Maciej Zawodniok, Ph.D.

Assistant Professor, Electrical and Computer Engineering (ECE) Department,
Assistant Director for the Missouri S&T NSF I/UCRC on IMS
Missouri University of Science and Technology
133 Emerson Hall, 301 W. 16th St., Rolla, Missouri 65409 – 0370,
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URL: http://people.mst.edu/faculty/mjzx9c_profile.html

Academic Experience

- **PhD. in Computer Engineering,** University of Missouri-Rolla   **May 2006**
  Dissertation topic "Distributed Power Control (DPC)-based Energy Efficient Protocols for Wireless Networks" (defended December 22nd, 2005)
  Advisor: Prof. Jagannathan Sarangapani

- **M.S. in Computer** Science, Politechnika Śląska w Gliwicach (Poland),   **Nov. 1999**
  Specialization: "Databases, Computer Networks and Systems"
  Advisor: Prof. Adam Mrozek

Awards

- Outstanding Teaching Commendation Award, the School of Extended Learning
- 2012 Outstanding New Advisor of the Year Award
- Global Learning 2012 Outstanding Teaching Award of Excellence

Work Experience

- Missouri S&T,   **08/2008-Present**
  Assistant Professor, Electrical and Computer Engineering, **Assistant Site Director**, NSF Industry / University Cooperative Research Center (I/UCRC) on Intelligent Maintenance Systems at Missouri S&T
- University of Missouri–Rolla,   **01/2006-08/2008**
  Post-Doctoral Fellow, Electrical and Computer Engineering,
- University of Missouri–Rolla,   **07/2003-12/2005**
  GRA, Electrical and Computer engineering
- Motorola Polska Sp. z o.o.(Kraków, Poland),   **12/2002–06/2003**
  Software Engineer
- Leliwa Sp. z o.o. (Kraków, Poland)   **02/2001–11/2002**
  Senior Training Specialist
- Leliwa Sp. z o.o. (Kraków, Poland)   **05/2000–01/2001**
  Training Specialist

Publications And Other Scholarly Contributions

Books/Book Chapters

1. **Maciej J. Zawodniok** and Sambhav Kundaikar, "Optimized Built-In Self-Test Technique for CAEN-Based Nanofabric Systems," pp. 569-590, *chapter 45 in Nanoelectronic Device Applications Handbook*, James E. Morris & Krzysztof Iniewski (editors), CRC Press (Taylor & Francis Group), June 17, 2013.
2. Behdis Eslamnour, S. Jagannathan, and **Maciej Zawodniok**, "Cooperative Resource Allocation for Primary and Secondary Users with Adjustable Priorities in Cognitive Radio Networks," pp. 438-448, *chapter in Advances in Digital Image Processing and Information Technology*, Dhinaharan Nagamalai, Eric Renault, and Murugan Dhanuskodi (editors), Vol. 205, Springer Berlin Heidelberg, 2011. (share:50%)

Journals Published/Accepted

1. Paul, T.; Kimball, J.W.; **Zawodniok, M**.; Roth, T.P.; McMillin, B, "Unified Invariants for Cyber-Physical Switched System Stability," Accepted for publication in IEEE Transactions on Smart Grid in 2013. (share:30%)
2. H. Ferdowsi, S. Jagannathan, and **M. Zawodniok**, "An Online Outlier Identification and Removal Scheme for Improving Model-Based Fault Detection Performance," Accepted for publication in IEEE Transactions on Neural Networks and Learning Systems in 2013. (share:50%)
3. V. Thotla, M. Tayeb Ghasr , **M. Zawodniok** , S. Jagannathan , S. Agarwal, "Detection of Super-Regenerative Receivers Using Hurst Parameter," To appear in IEEE Transactions on Instrumentations and Measurements, 2013. (share:30%)
4. M. Tayeb Ghasr, V. Thotla, **M. Zawodniok**, and S. Jagannathan, "Detection of Super Regenerative Receiver using Amplitude Modulated Stimulation," *Instrumentation and Measurement, IEEE Transactions on*, Vol. 62 , No. 7, pp. 2029 – 2036, 12 April 2013. (share:30%)
5. Sandeep Kolli and **M. Zawodniok**, "A Dynamic Programming Approach: Improving Performance of the Wireless Networks," *Journal of Parallel and Distributed Computing* (JPDC) , vol. 71, no. 11, pp. 1447-1459, 2011. (share:100%)
6. B. Eslamnour, J. Sarangapani, and **M. Zawodniok** "Dynamic Channel Allocation in Wireless Networks Using Adaptive Learning Automata," *International Journal of Wireless Information Networks*, Springer Netherlands, pp. 1-14, 20 May 2011. (share:40%)
7. J.W. Kimball, **M. Zawodniok**, "Reducing Common-Mode Voltage in Three-Phase Sine-Triangle PWM with Interleaved Carriers," *Power Electronics, IEEE Transactions on*, Vol. 26 , No. 8, pp. 2229-2236, 15 November 2010. (share:40%)
8. J. W. Fonda, **M. Zawodniok**, S. Jagannathan, and S. E. Watkins, Adaptive Distributed Fair Scheduling for Multiple Channels in Wireless Sensor Networks, *International Journal of Distributed Sensor Networks*, Vol. 5, No. 6, pp. 824-833, November 2009. (share:30%)
9. A. Soylemezoglu, **M. Zawodniok**, S. Jagannathan, "RFID-based Smart Freezer," *IEEE Transactions on Industrial Electronics*, vol.56, no.7, pp.2347-2356, July 2009 (share:40%)
10. T. Landstra, S. Jagannathan and **M. Zawodniok**, Energy-Efficient Hybrid Key Management Protocol for Wireless Sensor Networks, *International Journal of Network Security*, Vol.9, No.2, pp.121-134, 2009. (share:25%)

11. Fonda, James W., Steve E. Watkins, S. Jagannathan, and **Maciej Zawodniok**. "Embeddable Sensor Mote for Structural Monitoring" Proc. *SPIE*, Vol. 6932, 69322V (2008). (share:20%)
12. J. W. Fonda, **M. Zawodniok**, S. Jagannathan, and S. E. Watkins, OEDSR: Optimized Energy-Delay Sub-Network Routing Protocol Development and Implementation for Wireless Sensor Networks, *Journal of Smart Materials and Structures*, Vol. 17, pp. 1-14, June 2008. (share:30%)
13. **M. Zawodniok** and S. Jagannathan, Predictive Congestion Control MAC Protocol for Wireless Sensor Networks, *IEEE Transactions on Wireless Communications*, Vol. 6, No. 11, pp. 3955–3963, November 2007.
14. **M. Zawodniok** and S. Jagannathan, Energy-Efficient Rate Adaptation MAC Protocol for Wireless Ad Hoc Networks, *International Journal of Wireless Information Networks (IJWI)*, Vol. 14, No 4, pp. 251-263, November 2007.
15. S. Jagannathan, **M. Zawodniok** and Q. Shang, Distributed power control of cellular networks in the presence of channel uncertainties, *IEEE Transactions on Wireless Communication*, Vol. 5, No. 3, pp.540-549, March 2006.
16. A. Soylemezoglu, **M. Zawodniok**, K. Cha, D. Hall, J. Birt, C. Saygin, and S. Jagannathan, A Testbed Architecture for Auto-ID Technologies, *Assembly Automation Journal*; Vol. 26, No. 2, pp. 127-136, 2006.
17. K. Cha, **M. Zawodniok**, A. Ramachandran, J. Sarangapani, and C. Saygin, Interference Mitigation and Read-Rate Improvement in RFID-based Network-Centric Environments, *Journal of Sensor Review*, vol. 26, issue 4, pp. 318-325, 2006.

Journals Submitted

18. L. Wang and **M. Zawodniok**, "Improving Localization Accuracy of Received Signal Strength (RSS)-based Schemes in Cellular Networks," submitted to IEEE Transactions on Wireless Communications.
19. A.V. Padaki and **M. Zawodniok**, "Utility of Collaborative Networked Communication Schemes in Passive Backscatter Communication Networks," under revision for resubmission to the IEEE Transactions on Sensor Networks.
20. S. Ebrahimi, V. R. Surrendra, and **M. Zawodniok**, "Distributed Beamforming for RF Propagation Using a Scattering Network," under revision for resubmission to EEE Transactions on Wireless Communications
21. L. Wu, H. Xu, and **M. Zawodniok**, "Cooperative Power Control and Radio Resource Allocation for Cognitive Radio Networks," Submitted to IEEE/ACM Transactions on Networking.

Conferences

1. McMillin, B,; Ramaprasad, H.; Chellapan, S.; Kimball, J.W.; **Zawodniok, M**.; Choudhari, A.; "Stability of a Cyber-Physical Smart Grid System using Cooperating Invariants," Accepted to IEEE COMPSAC 2013 conference.
2. S. Ebrahimi Asl, M.T. Ghasr, **M. Zawodniok**, and K.E. Robinson, "Preliminary Study of Mutual Coupling Effect on a Passive RFID Antenna Array," accepted to IEEE I2MTC 2013
3. Padaki, A.V.; **Zawodniok, M**., "TDMA for wireless passive backscatter networks: An information theoretic approach," Local Computer Networks (LCN), 2012 IEEE 37th Conference on , pp.264-267, 22-25 Oct. 2012 (doi: 10.1109/LCN.2012.6423624)

4. Wang, L.; **Zawodniok, M**., "RSSI-based localization in cellular networks," Local Computer Networks Workshops (LCN Workshops), 2012 IEEE 37th Conference on, pp.820-826, 22-25 Oct. 2012. (doi: 10.1109/LCNW.2012.6424069)

5. R.S. Kraleti, **M. Zawodniok**, S. Jagannathan, "Model based diagnostics and prognostics of three-phase induction motor for vapor compressor applications," *Prognostics and Health Management (PHM), 2012 IEEE Conference on*, pp.1-7, 18-21 June 2012. doi: 10.1109/ICPHM.2012.6299525

6. V. Thotla, M. T. A. Ghasr, **M. Zawodniok**, S. Jagannathan, and S. Agarwal, "Detection and localization of R/C electronic devices using Hurst parameter," Proc. SPIE 8359, Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense XI, 835915 (May 1, 2012); doi:10.1117/12.919375.

7. Thotla, V.; Ghasr, M.T.A.; **Zawodniok, M**.; Jagannathan, S.; Agarwal, S.; , "Detection and localization of multiple R/C electronic devices using array detectors," *Instrumentation and Measurement Technology Conference (I2MTC), 2012 IEEE International*, pp.1687-1691, 13-16 May 2012. doi: 10.1109/I2MTC.2012.6229345

8. Paul, T.; Kimball, J.W.; **Zawodniok, M**.; Roth, T.P.; McMillin, B.; , "Invariants as a unified knowledge model for Cyber-Physical Systems," Service-Oriented Computing and Applications (SOCA), 2011 IEEE International Conference on , pp.1-8, 12-14 Dec. 2011

9. S. Kundaikar and **M. Zawodniok**, "Optimized Built-In Self-Test Technique for CAEN-Based Nanofabric Systems," Nanotechnology (IEEE-NANO), 2011 11th IEEE Conference on, pp.1717-1722, 15-18 Aug. 2011.

10. E. Taqieddin, **M. Zawodniok**, Jagannathan S., and A. Miller, "Hardware Implementation of the Energy-efficient Hybrid Key Management Protocol for Wireless Sensor Networks," Accepted to 2011 International Conference on Wireless Networks (ICWN'11).

11. A. Padaki and **M. Zawodniok**, "Theoretical Capacity Analysis of Multi-hop Backscatter Communication Networks," *Computer Communications and Networks (ICCCN), 2011 Proceedings of 20th International Conference on* , pp.1-6, July 31 2011-Aug. 4 2011. doi: 10.1109/ICCCN.2011.6005804

12. Liuju Wu and **M. Zawodniok**, "Cooperative Approaches Indicating to Capacity and Power Control for Ad Hoc Wireless Network," *Computer Communications and Networks (ICCCN), 2011 Proceedings of 20th International Conference on* , pp.1-6, July 31 2011-Aug. 4 2011. doi: 10.1109/ICCCN.2011.6005792

13. S. Roy, L. Wu, and **M. Zawodniok**, "Spectrum Management for Wireless Networks Using Adaptive Control and Game Theory," Wireless Communications and Networking Conference (WCNC), 2011 IEEE, pp.1062-1067, 28-31 March 2011. doi: 10.1109/WCNC.2011.5779307

14. V.R. Surendra and **M. Zawodniok**, "Multi-hop Framework for Battery-less Devices Using Passive RF Communication," Wireless Communications and Networking Conference (WCNC), 2011 IEEE, pp.1149-1154, 28-31 March 2011. doi: 10.1109/WCNC.2011.5779293

15. V.R. Surendra and **M. Zawodniok**, "Distributed Beamforming Using a Scattering Network," Communication Networks and Services Research Conference (CNSR), 2010 Eighth Annual, pp.116-123, 11-14 May 2010.

16. J.W. Kimball and **M. Zawodniok**, "Reducing common-mode voltage in three-phase sine-triangle PWM with interleaved carriers," Applied Power Electronics Conference and Exposition (APEC), 2010 Twenty-Fifth Annual IEEE , pp.1508-1513, 21-25 Feb. 2010.

17. S. Kolli and **M. Zawodniok**, "Energy-efficient multi-key security scheme for wireless sensor network," Local Computer Networks, 2009. LCN 2009. IEEE 34th Conference on, pp.937-944, 20-23 Oct. 2009.

18. R. Anguswamy, **M. Zawodniok**, and S. Jagannathan, "A Multi-Interface Multi-Channel Routing (MMCR) Protocol for Wireless Ad Hoc Networks," Wireless Communications and Networking Conference, 2009. WCNC 2009. IEEE , pp.1-6, 5-8 April 2009.
19. B. Elsamnour, **M. Zawodniok**, and S. Jaganathan, "Dynamic Channel Allocation in Wireless Networks using Adaptive Learning Automata," Wireless Communications and Networking Conference, 2009. WCNC 2009. IEEE , pp.1-6, 5-8 April 2009.
20. T. Landstra, **M. Zawodniok**, and S. Jagannathan, Energy-Efficient Hybrid Key Management Protocol for Wireless Sensor Networks, 32nd IEEE Conf. on Local Computer Networks LCN 2007, pp. 1009-1016, Oct. 2007.
21. K.C. Emani, K. Kam, **M. Zawodniok**, Y.R. Zheng, J. Sarangapani, Improvement of CAN BUS Performance by Using Error-Correction Codes, Proc. Of IEEE Region 5 Technical Conference 2007, pp. 205-210, April 2007.
22. F. Ren, Y.R. Zheng, **M. Zawodniok**, J. Sarangapani, Effects of Electromagnetic Interference on Control Area Network Performance, Proc. Of IEEE Region 5 Technical Conference 2007, pp. 199–204, April 2007.
23. **M. Zawodniok** and S. Jagannathan, Dynamic Programming based Energy-Efficient Rate Adaptation for Wireless Ad Hoc Networks, Proc. of the 31st IEEE Conference on Local Computer Networks (LCN) 2006, pp. 521–524, November 2006.
24. J.W. Fonda, **M. Zawodniok**, S. Jagannathan, S.E. Watkins, Adaptive Distributed Fair Scheduling and Its Implementation in Wireless Sensor Networks, Proc. of IEEE International Conference on Systems, Man and Cybernetics (ICSMC) 2006 in Taiwan, Vol. 4, pp. 3382–3387, October 2006.
25. J.W. Fonda, **M. Zawodniok** and S. Jagannathan, and S.E. Watkins, Development and Implementation of Optimized Energy-Delay Sub-network Routing Protocol for Wireless Sensor Networks, Proceedings to IEEE CCA/CACSD/ISIC 2006, pp. 119–124, Oct 2006.
26. **M. Zawodniok** and S. Jagannathan, Congestion Control and Routing Schemes for Wireless Sensor Networks, to appear in Proceedings to Forty-Fourth Annual Allerton Conference on Communication, Control, and Computing, 2006.
27. **M. Zawodniok** and S. Jagannathan, Predictive Congestion Control MAC Protocol for Wireless Sensor Networks, IEEE International Conference on Control and Automation (ICCA'05), vol. 1, pp.185-190, June 2005.
28. **M. Zawodniok** and S. Jagannathan, Energy-Efficient Rate Adaptation MAC Protocol for Wireless Ad Hoc Networks, IEEE IPCCC'05, pp.389-394, April 2005.
29. S. Jagannathan, **M. Zawodniok** and Q. Shang, Distributed power control of cellular networks in the presence of channel uncertainties, IEEE INFOCOM, Vol.2, pp. 1055-1066, March 2004.
30. **M. Zawodniok** and S. Jagannathan, A Distributed Power Control MAC Protocol for Wireless Ad Hoc Networks, IEEE WCNC'04, Vol. 3, pp. 1915-1920, March 2004.

Conferences Submission

1. A. Saxena and **M. Zawodniok**, Indoor Positioning System Using Geo-Magnetic Field, Submitted to IEEE I2MTC'14.
2. S. Bi, L. Wang, and **M. Zawodniok**, Study of Capacity Estimation for Routing Path in Ad Hoc Networks, Submitted to IEEE WCNC'14.

Patents and Invention Disclosures

1. "Smart Freezer," Jag Sarangapani, Can Saygin, Maheswaran Thiagarajan, Maciej Zawodniok – University of Missouri Invention Disclosure Number: 07UMR074 (2007).
2. Provisional patent application (07UMR074prov) has been filed on 12/21/2007
3. "Adaptive Distributed Fair Scheduling Protocol for Wireless Sensor Networks," Jag Sarangapani, Niranjan Regatte, Maciej Zawodniok – University of Missouri Invention Disclosure Number: 06UMR095 (2006).
4. "Multi-hop Routing Protocol for Wireless Ad Hoc and Sensor Networks," Jag Sarangapani, Sibila Ratnaraj, James Fonda, Maciej Zawodniok – University of Missouri Invention Disclosure Number: 06UMR094 (2006).

Technical presentations and Demonstrations

1) Maciej Zawodniok, Jagannathan Sarangpani, Nagaraja Iyyer, Douglas Algera, Amit Singh, and Nam Phan, "Improving Passive RFID Tag Performance: Application to Rotorcraft Dynamic Component Tracking," submitted to 15th Australian International Aerospace Congress, 2013.
2) B. Eslamnour, S. Jagannathan, and **M. Zawodniok**, "Cooperative Resource Allocation for Primary and Secondary Users with Adjustable Priorities in Cognitive Radio Networks," 3rd International Conference on Wireless & Mobile Networks, (WiMoN-2011).
3) P. Kasirajan, H. Xu, **M. J. Zawodniok**, and S. Jagannathan, "Demonstration of a Multi-Interface Multi-Channel Routing Protocol (MMCR) for WSNs using Missouri S&T Motes," IEEE LCN 2010, Demonstration session, October 2010.
4) JJ. W. Fonda, **M. J. Zawodniok**, S. Jagannathan, A. Salour, D. Miller Jr., "Missouri S&T Mote-Based Demonstration of Energy Monitoring Solution for Network Enabled Manufacturing Using Wireless Sensor Networks (WSN)," IPSN 2008, pp. 559-560, 2008.
5) J.W. Fonda, **M.J. Zawodniok**, J.T. Birt, S. Jagannathan, UMR Mote-based Demonstration of Wireless Sensor Networking Protocols using Pneumatic Testbed, 6th International Symposium on Information Processing in Sensor Networks, IPSN 2007, pp. 569–570, April 2007.
6) S. Jagannathan, J.W. Fonda, **M. Zawodniok**, J. Brit, S.Watkins, Wireless Sensor Network-Based Monitoring and Prognostics for Aerospace Structures, ASM AeroMat 2005, June 2005.
7) C. Saygin, K. Cha, A. Soylemezoglu, J. Brit, **M. Zawodniok**, J. Fonda, E. Taqieddin, M.D. Mills Harris, J. Saragapani, D. Trimble and T. Siegel, A Testbed for Validation and Benchmarking of Auto-ID Solution, ASM AeroMat 2005, June 2005.
8) J.W. Fonda, R. Anguswamy, **M. Zawodniok**, J. Birt, Jagannathan Sarangapani, and C. Saygin, Pull-Type Tool Health Monitoring and Product Quality Verification using Wireless Sensor Networks, ISHM'06, Cincinnati, August 2006
9) J. W. Fonda, **M. J. Zawodniok**, S. Jagannathan, and Can Saygin, "Industrial Monitoring and Control using Wireless Multi-hop Network Routing Protocol", National Science Foundation Intelligent Maintenance Systems Center Industrial Advisory Board Meeting, November 14-15th, 2006.

Services

University Service

- **Member** of the campus Information Technology
  and Computing Committee (ITCC)   2013-Present

- **Chair** of the ECE department Senior Design Course Committee   2012 – Present
  - I have lead effort to develop recommendation for instructors in Senior Design Course. This effort is aimed at ensuring a consistent and comprehensive educational experience for undergraduate students while helping new instructors conduct the course and avoid pitfalls.

- **Member** of EE Faculty Search Committee   2012-Present

- **Advisor** for IEEE Student Branch at Missouri S&T   08/2010 – Present
  - Initiated and continue to support a student-organized IEEE Blackboard Tournament for Missouri S&T students.

- **Advisor** for twelve teams in Senior Design Program   08/2010 – Present

- **Advisor** for Freshman Engineering Program,   08/2008 – 08/2013

Professional Service and Society Memberships

- IEEE Member from 2003
- President for IEEE Rolla Subsection
- Advisor for IEEE Student Chapter
- Technical Program Chair for ASEE Midwest 2012 Conference, Sept 19-21, 2012.
- Associate Editor:
  - IEEE Transaction on Instrumentation and Measurements   2011-Present
- Reviewer at NSF Panels   2008-Present
  - One panel 2008, one panel 2009, two panels 2010, two panels 2012
- Reviewer for several conferences and journals   01/2006 - Present
  - IEEE WCNC, LCN, IPDPS and IMECE conferences,
  - IEEE Transactions on Control Systems Technology,
  - IEEE Transactions on Wireless Communications,
  - IEEE Transactions on Neural Networks
  - IEEE Transactions on Instrumentation and Measurements
  - IEEE Transactions on Vehicular Technology
  - International Journal of Network Security
  - International Journal of Distributed Sensor Networks.

Research Grants And Contracts

Awarded

No.	Title	Agency /Source	Period	My Share	Total Value
20	Memristors for Low-Power, Passive RF Devices	NSF	2013-2016	50% (PI)	$400K
19	NSF I/UCRC on IMS – Company Membership	Amplisine (industry)	2013-2014	50% (PI)	$40K
18	NSF I/UCRC on IMS – Company Membership (second)	Amplisine (industry)	2013-2014	50%	$40K
17	IMS Membership / SBIR Innovative Method for Wirelessly Powering RFID Tags Located on Rotorcraft	DoD with TDA-Inc	2012-2013	75%	$12K
16	Embedded, Networked Controller for a Mobile Sensor	Boeing (industry)	2012-2013	100% (PI)	$40K
15	IMS membership	Kallscott (industry)	2012-2013	46%	$12K
14	DURIP: Heterogeneous Secure Networking Test-Bed to Counter Explosives	DoD	2012-2013	25%	$250K
13	NSF: Collaborative Research: Collaborative Research on Coupled Models for Prognostics and Health Management (PHM)	NSF	2012-2014	50%	$50K
12	NSF IIP: Colaborative: Design of Accelerated Prognostics and Health Management	NSF	2011-2013	50% (PI)	$50K
11	Agile Systems Engineering: Experimental and Active Learning Approach	Stevens Institute of Technology	2010-2012	10%	$11K
10	Agile Systems Engineering: Experiential and Active Learning Approach	Stevens Institute of Technology	2010-2012	10%	$187.5K
9	4.2 Cognitive Network and Protocols using Missouri S&T Mote	Dept. of Army	2010-2012	66% (PI)	$450K
8	4.1 Design of Hardware Platform for Multimodal Sensor Detection	Dept. of Army	2010-2012	66% (PI)	$300K
7	Design of a Secure Protocol	CAMT/ Boeing	2010-2011	50%	$25K
6	NSF IIP: Collaborative: A Systematic Methodology for Data Validation and Verification for Prognostics Applications	NSF	2010-2012	50% (PI)	$50K
5	International Component (Supplement to NSF REU SITE)	NSF	2010-2011	10%	$20K
4	NSF CAREER: Backscatter Propagation-based Multi-hop Networks for Battery-less Devices	NSF	2010-2014	100% (PI)	$400K
3	IUCRC for Intelligent Maintenance Systems (IMS): Five-Year Renewal Proposal	NSF	2009-2014	50%	$50K
2	NSF I/UCRC on IMS – Company Membership	ITW Military GSE (industry)	2009-2010	100% (PI)	$12K
1	NSF REU Site: Research and Training Experience for Undergraduates in the Area of Sensor Computing, Co-PI/Staff (PI: Madria)	NSF	2008-2011	5%	$300K

Advising

Graduated Students

1) Behdis Eslamnour (**PhD**) (Co-Advisor) – 2011
   - Dissertation Title: Adaptive Resource Allocation For Cognitive Wireless Ad Hoc Networks
2) Sandeep Kolli (**MS – Thesis**) – 2010
   - Thesis Title: Energy-Efficient Task-Scheduling And Networking Protocols For Secure Wireless Networks
3) Vikram Surendra (**MS – Thesis**) – 2011
   - Thesis Title: Development Of Novel Backscatter Communication Systems Using A Multi-Hop Framework And Distributed Beamforming
4) Raja Kralet (**MS – Thesis**) (Co-Advisor) –2011
   - Thesis Title: Model Based Diagnostics And Prognostics Of Practical Industrial Systems
5) Pratim Shah (**MS – Thesis**) – 2011
   - Thesis Title: Experimental Feasibility Study Of A Passive Radio Frequency Identification-Based Distributed Beamforming Framework And Radio Frequency Tag Design For Achieving Dynamic Beamforming
6) Sambhav Kundaikar (**MS – Thesis**) – 2011
   - Thesis Title: Optimized Testing and Logic Mapping Methodology for CAEN-based Nano-Circuits
7) Sandeep Sharma (**MS – non-thesis/coursework**) – 2012
8) Aditya Padaki (**MS – Thesis**) – 2012
   - Thesis Title: Information Theoretic Analysis And Design Of Passive Wireless Backscatter Sensor Networks
9) Liuju Wu (**MS – Thesis**) – 2012
   - Thesis Title: Analysis of Cooperative Power Control Approaches Regarding Capacity for Peer-to-Peer Wireless Network
10) Jason Pahl (**BS – research assistantship**) – 2013

Current Students

1) Vivek Thotla (**PhD**) – current
2) Lei Wang (**PhD**) – current
3) Shadi Ebrahimi (**PhD**) – current
4) Nathan Price (**PhD**) – current
5) Marcia Golmohamadi (**PhD**) – current
6) Shanshan Bi (**PhD**) - current
7) Vinodhini Ravikumar (**MS – Thesis**) – current
8) George Harris (**MS – Thesis**) – current
9) Abhinav Saxena (**BS – research assistantship**) – current
10) Rober Evans (**BS – research assistantship**) – current

Teaching

1) Missouri S&T,   06/2006 – Present

   a) **Wireless Networks**   **CpE/EE/SysEng 348 Graduate Level**
      Taught in: SS2006, SS2007, SP2008,
              SP2009, SP2010, SP2011,
              SP2012, SP2013

   b) **Wireless Ad Hoc and Sensor Networks**   **CpE/EE/SysEng 443 Graduate Level**
      Taught in: FS2006, FS2007, FS2008,
              FS2010, FS2011, FS2013

   c) **Introduction to Computer Engineering**   **CpE 111 Undergraduate Level**
      Taught in: FS2009, FS2012

   d) **Digital Systems Design**   **CpE 213 Undergraduate Level**
      Taught in: SP2010, SP2012, SP2013

   e) **Principles of Computer Architecture**   **CpE 313 Graduate/Undergraduate Level**
      Taught in: SP2011

   f) **Senior Design Course (LAB)**   **CpE/EE 391 Undergraduate Level**
      Taught in: FS2012, FS2013

Overall Teaching Effectiveness Evaluation:

Current Average of Teaching Effectiveness = 3.1