John MacLaren Walsh
Extended Curriculum Vitae

1 Current position

Rank:	Associate Professor
Department:	Department of Electrical and Computer Engineering
Laboratories:	Director, Adaptive Signal Processing and Information Theory Research Group

2 Contact Information

Office Address:	Department of Electrical and Computer Engineering Drexel University 3141 Chestnut Street, Bossone 203 Philadelphia, PA 19104-2875
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Personal URL:	`http://www.ece.drexel.edu/walsh/web/`
Laboratory URL:	`http://www.ece.drexel.edu/walsh/aspitrg/home.html`

3 Education

2006, 2004, 2002 — **PhD, MS, BS** in Electrical and Computer Engineering
Cornell University, Ithaca, New York
Advisor: C. Richard Johnson, Jr.

4 Employment

2012 – present: **Associate Professor**

2006 – 2012: **Assistant Professor**
Department of Electrical and Computer Engineering
Drexel University, Philadelphia, Pennsylvania

Summer 2006: **Visiting Researcher**
Department of Electrical and Computer Engineering
University of British Columbia (w/ Vikram Krishnamurthy, Area: Time Scale Separation in Ion Channel Permeation Models)

2002 – 2006: **Graduate Research Assistant**
Department of Electrical and Computer Engineering
Cornell University, Ithaca, NY. (w/ C. Richard Johnson, Jr.)

Summer '00, '01: **Test Engineer**
Raytheon, Depot Operations. Norfolk, VA.
Tested circuit card assemblies and developed testing programs for computer assisted circuit card assembly testing equipment.

5 Research Activities

Notation used for publications in this document is as follows:

R	Refereed journal
S/R	Submitted refereed journal
C/R	Refereed Conference
S/C	Submitted conference
I/C	Invited conference
P	Patent invention disclosure
T	Technical report
D	Dissertation/thesis

Copies of all publications are available in pdf format at:
`http://www.ece.drexel.edu/walsh/web/listOfPubs.html`

5.1 Refereed Journal Publications (published or to appear)

Total: 11
At Drexel: 10
Last 5 Years: 11

1. R-2012 S. Ramanan and J. M. Walsh, "Practical Codes for Collaborative Estimation," *IEEE Trans. Signal Processing*, vol. 60, no. 6, pp. 32033216, June 2012.

2. R-2011 **J. M. Walsh**, S. Weber, "A Recursive Construction of the Set of Binary Entropy Vectors and Related Computable Inner Bounds for the Entropy Region," *IEEE Transactions on Information Theory*, vol. 57, no. 10, pp. 6356–6363, Oct. 2011.

3. R-2011 C. Maina, **J. M. Walsh**, "Joint Speech Enhancement and Speaker Identification Using Approximate Bayesian Inference," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 19, no. 6, pp. 1517 - 1529, Aug. 2011.

4. R-2011 **J. M. Walsh**, S. P. Weber, J. C. de Oliveira, A. Eryilmaz, M. Médard, "Trading Rate for Delay at the Application and Transport Layers (Guest Editorial)," *IEEE J. Select. Areas Commun.*, vol. 29, no. 5, pp. 913-915, May 2011

5. R-2010 **J. M. Walsh**, P. A. Regalia, "On the relationship between belief propagation decoding and joint maximum likelihood detection," *IEEE Transactions on Communications*, vol. 58, no. 10, pp. 2753-2758, Oct. 2010.

6. R*-2010 **J. M. Walsh**, P. A. Regalia, "Belief Propagation, Dykstra's Algorithm, and Iterated Information Projections," *IEEE Transactions on Information Theory*, vol. 56, no. 8, pp. 4114-4128, Aug. 2010.

7. R-2010 S. Ramanan, **J. M. Walsh**, "Distributed Estimation of Channel Gains in Wireless Sensor Networks," *IEEE Transactions on Signal Processing*, vol. 58, no. 6, pp. 3097-3107, June 2010.

8. R*-2009 **J. M. Walsh**, S. Weber, and C. wa Maina, "Optimal Rate Delay Tradeoffs and Delay Mitigating Codes for Multipath Routed and Network Coded Networks," *IEEE Transactions on Information Theory*, vol. 55, no. 12, pp. 5491-5510, Dec. 2009.

9. R*-2007 P. A. Regalia and **J. M. Walsh**, "Optimality and Duality Aspects of the Turbo Decoder," *Proceedings of the IEEE*, vol. 95, no. 6, pp. 1362-1377, June 2007.

10. R*-2006 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "Turbo Decoding as Iterative Constrained Maximum-Likelihood Sequence Detection," *IEEE Transactions on Information Theory*, vol. 52, no. 12, pp. 5426-5437, December 2006.

11. R-2005 R. K. Martin, **J. M. Walsh**, and C. R. Johnson, Jr., "Low complexity MIMO blind, adaptive channel shortening," *IEEE Transactions on Signal Processing*, vol. 53, no. 4, pp. 1324-1334, April 2005.

5.2 Refereed Journal Publications (under review)

Total:	**2**
At Drexel:	**2**
Last 5 Years:	**2**

12. S/R-2012 Yunshu Liu, Congduan Li, and **J. M. Walsh**, "Bounding Entropy Geometry: A Review and a Perspective on its Interplay with Information Geometry," *IEEE J. Selected Topics in Signal Processing*, submitted to Special Issue on Differential Geometry in Signal Processing on Sept. 15, 2012.

13. S/R-2011 C. Maina, **J. M. Walsh**, "Log Spectra Enhancement using Speaker Dependent Priors for Speaker Verification," under review in *IEEE Transactions on Audio, Speech, Language Processing*. Submitted March 14, 2011. Revised July 15, 2011. 2nd Review received September, 2011. Undergoing further revision.

5.3 Conference Publications (published or to appear)

Total:	**34**
At Drexel:	**24**
Last 5 Years:	**26**

14. C/R-2012 Congduan Li, **J. M. Walsh**, S. Weber, "A computational approach for determining rate regions and codes using entropic vector bounds," in *50th Annual Allerton Conference on Communication, Control and Computing*, Oct. 2012, to appear.

15. C/R-2011 C. Maina, **J. M. Walsh**, "Log Spectra Enhancement using Speaker Dependent Priors for Speaker Verification," in *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2011)*, May 2011, 4 pages.

16. C/R-2011 S. Ramanan, **J. M. Walsh**, "Practical Codes for Lossy Compression when Side Information May be Absent," in *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2011)*, May 2011, 4 pages.

17. C/R-2011 C. Maina, **J. M. Walsh**, "Compensating for Noise and Mismatch in Speaker Verification Systems Using Approximate Bayesian Inference," in *Conference on Information Sciences and Systems*, March 2011, 6 pages.

18. C/R-2011 G. Ku, **J. M. Walsh**, "Power Amplifier Nonlinearity Effects on OFDM Subcarrier Transmit Beamforming," in *IEEE Wireless Communications and Networking Conference (WCNC)*, Mar. 2011, 6 pages.

19. C/R-2010 S. Ramanan, **J. M. Walsh**, "Coding Perspectives for Collaborative Distributed Estimation Over Networks," in *44th Asilomar Conference on Signals, Systems, and Computers*, Nov. 2010, 8 pages.

20. C/R-2010 **J. M. Walsh**, S. Weber, "Relationships Among Bounds for the Region of Entropic Vectors in Four Variables," in *48th Annual Allerton Conference on Communication, Control, and Computing*, Sep. 2010, 8 pages.

21. C/R-2010 C. Maina, **J. M. Walsh**, "Joint Speech Enhancement and Speaker Identification Using Approximate Bayesian Inference," in *44th Annual Conference on Information Sciences and Systems (CISS)*, Mar. 2010, 6 pages.

22. C/R-2009 **J. M. Walsh** and S. Weber, "A Recursive Construction of the Set of Binary Entropy Vectors," in *47th Allerton Conference on Communication, Control, and Computing*, Sep. 2009, 10 pages.

23. C/R-2009 C. Maina, **J. M. Walsh**, "Joint Speech Enhancement and Speaker Identification Using Monte Carlo Methods," in *10th Annual Conference of the International Speech Communication Association (Interspeech 2009)*, Sep. 2009, 4 pages.

24. C/R-2008 S. Ramanan, **J. M. Walsh**, "Distributed Estimation of Channel Gains in Sensor Networks," in *42nd Asilomar Conference on Signals, Systems, and Computers*, Nov. 2008, 5 pages.

25. C/R-2008 **J. M. Walsh** and S. Weber, "Capacity Region of the Permutation Channel," in *46th Allerton Conference on Communication, Control, and Computing*, Sep. 2008, 6 pages.

26. C/R-2008 **J. M. Walsh**, P. A. Regalia, and S. Ramanan, "Optimality of Expectation Propagation Based Distributed Estimation for Wireless Sensor Network Initialization," *Proceedings of the 9th IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, July, 2008, pp. 620–624.

27. C/R-2008 **J. M. Walsh**, S. Weber, and C. Maina, "Optimal Rate Delay Tradeoffs for Multipath Routed and Network Coded Networks," *Proceedings of the IEEE International Symposium on Information Theory (ISIT)*, July, 2008, pp. 682–686.

28. C/R-2008 **J. M. Walsh** and P. A. Regalia, "Belief propagation distributed estimation in sensor networks: An optimized energy accuracy tradeoff," *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing*, April 2008, pp. 2297–2300.

29. C/R*-2008 Y. E. Kim, **J. M. Walsh**, and T. M. Doll, "Comparison of a Joint Iterative Method for Multiple Speaker Identification with Sequential Blind Source Separation and Speaker Identification," *Proceedings of Odyssey 2008: The Speaker and Language Recognition Workshop*, January, 2008, 8 pages.

30. C/R-2008 **J. M. Walsh** and S. Weber, "A Concatenated Network Coding Scheme for Multimedia Transmission," *Proceedings of the Fourth Workshop on Network Coding, Theory, and Applications (Netcod 2008)*, January, 2008, pp. 91–96.

31. C/R-2007 **J. M. Walsh**, "A completed information projection interpretation of expectation propagation," *Proceedings of the Neural Information Processing Systems Workshop on Approximate Bayesian Inference in Continuous/Hybrid Systems*, November, 2007

32. C/R-2007 **J. M. Walsh** and S. Weber, "Coding to reduce delay on a permutation channel," *45th Allerton Conference on Communication, Control, and Computing*, September, 2007, 8 pages.

33. C/R-2007 **J. M. Walsh**, Y. E. Kim, and T. M. Doll, "Joint iterative multi-speaker identification and source separation using expectation propagation," *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, October, 2007, pp. 283–286.

34. C/R-2007 **J. M. Walsh** and P. A. Regalia, "Expectation propagation for distributed estimation in sensor networks," in *8th IEEE International Workshop on Signal Processing Advances for Wireless Communications (SPAWC)*, Helsinki, Finland, June 2007, 5 pages.

35. C/R-2007 **J. M. Walsh**, "EXIT and Density Evolution Analysis for Homogeneous Expectation Propagation," in *IEEE International Symposium on Information Theory*, Nice, France, July 2007, pp. 876–880.

36. C/R-2007 **J. M. Walsh**, "Density evolution for expectation propagation," in *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, vol. 2, Honolulu, Hawaii, April, 2007, pp. II–545–II–548.

37. C/R-2006 **J. M. Walsh**, "Dual optimality frameworks for expectation propagation," in *Proc. Seventh IEEE Int. Conf. on Sig. Proc. Adv. in Wireless Comm. (SPAWC)*, July 2006, pp. 1–5.

38. C/R-2006 **J. M. Walsh** and P. A. Regalia, "Iterative constrained maximum likelihood estimation via expectation propagation," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, May 2006, pp. V–713–V–716.

39. C/R-2006 **J. M. Walsh** and P. A. Regalia, "Connecting belief propagation with maximum likelihood detection," in *Fourth International Symposium on Turbo Codes and Related Topics*, Apr. 2006, 6 pages.

40. C/R-2005 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "Turbo decoding as constrained optimization," in *43rd Allerton Conference on Communication, Control, and Computing.*, Sept. 2005, 10 pages.

41. C/R-2005 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "A convergence proof for the turbo decoder as an instance of the Gauss-Seidel iteration," in *IEEE Int. Symp. Inform. Theory, Adelaide, Australia*, Sept. 2005, pp. 734–738.

42. C/R-2005 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "The turbo decoder as a least squares cost gradient descent," in *IEEE Conference on Signal Processing Advances in Wireless Communications (SPAWC)*, New York, NY, June 2005, pp. 675–679.

43. C/R-2005 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "A refined information geometric interpretation of turbo decoding," in *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Philadelphia, PA, Mar. 2005, pp. V–713–V–716.

44. C/R-2004 J. M. Walsh, R. K. Martin, A. G. Klein, N. S. Xenias, J. A. Pagnotta, and C. R. Johnson, Jr., "Necessary and sufficient conditions for perfect channel shortening and implications for interference mitigation," in *Proc. V IEEE Signal Processing Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Lisbon, Portugal, July 2004, pp. 391–395.

45. C/R-2004 R. K. Martin, **J. M. Walsh**, and C. R. Johnson, Jr., "Low complexity MIMO blind adaptive channel shortening," in *Proc. International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Montreal, Quebec, May 2004, pp. IV–1073–IV–1076.

46. C/R-2004 **J. M. Walsh** and C. R. Johnson, Jr., "Series feedforward interconnected adaptive devices," in *Proc. The International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, May 2004, pp. II–445–II–448.

47. C/R-2004 **J. M. Walsh**, P. A. Regalia, and C. R. Johnson, Jr., "Joint synchronization and decoding exploiting the turbo principle," in *The 2004 Conference on Information Sciences and Systems*, Mar. 2004, 6 pages.

5.4 Invited Conference Publications

Total:	**6**
At Drexel:	**4**
Last 5 Years:	**4**

48. I/C-2012 S. Weber, Congduan Li, **J.M. Walsh**, "Rate Region for A Class of Delay Mitigating Codes and P2P Networks," in *46th Annual Conference on Information Sciences and Systems*, Mar. 2012, 6 pages

49. I/C-2011 C. Maina, **J. M. Walsh**, "Approximate Bayesian Inference for Robust Speech Processing," in *45th Asilomar Conference on Signals, Systems, and Computers*, Nov. 2011, 4 pages.

50. I/C-2008 C. Maina, **J. M. Walsh**, "A Cost Function Level Analysis of Autocorrelation Based Blind Adaptive Channel Shorteners," in *42nd Asilomar Conference on Signals, Systems, and Computers*, Nov. 2008, 5 pages.

51. I/C-2006 **J. M. Walsh**, R. K. Martin, and C. R. Johnson, Jr., "Convergence and Performance Issues for Autocorrelation Based Adaptive Channel Shortening," in *40th Asilomar Conference on Signals, Systems, and Computers*, Nov. 2006, pp. 238–242, 5 pages.

52. I/C-2003 C. R. Johnson, Jr., R. K. Martin, **J. M. Walsh**, A. G. Klein, C. E. Orlicki, and T. Lin, "Blind channel shorteners, invited paper," in *Proc. The 13th IFAC Symposium on System Identification, Rotterdam, The Netherlands*, Aug. 2003.

53. I/C-2002 W. Sethares, **J. M. Walsh**, and C. R. Johnson, Jr., "An adaptive view of timing and synchronization in telecommunication systems," in *Proceedings of the 45th IEEE International Midwest Symposium on Circuits and Systems (invited paper)*, 2002.

5.5 Theses and Technical Reports

Total:	**6**
At Drexel:	**4**
Last 5 Years:	**4**

54. D-2011 S. Ramanan, Collaborative Estimation in Networks, Ph. D. dissertation, Drexel University, 2011.

55. D-2011 C. Maina, Approximate Bayesian Inference for Robust Speech Processing, Ph. D. dissertation, Drexel University, 2011.

56. T-2009 J. M. Walsh and S. Ramanan, "Coding Perspectives for Collaborative Distributed Estimation over Networks," Dec. 2009, Adaptive Signal Processing and Information Theory Research Group Technical Report ASPITRG.TR.12.09.2.

57. T-2009 J. M. Walsh, "Proof that the Global Optimum of the Relaxed Constrained Maximum Likelihood Detection Approaches a Point Mass at the MLSD as $c \to 0$," Dec. 2009, Adaptive Signal Processing and Information Theory Research Group Technical Note ASPITRG.TN.12.09.1.

58. D-2006 J. M. Walsh, Distributed Iterative Decoding and Estimation via Expectation Propagation: Performance and Convergence, Ph.D. dissertation, Cornell University, 2006.

59. D-2004 J. M. Walsh, Distributed Adaptive Signal Processing: A Study of Series Feedforward Binary Adaptive Compounds. M. S. Thesis. Cornell University, Jan. 2004.

5.6 Ph.D. Students supervised to completion

Total:	**2**
At Drexel:	**2**
Last 5 Years:	**2**

1. **Sivagnanasundaram Ramanan**
   Dissertation: Collaborative Estimation in Networks
   Defense: July 28, 2011
   Funded by: Drexel University start-up funds
   NSF Awards — CCF-0728496 & CCF-1016588
   Exit Job: Staff Engineer, ARCON Corporation

2. **Ciira wa Maina**
   Dissertation: Approximate Bayesian Inference for Robust Speech Processing
   Defense: June 8, 2011
   Funded by: Drexel University start-up funds
   NSF Awards — CCF-0728496 & CCF-1016588
   Exit Job: Postdoctoral Research Associate in Statistical Inference in Computational Biology, Sheffield Institute for Translational Neuroscience (SITRAN), Univ. of Sheffield, UK.

5.7 Ph.D. Students supervision in progress

Total:	**7**
At Drexel:	**7**
Last 5 Years:	**7**

3. **Gwanmo Ku**
   Qualified: n/a
   Funded by: NSF Grants CCF-0728496, CCF-1016588. AFOSR FA9550-12-1-0086
4. **Congduan Li**
   Qualified: n/a
   Funded by: NSF Grant CCF-1016588
5. **Yunshu Liu**
   Qualified: n/a
   Funded by: NSF Grant CCF-1053702
6. **Jayant Apte**
   Qualified: n/a
   Funded by: NSF Grant CCF-1053702
7. **David Cinciruk**
   Qualified: n/a
   Funded by: NSF Grant IIS-1152288
8. **Jie Ren**
   Qualified: n/a
   Funded by: AFOSR FA9550-12-1-0086
9. **Mengke Hu**
   Qualified: n/a
   Funded by: NSF Grant IIS-1152288

5.8 Invited Research Presentations & Demonstrations

Total:	**19**
At Drexel:	**14**
Last 5 Years:	**19**

	Date	Presentation
1.	Feb. 2012	Information Theory & Applications Workshop, UCSD "Characterizing the Region of Entropic Vectors via Information Geometry"
1.	Feb. 2011	Information Theory & Applications Workshop, UCSD " Fundamental Limits and Practical Codes for Collaborative Estimation"
2.	Nov. 2010	AFOSR Complex Network Program Review "Energy Efficient Distributed Wireless Resource Allocation" (with S. Weber & L. Cimini, given by L. Cimini)
3.	Jul. 2010	McGill University ECE Dept. Seminar "Coding Perspectives for Collaborative Estimation over Networks"
4.	Feb. 2010	Information Theory & Application Workshop, UCSD "Tunable Inner Bounds for the Region of Entropy Vectors"
5.	Dec. 2009	Demonstration at Neural Information Processing Symposium "Robust Speaker Recognition Using Approximate Bayesian Inference" (given by C. Maina)
6.	Nov. 2009	University of Delaware ECE Dept. Seminar "Coding Perspectives for Collaborative Estimation over Networks"
7.	Sep. 2009	DARPA IT MANET Meeting, MIT "An Inner Bound Technique on the Normalized Set of Entropy Vectors" (Poster given by Steven Weber)
8.	Mar. 2009	DARPA IT MANET Meeting, Stanford University "Properties of the Binary Entropy Vector Region" (Poster given by Steven Weber)
9.	Feb. 2009	AFOSR Complex Networks Program Review "Optimal Coded Information Network Design and Management via Improved Characterizations of the Binary Entropy Function"
10.	Sept. 2008	DARPA ITMANET Project Meeting, Arlington, VA "Capacity Region of the Permutation Channel" (Poster given by Steven Weber)

11. Sept. 2008 DARPA ITMANET Project Meeting, Arlington, VA
"Fundamental Rate Delay Tradeoffs in Multipath Routed and Network Coded Networks"
(Presentation given by Steven Weber)

12. June 2008 P. Dewilde Workshop, Wassenaar
"Information Projection Algorithms and Belief Propagation" (given by Phil Regalia)

13. April 2008 MIT Workshop on Geometric Approaches in Communication and Signal Processing
" Belief Propagation, Information Projections, and Dykstra's Algorithm "

14. April 2008 MIT Workshop on Geometric Approaches in Communication and Signal Processing
" Fundamental Rate Delay Tradeoffs in Multipath Routed and Network Coded Networks " (with Steven Weber)

15. Mar. 2006 University of Rochester ECE Dept.
"Distributed Iterative Decoding and Estimation via Expectation Propagation: Performance and Convergence"

16. Feb. 2006 Drexel University ECE Dept.
"Distributed Iterative Decoding and Estimation via Expectation Propagation: Performance and Convergence"

17. Feb. 2006 University of Maine ECE Dept.
"Distributed Iterative Decoding and Estimation via Expectation Propagation: Performance and Convergence"

18. Sept. 2005 The Australian National University
"The Where, When, and Turbo Decoder Convergence"

19. Sept. 2005 University of Melbourne
"The Where, When, and Turbo Decoder Convergence"

5.9 Research Proposals

Total:	**33**
At Drexel:	**33**
Last 5 Years:	**33**

Research Funds Awarded:

Total: $ 3,557,988

Notation used for proposals in this document is as follows:

RG	Research Grant (funded)
RS	Research Proposal (pending review as of July 28, 2011)
RP	Research Proposal (not funded)

The funds obtained from an external sponsor (outside Drexel) are marked in bold:

1. RG-2012
   - *Sponsor:* Air Force Office of Scientific Research
   - *Title:* Overhead-Performance Tradeoffs in Distributed Wireless Networks: A Unifying Framework, Fundamental Limits, and Practical Controllers
   - *PI:* Leonard J. Cimini, Jr. (U. Delaware)
   - *Co-Is:* John MacLaren Walsh, Steven Weber
   - *Amount:* $805,671 (Subcontract to Drexel) (DU: $0, Sponsor **$805,671**)
   - *Duration:* 2012-2015

2. RG-2011
   - *Sponsor:* National Science Foundation
   - *Title:* CAREER: Entropy Geometry in Variational Inference Signal Processing
   - *PI:* **John MacLaren Walsh**
   - *Co-Is:* n/a
   - *Amount:* $500,000 (DU: $0, Sponsor **$500,000**)
   - *Duration:* 2011-2016

3. RG-2010
   - *Sponsor:* National Science Foundation
   - *Title:* NeTSE:Small: Connections over Multiple Network Paths via Delay Mitigating Codes
   - *PI:* **John MacLaren Walsh**
   - *Co-Is:* Steven Weber, Jaudelice de Oliveira, Youngmoo Kim
   - *Amount:* $500,000 (DU: $0, Sponsor **$500,000**)
   - *Duration:* 2010-2013

4. RG-2007
   - *Sponsor:* National Science Foundation
   - *Title:* Collaborative Research: Distributed Estimation in Wireless Sensor Networks via Expectation Propagation
   - *PI:* **John MacLaren Walsh**
   - *Co-Is:* None (Collaborative Research w/ Phillip Regalia, Catholic U. of A.)
   - *Amount:* $249,936 (DU: $0, Sponsor **$249,936**)
   - *Duration:* 2007-2010

5.	RG-2011	*Sponsor:*	National Science Foundation
		Title:	EAGER: Performance and Complexity in Joint Speech Enhancement and Speaker Recognition
		PI:	**John MacLaren Walsh**
		Co-Is:	Youngmoo Kim
		Amount:	$150,000 (DU: $0, Sponsor **$150,000**)
		Duration:	2011-2012
6.	RG-2010	*Sponsor:*	National Science Foundation
		Title:	A Framework for Wireless Network Security Based on Reconfigurable Antennas
		PI:	Kapil Dandekar
		Co-Is:	**John MacLaren Walsh**, Rachel Greenstadt
		Amount:	$359,506 (DU: $0, Sponsor **$359,506**)
		Duration:	2010-2013
7.	RG-2008	*Sponsor:*	Air Force Office of Scientific Research STTR
		Title:	Utility-based Distributed Heterogeneous Network Management
		PI:	**Drakontis, LLC**
		Co-Is:	Steven Weber, **John MacLaren Walsh**
		Amount:	$60,000 (DU: $0, Sponsor **$60,000**)
		Duration:	2008-2009
8.	RG-2008	*Sponsor:*	Army CECOM (Applied Communications and Information Networking Program)
		Title:	ACIN Phase VIII: CREW
		PI:	Moshe Kam
		Co-Is:	Kapil R. Dandekar and **John MacLaren Walsh**
		Amount:	$500,000 (DU: $0, Sponsor **$500,000**)
		Duration:	2008-2009
9.	RG-2009	*Sponsor:*	Army CECOM (Applied Communications and Information Networking Program)
		Title:	ACIN Phase IX: CREW
		PI:	Moshe Kam
		Co-Is:	Kapil R. Dandekar and **John MacLaren Walsh**
		Amount:	$400,000 (DU: $0, Sponsor **$400,000**)
		Duration:	2009-2010
10.	RG-2010	*Sponsor:*	National Science Foundation
		Title:	Collaborative Research: Distributed Estimation in Wireless Sensor Networks via Expectation Propagation (REU Supplement)
		PI:	**John MacLaren Walsh**
		Co-Is:	None (Collaborative Research w/ Phillip Regalia, Catholic U. of A.)
		Amount:	$25,000 (DU: $0, Sponsor **$25,000**)
		Duration:	2010-2011

11.	RG-2011	*Sponsor:*	National Science Foundation
		Title:	CAREER: Entropy Geometry in Variational Inference Signal Processing (REU Supplement)
		PI:	**John MacLaren Walsh**
		Co-Is:	n/a
		Amount:	$7,875 (DU: $0, Sponsor **$7,875**)
		Duration:	2011-2012
12.	RS-2011	*Sponsor:*	National Science Foundation
		Title:	TUES: Multidisciplinary Curriculum Improvement and Innovation Using Software Defined Radio
		PI:	Kapil Dandekar
		Co-Is:	John Walsh, Mark Hempstead, Naga Kandasamy, Rachel Greenstadt
		Amount:	$99,374 (DU: $0, Sponsor **$99,374**)
		Duration:	2012-2013
13.	RS-2011	*Sponsor:*	National Science Foundation and Domestic Office of Nuclear Detection
		Title:	Urban Sensor Network for Detection, Classification, and Mitigation of Nuclear Release
		PI:	Kapil Dandekar
		Co-Is:	Bakhtier Farouk, Moshe Kam, Christopher Peters, John Walsh
		Amount:	$1,923,404 (DU: $0, Sponsor **$1,923,404**)
		Duration:	2011-2016
14.	RS-2009	*Sponsor:*	Air Force Office of Scientific Research
		Title:	Optimal Coded Information Network Design via Improved Characterizations of the Binary Entropy Function
		PI:	John MacLaren Walsh
		Co-Is:	Steven Weber
		Amount:	$551,136 (DU: $0, Sponsor **$551,136**)
		Duration:	2009-2012
15.	RS-2008	*Sponsor:*	Air Force Office of Scientific Research
		Title:	Delay Mitigating Codes (Young Investigator Proposal)
		PI:	John MacLaren Walsh
		Co-Is:	None
		Amount:	$387,358 (DU: $0, Sponsor **$387,358**)
		Duration:	2009-2012
16.	RS-2008	*Sponsor:*	Air Force Office of Scientific Research
		Title:	Cyclic Information Projections applied to Iterative Estimation and Decision Algorithms
		PI:	**John MacLaren Walsh**
		Co-Is:	Phillip Regalia, Catholic University of America
		Amount:	$392,198 (Drexel Portion) (DU: $0, Sponsor **$392,198**)
		Duration:	2008-2011

17.	RP-2010	*Sponsor:*	National Science Foundation
		Title:	RI:Small: Complexity v.s. Performance of Approximate Bayesian Robust Speech Processing
		PI:	John MacLaren Walsh
		Co-Is:	Youngmoo Kim
		Amount:	$499,993 (DU: $0, Sponsor **$499,993**)
		Duration:	2011-2014
18.	RP-2010	*Sponsor:*	National Science Foundation
		Title:	NeTS:Medium:Collaborative Research:Energy Efficient Distributed Wireless Resource Allocation
		PI:	John MacLaren Walsh
		Co-Is:	Steven Weber
		Amount:	$479,992 (DU: $0, Sponsor **$479,992**)
		Duration:	2011-2014
19.	RP-2010	*Sponsor:*	National Science Foundation
		Title:	TUES: Multidisciplinary Curriculum Improvement and Innovation Using Software Defined Radio
		PI:	Kapil Dandekar
		Co-Is:	John Walsh, Mark Hempstead, Naga Kandasamy, Rachel Greenstadt
		Amount:	$99,374 (DU: $0, Sponsor **$99,374**)
		Duration:	2011-2012
20.	RP-2009	*Sponsor:*	National Science Foundation
		Title:	RI:Small: Complexity v.s. Performance of Approximate Bayesian Robust Speech Processing
		PI:	John MacLaren Walsh
		Co-Is:	Youngmoo Kim
		Amount:	$499,986 (DU: $0, Sponsor **$499,986**)
		Duration:	2010-2013
21.	RP-2009	*Sponsor:*	National Science Foundation
		Title:	NeTS:Large: Collaborative Research: ROBust cOmmunication via COOPerative mobile nodes (ROBOCOOP)
		PI:	Athina Petropulu
		Co-Is:	Hande Benson, Ani Hsieh, John Walsh, Steven Weber
		Amount:	$1,731,146 (DU: $0, Sponsor **$1,731,146**)
		Duration:	2010-2013
22.	RP-2009	*Sponsor:*	National Science Foundation and Domestic Office of Nuclear Detection
		Title:	Placement Optimization and Data Fusion for a Nuclear Detection Sensor Network
		PI:	Kapil Dandekar
		Co-Is:	J. Walsh, M. Kam, B. Farouk
		Amount:	$1,545,978 (DU: $0, Sponsor **$1,545,978**)
		Duration:	2009-2012

23.	RP-2008	*Sponsor:*	National Science Foundation
		Title:	Optimal Coded Information Network Design via Improved Characterizations of the Binary Entropy Function
		PI:	John MacLaren Walsh
		Co-Is:	Steven Weber
		Amount:	$448,039 (DU: $0, Sponsor **$448,039**)
		Duration:	2009-2012
24.	RP-2009	*Sponsor:*	Army Research Office
		Title:	NS CTA: Context Orient Network Research Center on Communications Networks
		PI:	Kapil Dandekar
		Co-Is:	J. Walsh, A. Fontecchio, R. Greenstadt, T. Hewett, M. Kam, T. Kurzweg, W. Regli, S. Weber
		Amount:	$ (DU: $, Sponsor **$**)
		Duration:	2009-2012
25.	RP-2008	*Sponsor:*	National Science Foundation
		Title:	Joint Speech Separation and Speaker Identification
		PI:	John MacLaren Walsh
		Co-Is:	Youngmoo Kim
		Amount:	$460,258 (DU: $0, Sponsor **$460,258**)
		Duration:	2009-2012
26.	RP-2008	*Sponsor:*	Air Force Research Lab
		Title:	Joint Sound Source Separation and Speaker Identification Using Expectation Propagation
		PI:	Youngmoo E. Kim
		Co-Is:	John MacLaren Walsh
		Amount:	$300,000 (DU: $000, Sponsor **$300,000**)
		Duration:	2008-2011
27.	RP-2008	*Sponsor:*	National Science Foundation
		Title:	Towards Application Aware Network Programmable Congestion Control
		PI:	Jaudelice de Oliveira
		Co-Is:	Steven Weber, **John MacLaren Walsh**
		Amount:	$439,816 (DU: $0, Sponsor **$439,816**)
		Duration:	2008-2011
28.	RP-2008	*Sponsor:*	National Science Foundation
		Title:	Delay Mitigating Codes and Fundamental Rate Delay Tradeoffs for Connection Oriented Transmission over Multipath Routed and Network Coded Networks
		PI:	**John MacLaren Walsh**
		Co-Is:	Steven Weber
		Amount:	$440,360 (DU: $0, Sponsor **$440,360**)
		Duration:	2008-2011

29.	RP-2007	*Sponsor:*	National Science Foundation
		Title:	RI: Joint Sound Source Separation and Recognition
		PI:	**John MacLaren Walsh**
		Co-Is:	Youngmoo E. Kim
		Amount:	$449,996 (DU: $0, Sponsor **$449,996**)
		Duration:	2008-2011
30.	RP-2007	*Sponsor:*	National Science Foundation
		Title:	CAREER: Distributed Approximate Statistical Inference via Expectation Propagation - Performance, Convergence, and Applications
		PI:	**John MacLaren Walsh**
		Co-Is:	None
		Amount:	$502,153 (DU: $0, Sponsor **$502,153**)
		Duration:	2008-2013
31.	RP-2007	*Sponsor:*	National Science Foundation and Domestic Office of Nuclear Detection
		Title:	Placement Optimization and Data Fusion for a Nuclear Detection Sensor Network
		PI:	Moshe Kam
		Co-Is:	Kapil R. Dandekar, Bakhtier Farouk, C. J. Martoff, **John MacLaren Walsh**
		Amount:	$1,990,609 (DU: $0, Sponsor **$1,990,609**)
		Duration:	2007-2012
32.	RP-2007	*Sponsor:*	Office of Naval Research
		Title:	Distributed Ultra Wideband Multiple Input Multiple Output Radar Networks
		PI:	Kapil R. Dandekar
		Co-Is:	Moshe Kam, **John MacLaren Walsh**, Adam K. Fontecchio,
		Amount:	$900,000 (DU: $0, Sponsor **$900,000**)
		Duration:	2007-2010
33.	RP-2007	*Sponsor:*	National Science Foundation
		Title:	RI: Expectation Propagation: Performance, Convergence & Applications
		PI:	**John MacLaren Walsh**
		Co-Is:	None
		Amount:	$414,905 (DU: $0, Sponsor **$414,905**)
		Duration:	2007-2010

6 Teaching Activities

6.1 Summary of Courses Taught and Student Evaluations

The following lists the courses I taught in the Fall (F), Winter (W), and Spring (S) terms since I joined Drexel. Graduate and undergraduate courses are denoted as G and UG respectively. Courses for which I was the only instructor are in a separate table from courses where I taught recitations and a different primary instructor taught lectures and created materials.

Also contained in the table is data from Drexel College of Engineering's various online course evaluation systems. These systems have been plagued with server problems, lack of student usage, and wrong computations. The college has gone through three online course evaluation systems in 5 years, with one year long period in which no online data was collected for the college at all. Additionally, the system that was in service from January 2009 through January 2011 does not display any response data if there are fewer than 5 responses. Finally, even the latest system treats an unanswered question in a partially filled out survey as an answer of 0 when calculating statistics. Nevertheless, the data that is available through these systems is displayed in the table below: # st. indicates the number of students in the course, # rs. indicates the number of students which responded to the course evaluation instructor rating question, Avg. is the average score answer to the question "What is your overall rating of the instructor (1-poor, 3-average, 5-outstanding), and Std. is the standard deviation of the same.

I also collected my own evaluations for courses in which I was the primary instructor, and these are available upon request.

Courses for which I was the only instructor & lecturer:

	Term		Number	Title	# St.	# Rs.	Avg.	Std.
F	2006-07	G	ECE-S631	Fundamentals of Deterministic DSP	13	6	4.33	.75
W	2006-07	G	ECE-S632	Fundamentals of Statistical DSP	10	5	4.80	0.40
S	2006-07	G	ECE-S690	Advanced Statistical SP	8	4	4.75	.43
F	2007-08	G	ECE-S631	Fundamentals of Deterministic DSP	20	5	3.4	0.80
W	2007-08	G	ECE-S632	Fundamentals of Statistical DSP	9	n/a	n/a	n/a
S	2007-08	G	ECE-S690	Advanced Statistical SP	6	n/a	n/a	n/a
F	2008-09	G	ECE-S631	Fundamentals of Deterministic DSP	15	n/a	n/a	n/a
W	2008-09	G	ECE-S632	Fundamentals of Statistical DSP	5	3	n/a	n/a
S	2008-09	G	ECE-T602	Information Theory and Coding	7	3	n/a	n/a
F	2009-10	G	ECE-S631	Fundamentals of Deterministic DSP	17	4	n/a	n/a
W	2009-10	G	ECE-S632	Fundamentals of Statistical DSP	12	3	n/a	n/a
W	2009-10	U	ECE-S302	Transform Methods & Filtering	18	6	4.33	1.03
S	2009-10	G	ECE-S811	Optimization	17	8	4.5	0.53
F	2010-11	G	ECE-S521	Probability and Random Variables	50	21	4.29	0.72
W	2010-11	G	ECE-S522	Random Processes and Spectral Analysis	40	28	4.1	1.0
S	2010-11	G	ECE-T602	Information Theory and Coding	12	4	4.75	0.50

Courses for which I was the secondary instructor (Recitation Only):

	Term		Number	Title	# St.	# Rs.	Avg.	Std.
F	2008-09	U	ENGR361	Statistical Analysis of Engineering Sys.	41	n/a	n/a	n/a
S	2008-09	U	ENGR361	Statistical Analysis of Engineering Sys.	29	0	n/a	n/a
F	2009-10	U	ENGR361	Statistical Analysis of Engineering Sys.	48	7	3.57	1.51
S	2009-10	U	ENGR361	Statistical Analysis of Engineering Sys.	56	13	3.46	1.26
F	2010-11	U	ENGR361	Statistical Analysis of Engineering Sys.	51	9	3.89	0.78
W	2010-11	U	ENGR361	Statistical Analysis of Engineering Sys.	22	10	4.1	0.87
S	2010-11	U	ENGR361	Statistical Analysis of Engineering Sys.	39	4	4.5	0.71

6.2 Graduate Courses Taught

Total:	**8**
At Drexel:	**8**
Last 5 Years:	**8**

1. **Fundamentals of Deterministic Digital Signal Processing (ECE-S631)**
URL: `http://www.ece.drexel.edu/walsh/eces631/eces631.html`
In this class students master linear time invariant discrete time systems and their associated analytical tools, including the discrete time Fourier transform, the discrete Fourier transform, and the Z-transform. They learn how to sample continuous time signals and systems to create discrete time signals and systems. They encounter the theory and technique of the linear filtering of digital signals. The project component of the class gives a sampling of some of the practical problems to which the tools taught can be applied. Specifically, the course covers:
   - **Discrete Time Fourier Transform (DTFT)** - Linear Time Invariant Systems: Properties, Linear Constant Coefficient Difference Equations, Expressing Signals and Systems with reference to Complex Exponentials
   - **Z - Transform** - Definition, Region of Convergence, Inverse Z Transform (Partial Fraction + Power Series Expansions), Properties
   - **Sampling** - Frequency Domain Interpretation of Sampling of Continuous Time Signals, Reconstruction from Samples, *Multi-rate Signal Processing* (Polyphase Decompositions)
   - **Transform Analysis** - Linear Constant Coefficient Difference Equations, All-pass, minimum phase, linear phase systems
   - **Filter Structures** - Structures for FIR and IIR filters, Quantization Effects
   - **Filter Design** - Windowing Techniques, *Optimal Filter Design*
   - **Discrete Fourier Transform (DFT)** - Finite Length + Periodic Discrete Time Signals, Implementation of Convolution using the DFT, Efficient Computation via FFT

2. **Fundamentals of Statistical Digital Signal Processing (ECE-S632)**
URL: `http://www.ece.drexel.edu/walsh/eces632/eces632.html`
In this class, students learn a collection of basic statistical signal processing problems and techniques. After reviewing a basis of tools from probability, random variables, and estimation theory, they encounter the problems of linear prediction, spectral estimation, source separation and independent component analysis, linear equalization, system identification.
   - **Review of Probability and Random Processes** - PMFs, CDFs, PDFs, Common R.V.s, expectation, transformations. Conditional probability & expectation, Bayes Theorem, total probability. Stationary and Wide Sense Stationary R.P.s. ARMA models.
   - **Some Prerequisite Estimation Theory** - Sufficient statistics, Maximum Likelihood Estimation, Bayesian Estimation, Unbiased Estimators, Minimum Variance Unbiased Estimators (MVUE), Minimum Mean Squared Error Estimation (MMSE) & Linear MMSE.
   - **Some Important Signal Processing Problem Families** - Spectral Estimation, Linear Prediction, Source Separation & Independent Component Analysis (blind v.s. trained), System Identification (blind v.s. trained), Equalization (blind v.s. trained).
   - **Methods for Spectral Estimation** - Periodogram (Schuster) & smooth version (Welch), Correlogram (Blackman- Tukey) & smooth version (Bartlett), Maximum Entropy (Burg).
   - **Estimation and Detection of Sinusoids in Noise** - Prony, Pisarenko, MUSIC
   - **Linear Prediction** - AR MMSE, Block "Efficient" computation with Levinson Durbin Algorithm, Adaptive Implementations.

3. **ST: Advanced Statistical Signal Processing (ECE-S690)**
URL: `http://www.ece.drexel.edu/walsh/eces631/eces631.html`
This class covers a blend of information theory, machine learning, and optimization. The material ranges from classic textbook material to results from recent research articles.
   - **Information Theory Essentials** - Typical Sequences, Source Coding (Lossless and Lossy), Channel Coding Theory, Source Channel Coding Separation Theorem
   - **Practical Compression and Channel Coding** - Huffman source codes, Arithmetic codes, Practical multimedia formats and relationship with ideal encoders, LDPC and Turbo channel codes: belief propagation decoding.
   - **Some Multiterminal Information Theory** - Broadcast and Multi-access Channels, Distributed Source Coding (Lossless and Lossy).
   - **Practical Multiterminal Coding** - LDPC/ turbo approaches to multi-terminal source and joint source/channel coding.
   - **Optimization: Convex and Nonlinear Programming** - Convexity, First Order Necessary Conditions (Constrained and Unconstrained), Second Order Sufficient Conditions for Local Optimality, Iterative Methods: Gradient Descent.
   - **Blind Signal Processing** - Blind Source Separation and Blind Equalization, Second Order Ambiguities, Higher Order Statistics Based Techniques (CMA)
   - **Exponential Families & Inference in Graphical Models**

4. **Information Theory & Coding (ECE-T602)**
URL: `http://www.ece.drexel.edu/walsh/ecet602/ecet602.html`
A graduate introductory course to information theory with an emphasis on efficient code & decoder construction. Specifically, the course covers:
   - **Information Theory Essentials** - Typical Sequences, Source Coding (Lossless and Lossy), Channel Coding Theory, Source Channel Coding Separation Theorem
   - **Practical Compression and Channel Coding** - Huffman source codes, Arithmetic codes, Practical multimedia formats and relationship with ideal encoders, LDPC and Turbo channel codes: belief propagation decoding.
   - **Some Multiterminal Information Theory** - Broadcast and Multi-access Channels, Distributed Source Coding (Lossless and Lossy).
   - **Practical Multiterminal Coding** - LDPC/ turbo approaches to multi-terminal source and joint source/channel coding.

5. **Optimization (ECE-S811)**
URL: `http://www.ece.drexel.edu/walsh/eces811/eces811.html`
This course covers:
   - **Linear Programming** - Structure of Polyhedra. The Simplex Method. Passing between representations of polyhedra: double descriptions and reverse search methods.
   - **Convex Optimization** - Convex sets and functions. Representations of convex sets. Convex and affine hulls, Carathéodory's theorem. Convex Programming, Karush Kuhn Tucker Conditions, Convex Conjugates and Duality. Some basic numerical methods: gradient descent, Newton's method, projections methods, POCS, Bregman projections.
   - **Nonlinear Programming** - Critical point classification: saddle, minimum, maximum, second order conditions, beyond second order examples (Monkey saddle, catastrophe theory). Fritz John conditions. Duality and Geometric Multipliers.

6. **Probability & Random Variables (ECE-S521)**
URL: `http://www.ece.drexel.edu/walsh/eces521/eces521.html`
A graduate level introduction to probability and random variables:
   - **Probability Theory**: axioms of probability, probability space, basic combinatorics
   - **Random Variables**: PMFs, CDFs, PDFs, expectation, sampling, transformations
   - **Multiple Random Variables**: joint CDFs, joint PDFs, joint characteristic functions, conditional distributions
   - **Limit Theorems**: laws of large numbers, central limit theorem, order statistics

7. **Random Processes & Spectral Analysis (ECE-S522)**
URL: `http://www.ece.drexel.edu/walsh/eces521/eces522.html`
A graduate level introduction to random processes:
   - **Parameterizing Stochastic Processes**: joint CDFs, notions of stationarity
   - **Spectral Theory**: Gaussian processes, Wide Sense stationarity, Power Spectral Density
   - **Smoothing & Filtering**: Spectral factorization, Wiener filtering
   - **Markov Processes & Markov Chains**: definition, state decomposition, ergodicity, stationary and limiting distributions, calculations

8. **ST: Multiterminal Information Theory (ECE-S690)**
URL: `http://www.ece.drexel.edu/walsh/eces690/eces690.html`
Advanced topics in multiterminal information theory for Ph.D. students:
   - multiterminal source coding, both lossless and lossy, as well as
   - network coding over directed acyclic graphs

6.3 Undergraduate Courses Taught

Total:	**1**
At Drexel:	**1**
Last 5 Years:	**1**

1. **Transform Methods and Filtering (ECE-S302)**
URL: `http://www.ece.drexel.edu/walsh/eces302/eces302.html`
This course covers:
   - Continuous Time Signals & Systems. Linear Time Invariant Systems.
   - Linear Constant Coefficient Differential Equations. Fourier Series.
   - Continuous Time Fourier Transform. Frequency Reponse of LTI Systems.
   - Laplace Transform. Transfer Function Analysis.
   - Discrete Time Signals & Systems. Linear Time Invariant DT systems.
   - Linear Constant Coefficient Difference Equations. Z-Transform.
   - Transfer Functions for DT Systems. The discrete time Fourier transform.
   - Frequency Response of DT Systems.
   - Sampling. Nyquist Sampling Theorem.
   - Discrete Fourier Series. Discrete Fourier Transform.
   - Relationships among the discussed transforms.

6.4 Course Materials and Lecture Notes Developed

Total:	**7**
At Drexel:	**7**
Last 5 Years:	**7**

1. 2006 **Fundamentals of Deterministic Digital Signal Processing (ECE-S631)**
   Development of a pair of MATLAB based labs emphasizing applications in digital communications systems.

2. 2007 **Fundamentals of Statistical Digital Signal Processing (ECE-S631)**
   Adaptation and augmentation of lecture notes for course. Introduction of overview material highlighting collections of statistical signal processing problem families, estimation theory, and adaptive filtering. Homework sets developed.

3. 2007-8 **ST: Advanced Statistical Signal Processing (ECE-S690)**
   Developed and revised homeworks and lecture notes spanning convex and nonlinear programming, information theory, and machine learning. Cutting edge material introduced in practical channel codes and practical multi-terminal joint source and channel coding from recent research publications.

4. 2010 **Probability & Random Variables (ECE-S521)**
   Developed lectures, homeworks, and exams for a graduate level introduction to probability and random variables.

5. 2010 **Random Processes & Spectral Analysis (ECE-S522)**
   Developed lectures, homeworks, and exams for a graduate level introduction to random processes.

6. 2009,2011 **Information Theory & Coding (ECE-T602)**
   Developed homeworks and lecture notes covering essential ideas in information theory and modern coding theory.

7. 2010,2011 **Optimization (ECE-S811)**
   Developed homeworks and lecture notes for the course spanning linear, convex, and nonlinear programming with a geometric bent.

8. 2012 **ST: Multiterminal Information Theory (ECE-S690)**
   Developed lectures, homeworks, exams, and project for a graduate course in multiterminal information theory spanning multiterminal source coding and network coding

7 Professional Service Activities

7.1 Professional Society Membership

Total: **1**
At Drexel: **1**
Last 5 Years: **1**

Date	Activity
2001-Pres.	Institute of Electrical and Electronics Engineers (IEEE)
2004-Pres.	IEEE Signal Processing Society member
2006-Pres.	IEEE Communications Society member
2006-Pres.	IEEE Information Theory Society member

7.2 Editorial & Conference Activities

Total: **4**
At Drexel: **4**
Last 5 Years: **4**

Lead Guest Editor — *IEEE Journal on Selected Areas in Communications* issue:
Trading Rate for Delay at the Application and Transport Layers
Editors: J. Walsh, *Drexel University*
S. Weber, *Drexel University*
J. de Oliveira, *Drexel University*
A. Eryilmaz, *Ohio State University*,
M. Médard, *Massachusetts Institute of Technology*
Submissions Due: July 8, 2010.
Acceptance Notification: November 1, 2010.
Publication: 2nd Quarter, 2011

Session Chair — *Asilomar Conference on Signals, Systems, & Computers*, 2010
Detection & Estimation Poster Session

TPC Reviewer — *Signal Processing Advances in Wireless Communications*, 2010

Session Chair — *Asilomar Conference on Signals, Systems, & Computers*, 2011
Information Theoretic Signal Processing Session

7.3 National Panels

Total: **6**
At Drexel: **6**
Last 5 Years: **6**

	Date	Grant Review Panel
1.	2009-2010	NSF Panel
2.	2009-2010	NSF Panel
3.	2009-2010	NSF Panel
4.	2009-2010	NSF Panel
6.	2011-2012	NSF Panel

7.4 Reviewership

Total:	**84**
At Drexel:	**75**
Last 5 Years:	**75**

Publication	**Years**
IEEE Transactions on Signal Processing	2004-2006, 2008-2011
IEEE Transactions on Information Theory	2008-09
IEEE Transactions on Communications	2006-2009
IEEE Transactions on Vehicular Technology	2009
Electronics Letters	2009
International Journal of Approximate Reasoning	2007-2008
Journal of Communication and Information Systems	2008
IEEE Transactions on Wireless Communications	2004, 2006, 2011
IEEE Communications Letters	2005,2009
IEEE Signal Processing Letters	2007
IEEE Signal Processing Magazine	2009-2010
International Journal of Adaptive Control and Signal Processing	2005
IEEE Journal on Selected Areas in Communications	2004
Physical Communication	2011
EURASIP Journal on Wireless Communications and Networking	2011
IEEE ISIT	2007,2009
Turbo Codes Symposium	2010
IEEE ISITA	2008
IEEE ISPLC	2007
International Conference on Communications	2004, 2006
IEEE GLOBECOM	2004, 2006
IEEE ICASSP	2005
IEEE SPAWC	2005, 2008, 2009
IEEE VTC	2006
EUSIPCO	2007, 2008, 2011
IEEE WCNC	2007
Mobimedia	2007
IEEE ICME	2009
NetCod	2011

8 University Service Activities

8.1 Member of Department/College Committees

Total:	**4**
At Drexel:	**4**
Last 5 Years:	**4**

	Date	Position
1.	2012-Pres.	Computational Media Faculty Search Committee
2.	2009-2011	College of Engineering Junior Faculty Advisory Committee
3.	2008-2009	Computer Engineering Faculty Search Committee
4.	2007-Pres.	Signal Processing Curriculum Committee
5.	2007-2009	Senior Design Ad Hoc Committee Member

8.2 Ph.D. Candidacy Exam Committees Served

Total:	**26**
At Drexel:	**26**
Last 5 Years:	**26**

	Date	Student
1.	2007-2008	Yao Yu
2.	2008-2009	Sagar Shah
3.	2008-2009	Sivagnanasundaram Ramanan
4.	2008-2009	Ciira wa Maina
5.	2008-2009	Ebraheem Sultan
6.	2008-2009	Kevin Wanuga
7.	2008-2009	Le Yu
8.	2009-2010	Nan Xie
9.	2009-2010	Xin Liu
10.	2009-2010	Yupeng Liu
11.	2009-2010	Bradford Boyle
12.	2009-2010	Jeff Wildman, II
13.	2009-2010	Zhongchuan Zhang
14.	2009-2010	Zexi Liu
15.	2010-2011	Alex Fridman
16.	2010-2011	Vijaya Pendylala
17.	2010-2011	Gwanmo Ku
18.	2011-2012	Gabe Ford
19.	2011-2012	Ray Canzanese
20.	2011-2012	Alyssa Batula
21.	2011-2012	Brandon Morton
22.	2011-2012	Gregory Ditzler
23.	2011-2012	Nikhil Gulati
24.	2011-2012	Peter Thai
25.	2011-2012	Congduan Li
26.	2011-2012	Yunshu Liu

8.3 Ph.D. Thesis Proposal Committees Served

Total: **9**
At Drexel: **9**
Last 5 Years: **9**

	Date	Student
1.	2007-2008	Daniele Piazza
2.	2007-2008	Lun Dong
3.	2009-2010	Sivagnanasundaram Ramanan
4.	2009-2010	Ciira wa Maina
5.	2009-2010	Xin Liu
6.	2009-2010	Yao Yu
7.	2010-2011	Ray Migneco
8.	2010-2011	Ilaria Malanchini
9.	2010-2011	Erik Schmidt

8.4 Ph.D. Defense Committees Served

Total: **12**
At Drexel: **12**
Last 5 Years: **12**

	Date	Student
1.	2007-2008	Yuanning Yu
2.	2008-2009	Lun Dong
3.	2008-2009	Ananth Kini
4.	2008-2009	Daniele Piazza
5.	2010-2011	Yao Yu
6.	2010-2011	Xin Liu
7.	2011-2012	Ciira wa Maina
8.	2011-2012	Sivagnanasundaram Ramanan
9.	2011-2012	Prathaban Mookiah
10.	2011-2012	Ilaria Malanchini
11.	2011-2012	Ray Migneco
12.	2011-2012	Erik Schmidt

8.5 Undergraduates Supervised via REU Supplement

Total: **4**
At Drexel: **4**
Last 5 Years: **4**

	Date	Student
1.	Su-2010	Linda McLaughlin
2.	Fa-2010	Ian Gallagher
3.	Fa-2010	Aaron Bilenky
4.	Su-2011	David Cinciruk