-motivated feature extraction methods for speaker recognition", PhD Dissertation, Marquette University, December 2013.
- Jidong Tao, "Acoustic Model Adaptation for Automatic Speech Recognition and Animal Vocalization Classification", PhD Dissertation, Marquette University, May 2009.
- Marek Trawicki, "Distributed Multichannel Processing for Signal Enhancement", PhD Dissertation, Marquette University, May 2009.
- Kuntoro Adi, "Hidden Markov model based animal acoustic censusing: learning from speech processing technology", Ph.D. Dissertation, Marquette University, May 2008.
- Patrick J. Clemins, "Automatic Classification of Animal Vocalizations", PhD Thesis, Marquette University, May 2005.

Student MS Theses (primary advisor)

- Kelly Vonderhaar, Analysis of Interference between Electromagnetic Articulography and Electroglottograph Systems, Masters Thesis, Marquette University, August 2016.
- Xiangyu Zhou, Least-squares Mapping from Kinematic data to Acoustic Synthesis Parameters for Rehabilitative Acoustic Learning, Masters Thesis, Marquette University, May 2016.
- Andrew Kolb, Development of Software Tools and Analysis methods for the Use of Electromagnetic Articulography Data in Speech Research", Masters Thesis, Marquette University, May 2015.
- Zac Slavens, "Generalized interpolation applied to MR image magnification and gradient nonlinearity correction", Masters Thesis, Marquette University, May 2008.
- Xi Li, "SPEech Feature Toolbox (SPEFT) Design, and Emotional Speech Feature Extraction", M.S. Thesis, Marquette University, August 2007.
- Anthony D. Ricke, "Automatic Frame Length, Frame Overlap, and Hidden Markov Model Topology for Automatic Speech Recognition of Animal Vocalizations", M.S. Thesis, Marquette University, December 2006.
- Jinjin Ye, "Speech Recognition Using Time Domain Features from Phase Space Reconstructions", M.S. Thesis, Marquette University, May 2004.
- Franck Hounkpevi, "Triphone Creation Through Rule-based Trajectory Interpolation for Continuous Speech Recognition", M.S. Thesis, Marquette University, May 2003.
- Xiaolong Yuan, "Auditory Model-Based Bionic Wavelet Transform for Speech Enhancement", M.S. Thesis, Marquette University, May 2003.
- Andrew Lindgren, "Speech Recognition using Features extracted from Phase Space Reconstructions", M.S. Thesis, Marquette University, May 2003.
- Heather Ewalt, "Speech Signal Enhancement Using a Microphone Array", M.S. Thesis, Marquette University, December 2002.

Selected News and Magazine Articles

- "Listening to the Animal Kingdom", Discover Magazine, Marquette University, 2008, pp 14-15.
- "Decoding Calls of the Wild", by Mark Johnson, feature article in Milwaukee Journal Sentinel, part of "Brainpower: Groudbreaking Thinkers in Wisconsin", October 2008.
- "Say What?", cover article on Dr. Dolittle Project, Weekly Reader Science, Spring 2007.
- "Animal Talk", by Elena Cabral, Scholastic News Edition 5/6, December 18, 2006.
- "Animal "Speech" Project Aims to Decode Critter Communication", by Maryann Mott, National Geographic Online, http://news.nationalgeographic.com/news/2006/09/060926-dolittle-project.html, September 2006.
- "Parsing the Puffin's Patois", article on Dr. Dolittle Project by Rachel Metz, Wired News online, July 2006.
- "Quacking the Code", by Katie Pelech, article in Milwaukee Magazine, March 2006, p. 30.
- "What Jumbo tells Dumbo" by Alex Antunes, feature article in Computers in Science and Engineering (CISE) magazine, published by IEEE Computer Society, September-October 2005, pp 3-6.
- "Discoveries with Disney", article about collaborative project with Disney's Animal Kingdom published in MU Magazine, Fall 2003, p. 17.

GRANTS

Major Grants Funded

1. Michael T. Johnson (PI) and Jeffrey Berry (co-PI), "RI: Small: Speaker Independent Acoustic-Articulator Inversion for Pronunciation Assessment", National Science Foundation CISE Directorate, 2013. Total Budget $449,643 over 3 years.
2. Michael T. Johnson (PI) and Jeffrey Berry (co-PI), "EAGER: Acoustic-Articulator Modeling for Pronunciation Analysis", National Science Foundation CISE Directorate, 2011. Total Budget: $149,896.00 over 1 year.
3. Michael T. Johnson (PI), Elizabeth Mugganthaler (Fauna Communications Research Institute), Peter Scheifele (National Undersea Research Center, University of Connecticut), Mike Darre (Animal Sciences, University of Connecticut), Anne Savage (Disney Animal Kingdom), "The Dr. Dolittle Project: A Framework for Classification and Understanding of Animal Vocalizations", NSF IT-R program under CISE Directorate, 2003. Total Budget: $1,200,000 over 4 years.
4. Michael T. Johnson (PI) and Richard J. Povinelli, "Integration of Stochastic and Dynamical Methods for Speech Technology", NSF IT-R program under CISE directorate, 2001. Total Budget: $360,000 over 3 years.
5. Richard J. Povinelli (PI), Nabeel A. O. Demerdash, Edwin Yaz, and Michael T. Johnson, "A Novel Approach to Fault Modeling, Diagnostics, and Prediction in Motor Drive Systems", NSF Division of Controls, Networks, and Computational Intelligence, 2003. Total Budget: $340,000 over 3 years.

Additional Grants Funded

1. Jeffrey Berry (PI) and Michael T. Johnson (co-PI), "Speech Rehabilitation Using a Virtual Vocal Tract", Marquette Regular Research Grant (RRG). Funded $6,000 in 2014-15.
2. Michael T. Johnson (PI) and Jeffrey Berry (co-PI), Research Experiences for Undergraduates (REU) supplement to "RI: Small: Speaker Independent Acoustic-Articulator Inversion for Pronunciation Assessment", NSF REU program, CISE directorate. Funded $6,000 in 2013-2014, $6000 in 2014-2015, $6000 in 2015-2016.
3. Michael T. Johnson (PI) and Jeffrey Berry (co-PI), OISE International supplement to "EAGER: Acoustic-Articulator Modeling for Pronunciation Analysis", co-funded by CISE and OISE directorates. Funded $19,840 in 2012-2013.
4. Michael T. Johnson (PI) and Jeffrey Berry (co-PI), Research Experiences for Undergraduates (REU) supplement to "EAGER: Acoustic-Articulator Modeling for Pronunciation Analysis", NSF REU program, CISE directorate. Funded $8,000 in 2011-2012.
5. Richard J. Povinelli (PI) and Michael T. Johnson (PI), "An examination of phoneme confusability in spoken English", Marquette Regular Research Grant (RRG). Funded $15,000 in 2011-2012.
6. Michael T. Johnson (PI) et. al., Research Experiences for Undergraduates (REU) supplement to "The Dr. Dolittle Project", NSF REU program, CISE directorate. Funded at $6,000 in 2003-04, $15,000 in 2004-2005, $12,000 in 2005-2006, $15,000 in 2006-2007 Total Budget: $48,000.
7. Michael T. Johnson (PI) and Richard J. Povinelli, REU supplement to "Integration of Stochastic and Dynamical Methods for Speech Technology", NSF REU program, CISE directorate. Funded at $15,000 in 2001-02, 2002-03, and 2003-04, Total Budget: $45,000.
8. Richard J. Povinelli (PI), Nabeel A. O. Demerdash, Edwin Yaz, and Michael T. Johnson, REU supplement to "A Novel Approach to Fault Modeling, Diagnostics, and Prediction in Motor Drive Systems", NSF REU Program, CNCI Division. Funded at $6,000 in 2003-04 and 2004-05. Total Budget to-date: $6,000.

PROFESSIONAL ACTIVITIES

Technical Committees and Publication editing
- Area Editor, Speech Enhancement, Speech Communication Journal, 2014-present
- Member, IEEE Signal Processing Society Speech and Language Technical Committee (SLTC), 2015-present

Publication Review Participation
- Speech Communication Journal
- International Conference on Acoustics, Speech and Signal Processing
- Interspeech IEEE Automatic Speech and Recognition Workshop
- IEEE Transactions on Speech and Audio Processing
- Journal of the Acoustical Society of America
- IEEE Sensors Journal
- IEEE Transactions on VLSI
- IEEE Transactions on Signal Processing
- IEEE Signal Processing Letters
- IEEE Transactions on Neural Systems
- Journal of Applications of Signal Processing
- Animal Behavior Journal
- EURASIP Journal on Audio, Speech and Music Processing
- International Journal on Adaptive Control and Signal Processing
- Biosystems Engineering Journal
- Acoustics Research Letters Online
- International Conference on Decision and Control
- Midwest Symposium on Circuits and Systems
- Iasted Circuits and Systems Conference
- Workshop on Signal Processing and Applications
- American Controls Conference
- Journal of Zhejiang University Science C (Computers & Electronics)
- Journal of Medical Engineering & Physics
- Open Signal Processing Journal
- IEEE Spoken Language Technology workshop
- International Conference on Signal Processing (ICSP)
- Journal of Computers
- International Journal of Electronics and Communications
- Franklin Institute journal

Funding Review Participation
- National Science Foundation
  Have reviewed for CCLI, CAREER, CONICYT, and ITR programs, as well as various regular programs in the CISE and Biological Sciences directorate
- International: Austrian Science Fund, Icelandic Research Fund
- Medical College of Wisconsin Clinical and Translational Science Institute (CTSI)

Professional and honorary society memberships
- Senior Member IEEE, membership 1994-present
- IEEE Signal Processing Society, 1998-present
- Acoustical Society of America (ASA), 2001-present
- Eta Kappa Nu, 1996-present
- Upsilon Pi Epsilon, 2001-present
- Senior Member Sigma Xi, 2001-2012
- Association of Computer Machinery (ACM), 1998-2010
- IEEE Computer Society, 1998-2010
- IEEE Circuits and Systems Society, 2001-2009
- Association of Computational Linguistics (ACL), 1998-2002
- International Speech Communication Association (ISCA), 2001-2006

Other professional activities and awards
- Featured in "Groundbreaking Thinkers in Wisconsin" article series 2007
- Researcher of the Year, Marquette College of Engineering, 2006-2007
- Young Engineer of the Year, Engineers and Scientists of Milwaukee (ESM), 2006
- Registered Professional Engineer, State of Wisconsin

TEACHING AND EDUCATIONAL ACTIVITIES

Courses Taught

Undergraduate	Graduate and Joint Undergraduate/Graduate
EECE Freshman Seminar	Digital Signal Processing
Computer Hardware	Speech Processing
Digital Logic Design	Optimal/Adaptive Signal Processing
Linear Systems Analysis	Pattern Recognition
Embedded Systems Design	Analysis of Algorithms
	Information Theory
	Professional Research Writing

Teaching awards

Marquette Eta Kappa Nu (HKN) honor society EECE Teacher of the Year, 2014, 2005

Selected Teaching, Education, and Pedagogy activities

Coordinator for Marquette EECE Freshman Seminar
Participant in KEEN/Lafferty Teaching Development Workshop, Fall 2015, Spring 2016
Mentored numerous Research Experience for Undergraduates (REU) through NSF grants
International Teaching Experience, Tsinghua University, 2008-2009, 2011, 2013, 2014-2015
Signals and Systems Concept Inventory site coordinator for NSF study, 2003-2006
Developed and gave numerous DSP/Audio Workshops for middle and high school outreach
Participated with IEEE Signal Processing Education Technical Committee activities
Developed introductory DSP module for General Engineering freshman course
Participated in MU Assessment seminar by Barbara Wolvoord, May 2005
Participated in NSF Engineering Education Scholars (EES) program for new faculty
Participated in Prentice Hall Symposium on Education, Chicago, IL, 2001
Participated in NSF/ASEE Visiting Scholars Teaching Workshop, Spring 2001
Participated in NSF/ASEE Visiting Scholars Teaching Workshop, Fall 2000
Member, Advisory committee MU Center on Teaching and Learning (2005-2010)

Senior Design Advising at Marquette

- Rehabilitative Acoustic Synthesis System, 2013-2014
- Rockwell Asset Management System, 2010-2011
- GE SVO Test Automation Unit, 2007-2008
- Harley Davidson Calibration Test Meter, 2006-2007
- Disney's Animal Kingdom Mobile Discovery Station, 2003-2004
- Building Remote Motoring System, 2003-2004
- Voice Authentication Security System, 2002-2003
- Multiple Simulator Device Interfaces for Test Automation, 2002-2003
- Audio transcription database system, 2001-2002
- Voice authentication system, 2001-2002
- Airplane check-list voice recognition system, 2000-2001

ACADEMIC SERVICE

Service at the University of Kentucky

College:
- COE Chair's Committee (2016-present)

Departmental:
- ECE Department Chair (2016-present)

Committee Service at Marquette University
University:
- University Board of Graduate Studies (2009-2016; chair, 2012-2016)
- University Search Committee, Vice Provost for Enrollment Management (2015-2016)
- University Steering committee on academic integrity (2012-2014)
- University Subcommittee on academic integrity (2011)
- COF, Subcommittee on Nominations and Elections (chair, 2004-2007).
- Faculty mentor for Dissertation Boot Camps (2008, 2010)
- Advisory Committee for Center on Teaching and Learning (2005-2010)

College and Departmental:
- COE Research Activity Committee (2011)
- COE Dean of Engineering Search Committees (2003, 2009)
- COE Freshman Programs Committee (2006-2007)
- COE Discovery Towers Building Committee (2004-2005)
- BME Biocomputer Program Advisory Board (2001-2016)
- EECE Graduate Committee (2000-2003, 2005-2016)
- EECE Undergraduate Committee (2003-2008, 2012-2015)
- EECE Director of Graduate Studies (2009-2012)
- EECE Department Grad Program Assessment Coordinator (2009-2012)
- Numerous EECE faculty search and other subcommittees

Selected service activities at Marquette University
- Coordinator for EECE open house activities, fall 2015.
- Faculty advisor for Marquette's HKN chapter and Sigma Phi Delta engineering fraternity
- Active participant in EECE and COE open houses
- Regular blackjack dealer for annual engineering student council casino nights
- Regular participant in MU parent lunch program
- Panelist for University Advancement workshop, 2011
- ORSP Brown Bag panelist "One thing led to another" research series, 2010
- Participated in MU Assessment seminar by Barbara Wolvoord, May 2005.
- Attended First Annual Institute for Faculty: Career and Time Management, January 2005
- COE representative for "We are Marquette" World Café Conversation, 2004
- ORSP Brown Bag panelist on Pre-proposal Contact with Sponsors, 2003
- Gave research presentation to COE National Advisory Council, 2002
- Numerous Marquette university, college, and department student and student group activities
- Numerous research talks, colloquia, and seminars

Selected service and outreach activities

- Guest speaker, Marquette Girls Who Code outreach program, March 2016.
- Guest speaker, MOTIF English corner, Beijing, China. "Diversity", September 2014, "Humor", March 2015, "Languages of the World", June 2015.
- Senior Visiting Scholar, Tsinghua University, China, 2014-2015, 2008-2009, summer 2011, summer 2013
- COE iPalm2 outreach program to high school students, August 2011, 2012, 2013
- Represented MU and COE on visits to Harbin Institute of Technology, China, 2011 (Have traveled to China on several occasions representing Marquette)
- Spoke to students at Rosenwald Dunbar elementary school in Nicholasville, KY, about the Dolittle project and careers in engineering, 2008
- Spoke to students at Cardinal Valley elementary school in Lexington, KY, about the Dolittle project and careers in engineering, 2006
- Participated in Marquette University High School Junior Career Day, 2005
- Spoke to "Future Problem Solvers" gifted program at Templeton Middle School about Artificial Intelligence, 2005
- Participated in Innovation Mondays meetings with local industry, 2004-2005
- EECE representative and presenter for GEMS Advanced Education Fair, 2004
- Spoke at MSOE about graduate school opportunities in EECE, 2002-2003
- Presented at Lynde Bradley Science Club, Rockwell Automation, 2003
- Presented at UW Milwaukee Computer Science Department Colloquium, 2003
- Was keynote Speaker at Physics Club of Milwaukee annual banquet, 2002
- Spoke at UWM Elementary Education class on careers in science and technology, 2002
- Participated in Nathan Hale H.S. Career Day regarding careers in engineering, 2002
- Member, Eastbrook Church & worship choir, 2001-2016
- Numerous other volunteer and community activities