

AYLIN YENER

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Research group: Wireless Communications and Networking Laboratory (WCAN@PSU)

Experience

Professor, Electrical Engineering, Penn State University, PA	July 2010-present
Associate Professor, Electrical Engineering, Penn State University, PA	July 2006-July 2010
Visiting Associate Professor, Electrical Engineering, Stanford University, CA	Oct 2008- Aug 2009
Assistant Professor, Electrical Engineering, Penn State University, PA	Jan 2002-July 2006
Assistant Professor, Electrical and Computer Engineering, Lehigh University, PA	Aug 2000- Dec 2001
Graduate Research Assistant, WINLAB, Rutgers University, NJ,	Sept 1993-Aug 2000
Member of Technical Staff (Summer Internship), LUCENT Technologies, NJ	June 1997- Sept 1997

Education

PhD, WINLAB, Electrical and Computer Engineering Dept., Rutgers University, NJ	May 2000
MS, WINLAB, Electrical and Computer Engineering Dept., Rutgers University, NJ,	Oct 1994
BS, Electrical and Electronics Engineering Dept., Bogazici University, Istanbul, Turkey	June 1991
BS, Physics Dept., Bogazici University, Istanbul, Turkey	June 1991

Awards and Honors

IEEE Fellow *for contributions to wireless communication theory and wireless information security*
IEEE Communications Society Marconi Prize Paper Award (2014)
Best Paper Award, Communication Theory, IEEE International Conference on Communications (2010)
DARPA Young Investigator Team Award for ITMANET Program (2006)
National Science Foundation CAREER Award (2003)
Penn State Engineering Alumni Society (PSEAS) Premier Research Award (2014)
Penn State Engineering Alumni Society (PSEAS) Outstanding Research Award (2010)
Leonard A. Doggett Award for Outstanding Writing in Electrical Engineering, Penn State (2014)
P.C. Rossin Endowed Assistant Professorship, Lehigh University (2001)
Graduation Honor List, Bogazici University (1991)
Ranked 71st from 800,000 students in the National University Placement Exam (1987)

Research Focus

My research area is in **Networked Systems** broadly defined. The focus is on system level design insights drawn from characterization of fundamental performance limits of such systems. Core research disciplines and tools that we engage include *information theory, optimization, communication theory and signal processing*. We are generally interested in systems consisting of multiple entities that communicate, network and compute. We are also interested in developing algorithms approaching or achieving optimal design criteria. There are diverse applications of our research in multi-genre networks (for example social communication networks and tactical networks), as well as wired and wireless communication networks of the future (for example Internet of Things (IoT) and sustainable networking). More specific topics are:

- Energy-Conscious Communications
 - Wireless networks with energy harvesting nodes
 - Energy and signal cooperation in communication networks
 - Green distributed storage
- Information Security
 - Information Theoretic Security
 - Secure Communication over multi-terminal wireless networks
 - New models and information theoretic guarantees for powerful adversaries
 - Integrating information theoretic security to other security mechanisms for the IoT era
- Network Science
 - New performance metrics emphasizing information content and semantics
 - Fundamental limits of reliable information flow over social communication networks
 - Methods for influence and trust optimization over signed/unsigned social networks
- Multiterminal Information Theory
 - Information theory of wireless networks: capacity of models with state, feedback, and cooperation
 - Interactive compression and function computation
 - Compression of remotely observed sources
- Wireless Communication Theory
 - Interference management for heterogeneous wireless networks
 - Resource allocation for multi-terminal wireless communication systems
 - Cognitive wireless communication systems

Research Related Statistics

Number of publications: 71 journal, 3 book chapters, 175 conference.

Citation count: 6514, h-index: 39 (Google Scholar)

Research supervision: Postdoc: 2 previous, 2 current; PhD: 10 graduated, 6 current; MS: 9 graduated.

Research Funding:

- 14 NSF grants
- 2 DARPA grants: ITMANET, CBMANET
- 1 ARL Network Science CTA
- 9 Industrial/Other grants

Publications

Citation Numbers *Source: Google Scholar*

h-index: 39 (32 since 2011); i10-index: 109 (91 since 2011); citations: 6514 (4725 since 2011)

Book Chapters

- [3] M. Nafea and A. Yener, "MIMO Wire-tap Channels", *Information Theoretic Security and Privacy of Information Systems*, Editors: H. Boche, R. Schafer, A. Khisti, H. V. Poor, forthcoming 2016.
- [2] X. He and A. Yener, "Secrecy and Feedback", *Physical Layer Security in Wireless Communications*, Editors: X. Zhou, L. Song, Y. Zhang, CRC Press 2013.
- [1] X. He and A. Yener, "Cooperative Jamming: The Tale of Friendly Interference for Secrecy", *Securing Wireless Communications at the Physical Layer*, Editors: R. Liu and W. Trappe, Springer 2009.

Journal Articles in Review

- [71] B. Guler, I. MolavianJazi, and A. Yener, "The Role of Side Information in Lossy Compression of Remote Sources," *IEEE Transactions on Information Theory*, submitted Dec. 2015.
- [70] B. Guler, I. MolavianJazi, A. Yener, P. Basu, A. Swami and C. Andersen, "Interactive Function Computation with Mismatched Information," *IEEE Transactions on Information Theory*, submitted Nov. 2015.
- [69] M. Nafea and A. Yener, "Secure Degrees of Freedom for the MIMO Wire-tap Channel with a Multi-antenna Cooperative Jammer," *IEEE Transactions on Information Theory*, submitted Nov. 2015.
- [68] A. Ibrahim, A. Zewail and A. Yener, "Green Distributed Storage Using Energy Harvesting Nodes," *IEEE Journal on Selected Areas in Communications: Series on Green Communications and Networking*, submitted Aug. 15 (in revision, revised Dec. 2015).
- [67] B. Varan and A. Yener, "Delay Constrained Energy Harvesting Networks with Limited Energy and Data Storage," *IEEE Journal on Selected Areas in Communications: Series on Green Communications and Networking*, submitted Aug. 15 (in revision, revised Dec. 2015).
- [66] K. Tutuncuoglu, O. Ozel, A. Yener and S. Ulukus, "The Binary Energy Harvesting Channel with a Unit-Sized Battery," *IEEE Transactions on Information Theory*, submitted Aug. 2014 (in revision, revised Nov. 2015).

Journal Articles Published

- [65] B. Varan and A. Yener, "Incentivizing Signal and Energy Cooperation in Wireless Networks," *IEEE Journal on Selected Areas in Communications: Series on Green Communications and Networking*, 33(12), pp. 2554-2566, Dec. 2015.
- [64] K. Tutuncuoglu and A. Yener, "Energy Harvesting Networks with Energy Cooperation: Procrastinating Policies," *IEEE Transactions on Communications*, 63(11), pp. 4525-4538, Nov. 2015.
- [63] A. Yener and S. Ulukus, "Wireless Physical Layer Security: Lessons Learned from Information Theory," *Proceedings of the IEEE*, 103(10), pp. 1814-1825, Oct. 2015.
- [62] K. Tutuncuoglu, B. Varan, and A. Yener, "Throughput Maximization for Two-way Relay Channels with Energy Harvesting Nodes: The Impact of Relaying Strategies," *IEEE Transactions on Communications*, 63(6), pp. 2081-2093, Jun. 2015.
- [61] O. Ozel, K. Tutuncuoglu, S. Ulukus, and A. Yener, "Fundamental Limits of Energy Harvesting Communications," *IEEE Communications Magazine*, 53(4), pp. 126-132, Apr. 2015.

- [60] K. Tutuncuoglu, A. Yener, and S. Ulukus, "Optimum Policies for an Energy Harvesting Transmitter Under Energy Storage Losses," *IEEE Journal on Selected Areas in Communications: Wireless Communications Powered by Energy Harvesting and Wireless Energy Transfer*, 33(3), pp. 467-481, Mar. 2015.
- [59] S. Ulukus, A. Yener, E. Erkip, O. Simeone, M. Zorzi, P. Grover, and K. Huang, "Energy Harvesting Wireless Communications: A Review of Recent Advances," *IEEE Journal on Selected Areas in Communications: Wireless Communications Powered by Energy Harvesting and Wireless Energy Transfer*, 33(3), pp. 360-381, Mar. 2015.
- [58] Y. Tian and A. Yener, "Relaying for Multiuser Networks in the Absence of Codebook Information," *IEEE Transactions on Information Theory*, 61(3), pp. 1247-1256, Mar. 2015.
- [57] B. Guler, B. Varan, K. Tutuncuoglu, M. Nafea, A. Zewail, A. Yener, and D. Oceau, "Using Social Sensors for Influence Propagation in Networks with Positive and Negative Relationships," *IEEE Journal of Selected Topics in Signal Processing: Signal Processing for Situational Awareness from Networked Sensors and Social Media*, 9(2), pp. 360-373, Mar. 2015.
- [56] B. Varan and A. Yener, "The Energy Harvesting Multi-Way Relay Channel with Intermittent Data: The Impact of Buffer Sizes," *EURASIP Journal on Wireless Communications and Networking Special Issue on Energy Harvesting Wireless Communications*, 2015(63), pp. 1-15, Mar. 2015.
- [55] E. N. Ciftcioglu, A. Michaloliakos, A. Yener, K. Psounis, T. F. La Porta, and R. Govindan, "Operational Information Content Sum Capacity: From Theory to Practice," *Elsevier Journal of Computer Networks*, 75(A), pp. 1-17, Dec. 2014.
- [54] X. He and A. Yener, "MIMO Wiretap Channels with Arbitrarily Varying Eavesdropper Channel States", *IEEE Transactions on Information Theory*, 60(11), pp. 6844-6869, Nov. 2014.
- [53] Y. Tian and A. Yener, "Degrees of Freedom for the MIMO Multi-way Relay Channel," *IEEE Transactions on Information Theory*, 60(5), pp. 2495-2511, May. 2014.
- [52] B. Guler and A. Yener, "Uplink Interference Management for Coexisting MIMO Femtocell and Macrocell Networks: An Interference Alignment Approach," *IEEE Transactions on Wireless Communications*, 13(4), pp. 2246-2257, Apr. 2014.
- [51] X. He and A. Yener, "Providing Secrecy With Structured Codes: Tools and Applications to Two-User Gaussian Channels", *IEEE Transactions on Information Theory*, 60(4), pp. 2121-2138, Apr. 2014.
- [50] B. Guler and A. Yener, "Selective Interference Alignment for MIMO Cognitive Femtocell Networks," *IEEE Journal in Selected Areas in Communications: Cognitive Radio Series*, 32(3), pp. 439-450, Mar. 2014.
- [49] X. He, A. Khisti and A. Yener, "MIMO Broadcast Channel with an Unknown Eavesdropper: Secrecy Degrees of Freedom," *IEEE Transactions on Communications*, 62(1), pp. 246-255, Jan. 2014.
- [48] M. Li, O. Simeone and A. Yener, "Degraded Broadcast Diamond Channels with Non-Causal State Information at the Source," *IEEE Transactions on Information Theory*, 59(12), pp. 8210-8223, Dec. 2013.
- [47] X. He and A. Yener, "The Role of Feedback in Two-way Secure Communications", *IEEE Transactions on Information Theory*, 59(12), pp. 8115-8130, Dec. 2013.
- [46] G. Xiong, S. Kishore and A. Yener, "Spectrum Sensing in Cognitive Radio Networks: Performance Evaluation and Optimization," *Physical Communication (PHYCOM) Special Issue on Cognitive Radio*, Volume 9, pp. 171-183, December 2013.
- [45] E. N. Ciftcioglu, A. Yener and M. J. Neely, "Maximizing Quality of Information from Multiple Sensor Devices: The Exploration vs Exploitation Tradeoff," *IEEE Journal of Selected Topics in Signal*

Processing, Special issue on Learning-Based Decision Making in Dynamic Systems under Uncertainty, 7(5), pp. 883-894, October 2013.

- [44] R. Bassily, E. Ekrem, X. He, E. Tekin, J. Xie, M. Bloch, S. Ulukus and A. Yener, "Cooperative Security at the Physical Layer," *IEEE Signal Processing Magazine*, 30(5), pp. 16-28, September 2013.
- [43] Y. Tian and A. Yener, "Guiding Blind Transmitters: Degree of Freedom Optimal Interference Alignment Using Relays," *IEEE Transactions on Information Theory*, 59(8), pp. 4819-4832, August 2013.
- [42] X. He, A. Khisti and A. Yener, "MIMO Multiple Access Channel with an Arbitrarily Varying Eavesdropper," *IEEE Transactions on Information Theory*, 59(8), pp. 4733-4745, August 2013.
- [41] M. Li, O. Simeone and A. Yener, "Multiple Access Channels with States Causally Known at Transmitters," *IEEE Transactions on Information Theory*, 59(3), pp. 1394-1404, March 2013.
- [40] X. He and A. Yener, "Strong Secrecy and Reliable Byzantine Detection in the Presence of an Untrusted Relay," *IEEE Transactions on Information Theory*, 59(1), pp. 177-192, January 2013.
- [39] D. Gunduz, A. Yener, A. Goldsmith, and H. V. Poor, "The Multi-way Relay Channel," *IEEE Transactions on Information Theory*, 59(1), pp. 51-63, January 2013.
- [38] I. Stanojev and A. Yener, "Improving Secrecy Rate via Spectrum Leasing for Friendly Jamming," *IEEE Transactions on Wireless Communications*, 12(1), pp. 134-145, January 2013.
- [37] X. He and A. Yener, "End-to-end Secure Multi-hop Communication with Untrusted Relays," *IEEE Transactions on Wireless Communications*, 12(1), pp. 1-11, January 2013.
- [36] Y. Tian and A. Yener, "Symmetric Capacity of the Gaussian Interference Channel with an Out-of-Band Relay to within 1.15 Bits," *IEEE Transactions on Information Theory*, 58(8), pp. 5151-5171, August 2012.
- [35] K. Tutuncuoglu and A. Yener, "Sum-Rate Optimal Power Policies for Energy Harvesting Transmitters in an Interference Channel," *Journal of Communications and Networks (JCN) Special issue on Energy Harvesting in Wireless Networks (Invited)*, April 2012.
- [34] K. Tutuncuoglu and A. Yener, "Optimum Transmission Policies for Battery Limited Energy Harvesting Nodes," *IEEE Transactions on Wireless Communications*, vol. 11, no. 3, pp. 1180-1189, March 2012. **(IEEE 2014 Marconi Prize Paper Award)**
- [33] E. N. Ciftcioglu, Y. E. Sagduyu, R. A. Berry, and A. Yener, "Cost-Delay Tradeoffs for Two-Way Relay Networks," *IEEE Transactions on Wireless Communications*, 10(12), pp. 4100-4109, December 2011.
- [32] O. Ozel, K. Tutuncuoglu, J. Yang, S. Ulukus and A. Yener, "Transmission with Energy Harvesting Nodes in Fading Wireless Channels: Optimal Policies," *IEEE Journal on Selected Areas in Communications, Special Issue on Energy-Efficient Wireless Communications*, 29(8), pp. 1732-1743, September 2011.
- [31] S. Goel, V. Aggarwal, A. Yener and A. R. Calderbank, "The Effect of Eavesdroppers on Network Connectivity: A Secrecy Graph Approach," *IEEE Transactions on Information Forensics and Security, Special Issue on Using the Physical Layer for Securing the Next Generation of Communication Systems*, 6(3), pp. 712-724, September 2011.
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- [29] X. He and A. Yener, "The Gaussian Many-to-One Interference Channel with Confidential Messages," *IEEE Transactions on Information Theory, Special Issue on Interference Networks*, 57(5), pp. 2730-2745, May 2011.

- [28] X. He and A. Yener, "Cooperation with an Untrusted Relay: A Secrecy Perspective", *IEEE Transactions on Information Theory*, August 2010, 56(8), pp. 3801-3827.
- [27] K. Lee, X. He and A. Yener, "Resource Allocation for the Multi-Band Relay Channel: A Building Block for Hybrid Wireless Networks", *EURASIP Journal on Communications and Networking*, vol. 2010, Article ID 792410, 13 pages, 2010. doi:10.1155/2010/792410.
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- [25] X. He and A. Yener, "Two-hop Secure Communication Using an Untrusted Relay", *EURASIP Journal on Communications and Networking- Special Issue on Physical Layer Security*, vol. 2009, Article ID 305146, 13 pages, 2009. doi:10.1155/2009/305146.
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- [23] E. Tekin and A. Yener, "The Gaussian Multiple-Access Wire-Tap Channel", *IEEE Transactions on Information Theory*, December 2008, 54(12), pp. 5747 - 5755.
- [22] J. Andrews, N. Jindal, M. Haenggi, R. Berry, S. Jafar, D. Guo, S. Shakkottai, R. Heath, M. Neely, S. Weber and A. Yener, "Rethinking Information Theory for Mobile Ad Hoc Networks", *IEEE Communications Magazine*, December 2008, 46(12), pp. 94 - 101.
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- [19] S. Serbetli and A. Yener, "Relay Assisted F/TDMA Ad Hoc Networks: Node Classification, Power Allocation and Relaying Strategies", *IEEE Transactions on Communications*, June 2008, 56(6), pp. 937 - 947.
- [18] M. Chen, S. Serbetli, and A. Yener, "Distributed Power Allocation Strategies for Parallel Relay Networks", *IEEE Transactions on Wireless Communications*, February 2008, 7(2), pp. 552 - 561.
- [17] C. Oh and A. Yener, "Power Controlled CDMA Cell Sectorization with Multiuser Detection: A Comprehensive Analysis of Uplink and Downlink", *EURASIP Journal on Communications and Networking*, October 2007, Vol. 2007, Article ID 62379, 13 pages, 2007. doi:10.1155/2007/62379.
- [16] C. Oh and A. Yener, "Downlink Throughput Maximization for Interference Limited Systems: TDMA versus CDMA", *IEEE Transactions on Wireless Communications*, July 2007, 6(7), pp. 2454 - 2463.
- [15] G. Khandelwal, K. Lee, A. Yener, and S. Serbetli, "ASAP : A MAC Protocol for Dense and Time Constrained RFID Systems", *EURASIP Journal on Communications and Networking*, June 2007, Vol. 2007, Article ID 18730, 13 pages, 2007. doi:10.1155/2007/18730.
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- [13] J. Shin, K. Lee, A. Yener, and T. F. La Porta, "On Demand Diversity Wireless Relay Networks," *ACM Transactions on Mobile Networking and Applications (MONET) Special Issue On Soft Radio-Enabled Heterogeneous Wireless Networks*, August 2006, 11(4), pp. 593 - 611.
- [12] S. Serbetli and A. Yener, "MIMO-CDMA Systems: Signature and Beamformer Design with Various Levels of Feedback", *IEEE Transactions on Signal Processing*, July 2006, 54(7), pp. 2758 - 2772.

- [11] S. Serbetli and A. Yener, "Time Slotted Multiuser MIMO Systems: Beamforming and Scheduling Strategies," *EURASIP Journal on Wireless Communications and Networking, Special Issue on Multiuser MIMO Networks*, December 2004, Volume 2004, pp. 286-296.
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- [9] S. Ulukus and A. Yener, "Iterative Transmitter and Receiver Optimization for CDMA Networks," *IEEE Transactions on Wireless Communications*, November 2004, 3(6), pp. 1879-1884.
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- [3] C. U. Saraydar and A. Yener, "Adaptive Cell Sectorization for CDMA Systems," *IEEE Journal on Selected Areas in Communications, Wireless Communications Series*, June 2001, 19(6), pp. 1041-1051.
- [2] A. Yener and C. Rose, "Highly Mobile Users and Paging: optimal polling strategies," *IEEE Transactions on Vehicular Technology*, November 1998, 47(4), pp. 1251-1257.
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Conference Publications

- [175] B. Guler, A. Yener, E. MolavianJazi, P. Basu, A. Swami, "Interactive Function Compression with Asymmetric Priors," *IEEE Data Compression Conference, DCC'16*, Snowbird, UT, Mar. 2016.
- [174] E. MolavianJazi and A. Yener, "Low-Latency Communications over Zero-Battery Energy Harvesting Channels," *IEEE Global Communications Conference, Globecom'15*, San Diego, CA, Dec. 2015.
- [173] B. Varan and A. Yener, "Auction Schemes for Energy and Signal Cooperation in Two-Hop Networks," *IEEE Global Communications Conference, Globecom'15*, San Diego, CA, Dec. 2015.
- [172] A. Ibrahim, A. Zewail and A. Yener, "Towards Green Distributed Storage Systems," *49th Asilomar Conference on Signals, Systems and Computers, Asilomar'15*, Pacific Grove, CA, Nov. 2015.
- [171] A. Zewail and A. Yener, "The Interference Untrusted-Relay Channel with Confidential Messages," *Information Theory Workshop, ITW'15*, Jeju Island, South Korea, Oct. 2015.
- [170] B. Guler, K. Tutuncuoglu, and A. Yener, "Maximizing Recommender's Influence in a Social Network: An Information Theoretic Perspective," *Information Theory Workshop, ITW'15*, Jeju Island, South Korea, Oct. 2015.
- [169] E. MolavianJazi and A. Yener, "Subset Source Coding," *53rd Annual Allerton Conference on Communication, Control, and Computing, Allerton'15*, Monticello, IL, Sep. 2015.

- [168] M. Nafea and A. Yener, "Wiretap Channel II with a Noisy Main Channel," *IEEE International Symposium on Information Theory, ISIT'15*, Hong Kong, Jun. 2015.
- [167] B. Guler, E. MolavianJazi, and A. Yener, "Remote Source Coding with Two-Sided Information," *IEEE International Symposium on Information Theory, ISIT'15*, Hong Kong, Jun. 2015.
- [166] O. Ozel, K. Tutuncuoglu, S. Ulukus, and A. Yener, "The Binary Energy Harvesting Channel with On-Off Fading," *IEEE International Symposium on Information Theory, ISIT'15*, Hong Kong, Jun. 2015.
- [165] M. Nafea and A. Yener, "Secure Degrees of Freedom of $N \times N \times M$ Wiretap Channel with a K -Antenna Cooperative Jammer," *IEEE International Conference on Communications, ICC'15*, London, UK, Jun. 2015.
- [164] A. Yener, "New Directions in Information Theoretic Security: Benefits of Bidirectional Signaling," *Information Theory Workshop, ITW'15*, Jerusalem, Israel, Apr. 2015.
- [163] C. Andersen, P. Basu, B. Guler, A. Yener and E. Molavianjazi, "Protocols for Efficient Inference Communication," *Seventh International Workshop on Information Quality and Quality of Service for Pervasive Computing (IQ2S'15) in Conjunction with IEEE PERCOM 2015*, St. Louis, MO, Mar. 2015.
- [162] B. Varan and A. Yener, "Throughput Maximizing Games in the Two-Hop Relay Channel with Energy Cooperation," *49th Annual Conference on Information Sciences and Systems, CISS'15*, Baltimore, MD, Mar. 2015.
- [161] K. Tutuncuoglu and A. Yener, "The Energy Harvesting and Energy Cooperating Two-way Channel with Finite-Sized Batteries," *IEEE Global Communications Conference, Globecom'14*, Austin, TX, Dec. 2014.
- [160] B. Varan and A. Yener, "Energy Harvesting Communications with Energy and Data Storage Limitations," *IEEE Global Communications Conference, Globecom'14*, Austin, TX, Dec. 2014.
- [159] B. Guler, A. Yener, P. Basu, C. Andersen and A. Swami, "A Study on Compressing Graphical Structures," *IEEE GlobalSIP Symposium on Network Theory, GlobalSIP'14*, Atlanta, GA, Dec. 2014.
- [158] B. Guler, B. Varan, K. Tutuncuoglu, M. Nafea, A. Zewail, A. Yener and D. Oceau, "Communicating in a Socially-Aware Network: Impact of Relationship Types," *IEEE GlobalSIP Symposium on Network Theory, GlobalSIP'14*, Atlanta, GA, Dec. 2014.
- [157] A. Zewail and A. Yener, "The Multiple Access Channel with an Untrusted Relay," *Information Theory Workshop, ITW'14*, Hobart, Tasmania, Australia, Nov. 2014.
- [156] M. Nafea and A. Yener, "Secure Degrees of Freedom for the MIMO Wiretap Channel with a Multi-antenna Cooperative Jammer," *Information Theory Workshop, ITW'14*, Hobart, Tasmania, Australia, Nov. 2014.
- [155] K. Tutuncuoglu, O. Ozel, A. Yener and S. Ulukus, "State Amplification and State Masking for the Binary Energy Harvesting Channel," *Information Theory Workshop, ITW'14*, Hobart, Tasmania, Australia, Nov. 2014.
- [154] O. Ozel, K. Tutuncuoglu, S. Ulukus and A. Yener, "Capacity of the Energy Harvesting Channel with Energy Arrival Information at the Receiver," *Information Theory Workshop, ITW'14*, Hobart, Tasmania, Australia, Nov. 2014.
- [153] B. Varan and A. Yener, "Energy Harvesting Two-Way Communications with Limited Energy and Data Storage," *48th Asilomar Conference on Signals, Systems and Computers, Asilomar'14*, Pacific Grove, CA, Nov. 2014.

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- [151] B. Guler, B. Varan, K. Tutuncuoglu, M. Nafea, A. Zewail, A. Yener and D. Oceau, "Optimal Strategies for Targeted Influence in Signed Networks," *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, ASONAM'14*, Beijing, China, Aug. 2014.
- [150] K. Tutuncuoglu, O. Ozel, A. Yener, and S. Ulukus, "Improved Capacity Bounds for the Binary Energy Harvesting Channel," *IEEE International Symposium on Information Theory, ISIT'14*, Honolulu, HI, Jul. 2014.
- [149] O. Ozel, K. Tutuncuoglu, S. Ulukus, and A. Yener, "Capacity of the Discrete Memoryless Energy Harvesting Channel with Side Information," *IEEE International Symposium on Information Theory, ISIT'14*, Honolulu, HI, Jul. 2014.
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- [147] B. Guler and A. Yener, "Semantic Index Assignment," *Sixth International Workshop on Information Quality and Quality of Service for Pervasive Computing (IQ2S'14) in Conjunction with IEEE PERCOM 2014*, Budapest, Hungary, Mar. 2014.
- [146] B. Guler and A. Yener, "Compressing Semantic Information with Varying Priorities," *IEEE Data Compression Conference, DCC'14*, Snowbird, UT, Mar. 2014.
- [145] B. Varan, K. Tutuncuoglu and A. Yener, "Energy Harvesting Communications with Continuous Energy Arrivals," *Information Theory and Applications Workshop, ITA'14*, San Diego, CA, Feb. 2014.
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- [12] A. Yener and R. D. Yates, "Acquisition Dependent Random Access for Connectionless CDMA Systems," *IEEE Wireless Communications and Networking Conference, WCNC'00*, Chicago, IL, September 2000 (Invited Paper).
- [11] A. Yener, R. D. Yates and S. Ulukus, "Combined Temporal and Spatial Filter Structures for CDMA Systems," *IEEE Vehicular Technology Conference*, Boston, MA, September 2000.
- [10] A. Yener and R. D. Yates, "Decorrelating Acquisition and Access for Connectionless CDMA," *Symposium for Interference Rejection and Signal Separation, IRSS'00*, Newark, NJ, March 2000 (Invited Paper).
- [9] A. Yener, R. D. Yates and S. Ulukus, "A Nonlinear Programming Approach to CDMA Multiuser Detection," *33rd Asilomar Conf. on Signals, Systems and Computers*, Pacific Grove, CA, Oct. 1999.
- [8] C. U. Saraydar and A. Yener, "Capacity Enhancement for CDMA Systems Through Adaptive Cell Sectorization," *IEEE Wireless Communications and Networking Conference, WCNC'99*, New Orleans, LA, September 1999.
- [7] A. Yener and R. D. Yates, "Multiuser Access Capacity of Packet Switched CDMA Systems," *IEEE Vehicular Technology Conference, VTC'99*, Houston, TX, May 1999.
- [6] A. Yener, R. D. Yates and S. Ulukus, "Joint Power Control, Multiuser Detection and Beamforming for CDMA Systems," *IEEE Vehicular Technology Conference, VTC'99*, Houston, TX, May 1999.
- [5] A. Yener and R. D. Yates, "Multiuser Access Detection for CDMA Systems," *Conference on Information Sciences and Systems, CISS'98*, Princeton, NJ, March 1998.

- [4] A. Yener, C. Rose and R. D. Yates, "Optimum Power Scheduling for CDMA Access Channels," *IEEE Global Telecommunications Conference, Globecom'97*, Phoenix, AZ, November 1997. Also presented in INFORMS Spring'98 Meeting (Invited Talk), Montreal, Canada, April 1998.
- [3] A. Yener and C. Rose, "Paging Strategies for Highly Mobile Users," *IEEE Vehicular Technology Conference, VTC'96*, Atlanta, GA, April 1996.
- [2] A. Yener and C. Rose, "Local Call Admission Policies for Cellular Networks Using Genetic Algorithms," *Conference on Information Science and Systems, CISS'95*, Baltimore, MD, March 1995.
- [1] A. Yener and C. Rose, "Near-Optimal Call Admission Policies for Cellular Networks Using Genetic Algorithms," *IEEE Wireless'94*, Calgary, Canada, July 1994.

Funded Research Grants

NSF

- Rechargeable Networks with Energy Cooperation (10/2015-10/2018), NSF-CNS, \$460,000 (**PI**, with S. Ulukus, UMD).
- Optimizing Communications with Harvested Energy in Energy Starved Environments: A Tailored Fit for Healthcare Monitoring (01/2016-09/2016), Seed Funding within NSF-ERC Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST), \$75,000 (**PI**, Penn State PI S. Troiller-McKinstry).
- Foundations of Energy Harvesting Wireless Communications (7/2014-7/2017), NSF-CCF, \$496,942 (**PI**, with S. Ulukus, UMD).
- Support for North American School for Information Theory (05/2014-05/2015), NSF-CIF, \$20,000 (**PI**).
- Incentive Compatible Security (10/2013-10/2017), NSF-SaTC, \$1,200,000 (**PI**, with R. Berry, Northwestern and S. Ulukus, UMD).
- Realizing the Vision of Information-Theoretic Security for Wireless Communications (09/2013-09/2016), NSF-CCF, \$500,000 (**PI**, with M. Bloch, Georgia Tech.).
- Interactive Security (05/2010-05/2015), NSF-CCF, \$1,200,000 (**PI**, with S. Ulukus, UMD and K. Ramchandran, UC Berkeley).
- Rechargeable Networks (03/2010-02/2015), NSF-CNS, \$900,000 (**PI**, with S. Ulukus, UMD and R. Yates, Rutgers).
- Cognition, Collaboration, and Competition in Hybrid Wireless Networks (09/2007-06/2012), NSF-CNS, \$300,000 (**PI**, with S. Kishore Lehigh).
- Secure Capacity of Wireless Networks (09/2007-08/2011), NSF-Cybertrust, \$250,000 (**PI**, with S. Ulukus, ECE, UMD).
- Multi-tier Hybrid Wireless Networks (10/2006-09/2008), NSF-CNS, \$143,416 (**PI**, with S. Kishore, Lehigh).
- Multiuser Wireless Security (07/2005-06/2010), NSF-CCF, \$240,000 (**PI**, with S. Ulukus, ECE, UMD).
- Exploratory Research in Relay Networks of Agile Radios (04/2005-09/2006), NSF-CNS, \$95,018 (**co-PI**, with PI T. La Porta, CSE, PSU).
- CAREER: Signal Processing for Multiuser Multiantenna Wireless Communications (02/2003-01/2010), NSF-CCR, \$406,000 (**PI**).

DoD

- Quality-of-Information-Aware Networks for Tactical Applications (QUANTA) (10/2009-09/2019), **US Army Research Laboratory**: Network Science Collaborative Science Alliance (CTA), Communication Network Center, 10-year estimated budget \$35,000,000 (**co-PI**, PI:T. La Porta). Current role (years 6 and 7): Task Lead (Q1, interdisciplinary team from BBN and ARL); task co-PI (I2, lead: T. Abdelzaher (UIUC), interdisciplinary team from UIUC, IBM and ARL).
- Rethinking Mobile Ad Hoc Networks: A Non-equilibrium Information Theory (11/2006-5/2011), **DARPA ITMANET**: Information Theory for Mobile Ad Hoc Networks Program, \$6,500,000 (Team: D. Katabi, MIT; R. Berry, D. Guo, Northwestern; M. Haenggi, Notre Dame; **A. Yener**, PSU; S. Jafar, University of California Irvine; N. Jindal, Minnesota; M. Neely, USC; J. Andrews (PI), R. Heath, S. Shakkottai, UT Austin; S. Weber, Drexel).
- Control Over Network Coding for Enhanced Radio Transmission Optimization (07/2006-12/2007), **DARPA CBMANET**: Control Based Mobile Ad Hoc Networks Program, \$303,000 (**co-PI**, with PI T. La Porta, CSE, PSU. Other PIs/co-PIs of *CONCERTO* team (budgets not shown): G. Lauer, R. Ghanadan, BAE Systems; M. Effros, T. Ho, CalTech; P. Francis, Z. Haas, Cornell; M. Medard, A. Ozdaglar, MIT; M. Steenstrup, Stow Research; R. Koetter, UIUC; J. Kurose, D. Towsley, UMass).
- Enabling Logistics with Portable and Wireless Technology (07/2003-08/2004), **USMC**, \$510,000, (Team: D.Hall, S. Purao, I. Petrick, School of IST, PSU; S. Kumara, N. Gautam, T. Kim, Industrial Engineering, PSU; Z. Rado, PTI, PSU; R. Gray, Penn State Erie; **A. Yener**, **EE**, PSU, A. Garga, ARL).

Industry&State

- Networking and Security Research Center Designation (01/2007-07/2008), **Ben Franklin Technology Partners**, \$100,000, (**co-PI**, with PI T. La Porta, co-PIs R. Acharya, G. Cao, T. Jaeger, P. McDaniel).
- Sustainable Wireless Networks (01/2007-10/2007), **Raytheon** (via Networking and Security Research Center, PSU), \$50,000 (**PI** with T. Jaeger and T. La Porta, CSE, PSU).
- Technology RoadMap for 3G and Beyond (05/2006-12/2006), **Raytheon** (via Networking and Security Research Center, PSU), \$50,000 (**PI** with T. La Porta, CSE, PSU).
- Clustering for Wireless Ad Hoc Networks: A Joint Physical Layer, Multiple Access, and Routing Perspective (07/2005-06/2006), **Pennsylvania Infrastructure Technology Alliance**, \$60,000 (**co-PI**, with PI S. Kishore, ECE, Lehigh).
- Design of Efficient RFID Systems (01/2005-12/2005), **Pittsburgh Digital Greenhouse** (The Tech Collaborative), \$144,000 (**PI**).
- Lifetime Optimization of Ad Hoc Sensor Networks (06/2005-12/2005), **Telcordia** (via Networking and Security Research Center, PSU), \$50,000 (**PI**, with G. Cao, T. La Porta, CSE, PSU).
- Center of Excellence in Wireless Communications and Networking at Lehigh University (05/2001-05/2003), **AT&T Foundation**, \$200,000 (**PI** with R. Blum, T. Boulton, J. Hwang, EECS, Lehigh).
- Advances in Wireless Networking (Lehigh University) (09/2001-09/2002), **PADCOM** and **Ben Franklin Technology Partners**, \$90,000 (**co-PI**, with PI T. Boulton, EECS, Lehigh).

Research Supervision

Current Postdoctoral Researchers

- Remi A. Chou (PhD, Georgia Tech 2015): 9/2015-Present
- Ebrahim MolavianJazi (PhD, Notre Dame 2014): 8/2014-Present

Current Doctoral Students

- Burak Varan: Energy and Signal Cooperation in Competitive Wireless Networks with Energy Harvesting (Post-comprehensive, 05/2015)
- Basak Guler: Interaction, Communication and Computation in Information and Social Networks (Post-comprehensive, 06/2015)
- Mohamed Nafea: TBD (Start date: 08/2012)
- Ahmed Zewail: TBD (Start date: 08/2013)
- Abdelrahman Ibrahim: TBD (Start date: 08/2014)
- Shiyang Vicky Leng: TBD (Start date: 08/2015)

Previous Postdoctoral Researchers

- Igor Stanojev (PhD, Politecnico di Milano and NJIT 2010): 11/2010-8/2012 (Assistant Professor, University of Wisconsin, Platteville)
- Satashu Goel (PhD, Carnegie Mellon 2009): 07/2009-10/2010 (Qualcomm)

Graduated Doctoral Students

- Kaya Tutuncuoglu **PhD, 08/2015**: Energy Harvesting Wireless Networks: Transmission Policies and Coding Schemes (Facebook, Menlo Park, CA)
- Ye Tian **PhD, 05/2013** : Interference and Cooperation in Wireless Networks (Broadcom, Santa Clara, CA)
- Min (Michael) Li, **PhD, 08/2012**: Information Theoretic Limits of Interactive Multi-user Communication Channels (Postdoc, Macquarie University, Sydney, Australia)
- Ertugrul Ciftcioglu, **PhD, 08/2012**: Wireless Relay Networks with Stochastic Arrivals (Research Associate, IBM/ARL, Adelphi MD)
- Xiang He, **PhD, 08/2010**: Cooperation and Information Theoretic Security in Wireless Networks (Microsoft, Seattle, WA)
- Min Chen, **PhD, 09/2009**: Resource Management for Wireless Ad Hoc Networks (Microsoft, Seattle, WA)
- Ender Tekin, **PhD, 08/2008**: Information Theoretic Secrecy for Some Multiuser Wireless Communication Channels (Associate scientist, Tekin Lab Director, Smith-Kettlewell Eye Research Institute, Rehabilitation Engineering Research Center, San Francisco, CA)
- Kyoungwan Lee, **PhD, 12/2007**: Cognitive Hybrid Wireless Relay Networks (Sprint, VA)

- Changyoon Oh, **PhD, 08/2005**: Resource Allocation Techniques for Improved Performance of Multiuser Systems (Assistant Professor, Inha Technical College, Korea)
- Semih Serbetli, **PhD, 08/2005**: Efficient Transmit Strategies for Multiuser Multiple Antenna Systems (Senior Research Scientist, Nexp, Eindhoven, The Netherlands)

Graduated M.S. and B.S. Honor's Thesis Students

- Basak Guler, MS (Thesis) 08/2012: Interference Management for Femtocell Networks (current PhD student)
- Lauren Huie, MS (Thesis), 08/2007: Joint Temporal Power Scheduling and Estimator Optimization for Sensor Networks (Air Force Research Lab, Rome, NY)
- Sandeep Bethanabhotla, MS (Thesis), 12/2005: Transmission Strategies for Lifetime Maximization of Sensor Networks (Broadcom, Irvine, CA)
- Girish Khandelwal, MS (Thesis), 08/2005: Efficient Design of Dense and Time Constrained RFID Systems (Qualcomm, San Diego, CA)
- Onder Filiz, MS (Thesis), 07/2003: Rank Constrained Temporal-Spatial Receivers for CDMA Systems (Turkcell, Istanbul, Turkey)
- Chien-Jen Huang, MS (Paper), 12/2007: Multiuser Competition in Cognitive Radio
- Sungmin Bae, MS (Paper), 12/2005: The Listing Protocol for the RFID Reader Collision Problem
- Atul Divakaran, MS (Paper), 09/2003: An Adaptive Channel Allocation Strategy for Wireless Multimedia QoS (T-Mobile)
- Battal Ozdemir, MS (Paper), 05/2003: Adaptive Probing Based Medium Access Control for Ad-Hoc Networks (Sabanci University and Tubitak, Istanbul, Turkey)
- Michael Wang, BS (Honor's Thesis), 05/11: MIMO Ad Hoc Networks (PhD Student, Princeton)
- Mikhail Lisovich, BS (Honor's Thesis), 05/2006: Capacity Scaling Laws in Ad-Hoc Networks (PhD 2010, Cornell)
- Chip McArtor, BS (Honor's Thesis), 05/2005: Lifetime Optimization of Sensor Networks: A Network Layer Approach

Previous Visiting Professors

- Insoo Koo, Associate Professor, University of Ulsan, South Korea (01/2012-12/2012).
- Tae-Jin Lee, Associate Professor, Sungkyunkwan University Suwon, South Korea (08/2007-08/2008).
- Yeonho Chung, Associate Professor, Pukyong National University, Busan, South Korea (09/2006-08/2007).

Selected Invited Talks and Tutorials (since 2011)

- [20] "Information Theoretic Security," **Invited Lecture**, 9th Annual North American School of Information Theory, June 2016, Duke University, Durham, NC (forthcoming).

- [19] "MIMO Wiretap Channel with a Cooperative Jammer," **Invited Talk**, Mathematical Tools of Information Theoretic Security Workshop, Huawei Technologies/Centrale Supélec, September 2015, Paris, France.
- [18] "Security by the Physical Layer: A Promising Direction for Next Generation Wireless Network Design," **Invited Lecture**, Gray Communications Advances in Information Theory Workshop, London Probability Seminar, Imperial College, June 2015, London, England.
- [17] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE International Conference on Communications, ICC'15, June 2015, London, England.
- [16] "Design Principles for Energy Harvesting Wireless Communication Networks," **Invited Talk**, Analytical Tools for Next Generation Heterogeneous Wireless Networks Workshop, Macquarie University, June 2015, Sydney, Australia.
- [15] "Security by the Physical Layer: A Promising Direction for Next Generation Wireless Network Design," **Keynote**, ICC 2014 Workshop on Physical Layer Security, June 2014, Sydney, Australia.
- [14] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE Wireless Communications and Networking Conference, WCNC'14, April 2014, Istanbul, Turkey.
- [13] "Energy Harvesting Wireless Communication Networks," **Invited Talk**, ISL Colloquium, Electrical Engineering Department, Stanford University, March 2014, Stanford, CA.
- [12] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE Global Communications Conference, Globecom'13, December 2013, Atlanta, GA.
- [11] "Wireless Networks and Information Security: Models and Metrics," **Invited Talk**, Workshop on Multi spectrum metrics for Cyber Defense, MIT, October 2013, Cambridge, MA.
- [10] "Two-way Green Cooperative Networking with Energy Harvesting," **Invited Talk**, IEEE Communication Theory Workshop, June 2013, Phuket, Thailand.
- [9] "Energy Harvesting Wireless Networks," **Invited Talk**, Wireless Communications and Economics Workshop, June 2013, Chinese University of Hong Kong, Hong Kong.
- [8] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE International Conference on Communications, ICC'13, June 2013, Budapest, Hungary.
- [7] "Green Wireless Communications," **Tutorial**, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC'12, September 2012, Sydney, Australia.
- [6] "Green Wireless Networking with Energy Harvesting Nodes," **Invited Talk**, Workshop on Methodological Foundations of Green Radio, June 2012, Paris, France.
- [5] "Multiuser Wireless Secrecy: Lessons Learned from Information Theory," **Invited Talk**, June 2012, Supélec, France.
- [4] "Secrecy: Benefits of Interaction," **Invited Talk**, Banff International Research Station (BIRS) Workshop on Interactive Information Theory, January 2012, Banff, Canada.
- [3] "Interference, Structured Random Codes and Secrecy," **Invited Talk**, Banff International Research Station (BIRS) Workshop on Algebraic Structure in Information Theory, August 2011, Banff, Canada.
- [2] "Energy Efficiency of Future Networks," **Invited Lecture**, Wireless Information Theory Summer School, July 2011, Oulu, Finland.
- [1] "Cooperation, Interference and Secrecy: Lessons Learned from Information Theory," **Keynote**, ICC 2011 Workshop on Physical Layer Security, June 2011, Kyoto, Japan.

Professional Activities

Elected/Appointed Positions

- Member of the Board of Governors**, IEEE Information Theory Society, elected for the term 2015-2017.
- Chair of the Information Theory School Sub-committee**, IEEE Information Theory Society, 2014-2016.
- Treasurer**, Member of the Board of Governors, IEEE Information Theory Society, 2012-2014.
- Chair of the Student Committee**, IEEE Information Theory Society, 2007-2011.
- Editorial Advisory Board Member**, IEEE Transactions on Wireless Communications, 2011-2013.

Editorships

- Editor**, IEEE Transactions on Wireless Communications, 2001-2010.
- Editor**, IEEE Transactions on Communications, 2009-2012.
- Guest Editor**, IEEE Journal on Selected Areas in Communications (JSAC), Special Issue on Wireless Communications Powered by Energy Harvesting and Wireless Energy Transfer, 2015.
- Guest Editor**, IEEE Transactions on Information Forensics and Security, Special Issue on Using the Physical Layer for Securing the Next Generation of Communication Systems, 2011.

Conference Chair Positions

- General Chair**, Third Annual School of Information Theory, Evanston, IL, August 2010. (with Gerhard Kramer of USC)
- General Chair**, Second Annual School of Information Theory, Evanston, IL, August 2009. (with Gerhard Kramer of USC)
- Organizer and General Chair**, First Annual School of Information Theory, University Park, PA, June 2008. (with Gerhard Kramer of Bell Labs)
- Co-Chair**, Wireless of the Students, by the Students, for the Students workshop (3S), to be held in conjunction with WiOpt'11, Princeton, NJ, May 2011.
- Technical Program Committee (TPC) Chair**, *Communication Theory Symposium*, IEEE International Conference on Communications (ICC'09), Dresden, Germany, June 2009.
- TPC Chair**, *Communication Track*, 42nd Asilomar Conference on Signals, Systems and Computers, Pacific Grove, Pacific Grove, October 2008.
- TPC Co-chair**, *Green Networks (GREENNET) Workshop*, 14th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt'16), Tempe, AZ, May 2016.
- TPC Co-chair**, *2nd Workshop on Green Broadband access: energy efficient wireless and wired network solutions*, IEEE Global Telecommunications Conference 2014, Austin, TX, December 2014.
- TPC Co-chair**, *PHY and Fundamentals Track*, IEEE Wireless communications and Networking Conference (WCNC'14), Istanbul, Turkey, April 2014.
- TPC Co-chair**, *Workshop on Energy Harvesting and Green Wireless Communications*, IEEE Global Signal and Information Processing Conference (GlobalSIP'13), Austin, TX, Dec. 2013.

TPC Co-chair, *Workshop on Green Broadband access: energy efficient wireless and wired network solutions*, IEEE International Conference on Communications (ICC'13), Budapest, Hungary, June 2013.

TPC Co-chair, *Cognitive Radio and Spectrum Sensing Track*, IEEE Vehicular Technology Conference (VTC'12-Spring), Yokohama, Japan, May 2012.

TPC Co-chair, *Track 2: MAC and Cross-Layer Design*, 21st Annual IEEE International Symposium on Personal Radio and Mobile Communications (PIMRC'10), Istanbul, Turkey, September 2010.

TPC Co-chair, *Wireless Communications Symposium*, IEEE International Conference on Communications (ICC'08), Beijing, China, May 2008.

TPC Co-chair, *Communications and Networking Track*, 39th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, Pacific Grove, November 2005.

TPC Co-chair, *Symposium on Information Theory*, IEEE WirelessCom 2005, Maui, HI, June 2005.

Recent Results Chair, IEEE International Symposium on Information Theory (ISIT'13), Istanbul, Turkey, July 2013.

Tutorial Chair, IEEE International Symposium on Information Theory (ISIT'12), Boston, MA, June 2012.

Publications Co-chair, IEEE International Symposium on Information Theory (ISIT'11), St. Petersburg, Russia, July 2011.

Conference Technical Program Committee Membership

Technical Program Committee (TPC) member, IEEE International Symposium on Information Theory, ISIT'16, Barcelona July 2016.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2016, Kuala Lumpur, Malaysia, May 2016.

TPC Member, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2015, San Diego, CA, December 2015.

TPC Member, IEEE International Symposium on Information Theory, ISIT'15, Hong Kong June 2015.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2015, London, England, June 2015.

TPC Member, 13th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'15, Mumbai, India, May 2015.

TPC Member, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2014, Austin, TX, December 2014.

TPC Member, *Signal Processing for Communications Symposium*, IEEE Global Telecommunications Conference 2014, Austin, TX, December 2014.

TPC Member, *Energy Efficiency and Energy Harvesting Related Signal Processing and Communications*, IEEE Global Conference on Signal and Information Processing, Atlanta, GA, December 2014.

TPC Member, IEEE International Symposium on Information Theory, ISIT'14, Honolulu, HI, July 2014.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2014, Sydney, Australia, June 2014.

TPC Member, *Ad Hoc and Sensor Networks Symposium*, IEEE International Conference on Communications 2014, Sydney, Australia, June 2014.

TPC Member, 12th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'14, Hammamet, Tunisia, May 2014.

TPC Member, IEEE Military Communications Conference, Baltimore, MD, November 2013.

TPC Member, IEEE Conference on Communications and Network Security, CNS'13, Washington, D.C., October 2013.

TPC Member, IEEE International Symposium on Information Theory, ISIT'13, Istanbul, July 2013.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2012, Budapest, Hungary, June 2013.

TPC Member, 11th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'13, Tsukuba Science City, Japan, May 2013.

TPC Member, IEEE Military Communications Conference, Orlando, FL, November 2012.

TPC Member, IEEE Information Theory Workshop, ITW'12, Lausanne, Switzerland, September 2012.

TPC Member, IEEE Ninth International Symposium on Wireless Communication Systems, ISWCS'12, Paris, France, August 2012.

TPC Member, IEEE International Symposium on Information Theory, ISIT'12, Boston, MA July 2012.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2012, Ottawa, Canada, June 2012.

TPC Member, *Wireless Communications Symposium*, IEEE International Conference on Communications 2012, Ottawa, Canada, June 2012.

TPC Member, *Ad Hoc and Sensor Networks Symposium*, IEEE International Conference on Communications 2012, Ottawa, Canada, June 2012.

TPC Member, 10th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'12, Paderborn, Germany, May 2012.

TPC Member, IEEE Fourth International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, CAMSAP 2011, San Juan, Puerto Rico, December 2011.

TPC Member, *Wireless Communications Symposium*, IEEE Global Telecommunications Conference 2011, Houston, TX, December 2011.

TPC Member, IEEE Eighth International Symposium on Wireless Communication Systems, ISWCS'11, Aachen, Germany, November 2011.

TPC Member, *Symposium on Architectures and Models for the Smart Grid*, IEEE Second International Conference on Smart Grid Communications 2011, Brussels, Belgium, October 2011.

TPC Member, 22nd Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC'11, Toronto, Canada, September 2011.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2011, Kyoto, Japan, June 2011.

- TPC Member**, *Wireless Communications Symposium*, IEEE International Conference on Communications 2011, Kyoto, Japan, June 2011.
- TPC Member**, 9th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'11, Princeton, NJ, May 2011.
- TPC Member**, *Wireless Communications Symposium*, IEEE Global Telecommunications Conference 2010, Miami, FL, December 2010.
- TPC Member**, IEEE International Symposium on Information Theory, ISIT'10, Austin, TX, June 2010.
- TPC Member**, *Wireless Communications Symposium*, IEEE International Conference on Communications 2010, Cape Town, South Africa, May 2010.
- TPC Member**, *Communication Theory Symposium*, IEEE International Conference on Communications 2010, Cape Town, South Africa, May 2010.
- TPC Member**, *Wireless Communications Symposium*, IEEE Global Telecommunications Conference 2009, Honolulu, HI, December 2009.
- TPC Member**, *Ad Hoc and Sensor Networks Track*, IEEE Vehicular Technology Conference, VTC'09-Fall, Anchorage, AK, September 2009.
- TPC Member**, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2008, New Orleans, LA, November 2008.
- TPC Member**, Conference on Information Theory and Statistical Learning (ITSL'08), Las Vegas, NV, June 2008.
- TPC Member**, IEEE Information Theory Workshop (ITW), Porto, Portugal, May 2008.
- TPC Member**, IEEE Wireless Communications and Networking Conference, Las Vegas, NV, March 2008.
- TPC Member**, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2007, Washington D.C., November 2007.
- TPC Member**, IEEE Vehicular Technology Conference, Baltimore, MD, September 2007.
- TPC Member**, International Conference on Computer Communications and Networks, Communication and Information Theory Symposium, Honolulu, HI, August 2007.
- TPC Member**, IEEE Wireless Communications and Networking Conference, Hong Kong, March 2007.
- TPC Member**, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2006, San Francisco, CA, November 2006.
- TPC Member**, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2005, St.Louis, MO, December 2005.
- TPC Member**, *Communication Theory Symposium*, IEEE International Conference on Communications, Seoul, Korea, May 2005.
- TPC Member**, ACM SIGCOMM 2005 Asia Workshop, Beijing, China, April 2005.
- TPC Member**, *General Conference*, IEEE Global Telecommunications Conference 2004, Dallas, TX, November 2004.
- TPC Member**, IEEE Vehicular Technology Conference, Los Angeles, CA, September 2004.

TPC Member, *Wireless Networking Symposium*, IEEE International Conference on Communications, Paris, France, June 2004.

TPC Member, IEEE Vehicular Technology Conference, Genova, Italy, May 2004.

TPC Member, *Wireless Communications Symposium*, IEEE Global Telecommunications Conference 2003, San Francisco, CA, November 2003.

TPC Member, IEEE Vehicular Technology Conference, Orlando, FL, September 2003.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications, Anchorage, AK, May 2003.

TPC Member, *Advanced Signal Processing for Communications Symposium*, IEEE International Conference on Communications, Anchorage, AK, May 2003.

TPC Member, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2002, Taipei, Taiwan, November 2002.

TPC Member, IEEE Vehicular Technology Conference, Vancouver, Canada, September 2002.

TPC Member, *Advanced Wireless Communications Systems Symposium*, IEEE International Conference on Communications, New York, NY, April 2002.

Member, International Program Committee, IASTED International Conference on Wireless and Optical Communications, Banff, Canada, July 2002, July 2003.

Selected Activities as Session or Panel Chair/Organizer.

IEEE Communication Theory Workshop, CTW'15, **Session Organizer**: Energy Harvesting Communications, Dana Point, CA, May 2015.

Asilomar Conference on Signals, Systems and Computers, **Invited session organizer**: Green Radio, Pacific Grove, CA, November 2012.

IEEE Fourth International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, CAMSAP'11, **Special Session Organizer**: Energy Harvesting Wireless Networks, San Juan, Puerto Rico, December 2011.

IEEE Communication Theory Workshop, CTW'11, **Session Organizer**: Security, Sitges, Spain, June 2011.

47th Annual Allerton Conference on Communication, Control and Computing, **Invited session organizer**: Information Security, Monticello, IL, September 2009.

Organizer and Chair, *Panel on Cooperative Communication for Future Wireless Systems*, IEEE Wireless Communications and Networking Conference, WCNC'07, Hong Kong, March 2007.

Asilomar Conference on Signals, Systems and Computers, **Invited session organizer**: Network Information Theory, Pacific Grove, CA, November 2007.

Asilomar Conference on Signals, Systems and Computers, **Invited session organizer**: Adaptive Communication Systems, Pacific Grove, CA, November 2003.

Chapter Chair, IEEE Lehigh Valley Signal Processing Society, 2001.

Research Evaluation Activities

NSF Review Panelist- In CCF, NeTS, ECCS, SaTC, CCR, FMF, ITR programs in years 2001-2015.

Reviewer

IEEE Transactions on Information Theory
 IEEE Transactions on Communications
 IEEE Transactions on Wireless Communications
 IEEE Journal on Selected Areas in Communications
 IEEE Transactions on Signal Processing
 IEEE Transactions on Vehicular Technology
 IEEE/ACM Transactions on Networking
 IEEE Communications Letters
 IEEE Transactions on Circuits and Systems I
 EURASIP Journal on Wireless Communications and Networking
 ISIT, ITW, ICC, GLOBECOM, WCNC, PIMRC, INFOCOM, Percom, MOBICOM, VTC

Thesis Committee Membership

Completed

- * Dissertation Committee Member: Michael Lin, 2015, Penn State, Advisor: T. LaPorta
- * External examiner: Rajitha Senanayake, University of Melbourne, 2015, Advisor: J. Evans
- * Dissertation Committee Member: Sakib Chowhudry, 2014, Penn State, Advisor: M. Kavehrad
- * Dissertation Committee Member: Srikar Tati, 2014, Penn State, Advisor: T. LaPorta
- * Dissertation Committee Member: Qinghua Li, 2013, Penn State, Advisor: G. Cao
- * Dissertation Committee Member: Gang Xiong, 2011, Lehigh University, Advisor: S. Kishore
- * Dissertation Committee Member: Raju Kumar, 2010, Advisor: T. LaPorta
- * Dissertation Committee Member: Jack Chuang, 2008, Advisor: R. Narayanan
- * Dissertation Committee Member: Gyoughwan Kim, 2008, Carnegie Mellon, Advisor: R. Negi
- * Dissertation Committee Member: Patrick Traynor, 2008, Advisor: P. McDaniel
- * Dissertation Committee Member: Sangwoo Lee, 2007, Advisor: M. Kavehrad
- * Dissertation Committee Member: Ozcan Ozturk, 2007, Advisor: M. Kandemir
- * Dissertation Committee Member: Jaesheung Shin, 2007, Advisor: T. La Porta
- * Dissertation Committee Member: Matthew Pirretti, 2006, Advisor: N. Vijaykrishnan
- * Dissertation Committee Member: Hendra Saputra, 2005, Advisor: M. Kandemir
- * Dissertation Committee Member: Wensheng Zhang, 2005, Advisor: G. Cao
- * Dissertation Committee Member: Liangzhong Yin, 2004, Advisor: G. Cao
- * Dissertation Committee Member: Hao Zhu, 2004, Penn State, Advisor: G. Cao
- * Dissertation Committee Member: Byungtae Kang, 2004, Penn State, Advisor: J. Irwin
- * Dissertation External Committee Member: Rajnish Sinha, Rutgers, 2003, Advisor: R. Yates
- * MS Thesis Committee Member: Hao-Ting Lin, Penn State, 2003, Advisor: D. Miller
- * MS Paper Committee Member: Manuel Mendoza, Penn State, 2002, Advisor: J. Breakall
- * Dissertation Committee Member: Xiang Gao, Lehigh University, 2002, Advisor: T. Boulton
- * External examiner: L. G. F. Trichard, Univ. of Sydney, 2002, Advisors: J. Evans and I. Collings

In Progress

- * Dissertation Committee Member: Zhijie Ren, TU Delft, Advisors: M. Gastpar and J. Weber
- * Dissertation Committee Member: Zhichao Zhu, Penn State, Advisor: G. Cao

Teaching

Penn State, EE 360: Communication Systems

Semesters taught: Spring 2003, Spring 2008, Fall 2012, Spring 2014

Enrollment: 32, 23, 43, 35

Description: Junior level communications course emphasizing analog/digital modulation techniques.

Penn State, EE 497A: Fundamentals of Wireless Communications

Semesters taught: Spring 2004, Spring 2005, Spring 2007.

Enrollment: 35, 17, 13

Description: Senior elective, introductory wireless communications. Developed by Prof. Yener. Student Rating of Teaching Effectiveness 6.04 over 7.

Penn State, EE 497B: Probability and Random Processes for Electrical and Computer Engineers

Semesters taught: Spring 2016.

Enrollment: 29

Description: Junior/senior level statistics elective.

Penn State, EE 560: Stochastic Processes and Estimation

Semesters taught: Fall 2006, Fall 2010

Enrollment: 57, 39

Description: Graduate level probability, random variables and random processes. Core course for the PhD candidacy exam for the following sub-areas of the Signals and Systems Area: Communications, Networking, Signal Processing, Image Processing.

Penn State, EE 561: Information Theory

Semesters taught: Fall 2007, Fall 2009, Spring 2011, Spring 2015

Enrollment: 15, 17, 12, 9

Description: Graduate level information theory.

Penn State, EE 562: Detection and Estimation Theory

Semester taught: Fall 2002

Enrollment: 10

Description: Graduate level detection and estimation theory.

Penn State, EE 568: Digital Communications-I

Semesters taught: Fall 2003, Fall 2004, Fall 2005

Enrollment: 21, 18, 11

Description: Graduate level digital communications.

Penn State, EE 569: Digital Communications-II

Semesters taught: Spring 2012

Enrollment: 5

Description: Advanced graduate level digital communications.

Penn State, EE 597C: Emerging Topics in Networked Systems

Semester taught: Fall 2013

Enrollment: 5

Description: Graduate level (advanced); heavy research component. Developed by Prof. Yener. Student Rating of Teaching Effectiveness 6.80 over 7.

Penn State, EE 597E: Multiuser Wireless Communications

Semester taught: Spring 2006

Enrollment: 17

Description: Graduate level (advanced); heavy research component. Developed by Prof. Yener. Student Rating of Teaching Effectiveness 6.71 over 7.

Penn State, EE 597J: Spread Spectrum Communications

Semester taught: Spring 2002

Enrollment: 25

Description: Graduate level course emphasizing the principles and performance of spread spectrum based communication systems.

Lehigh, ECE 341: Fundamentals of Wireless Communications

Semester taught: Fall 2000

Enrollment: 16

Description: Senior/First-year graduate course. Developed by Prof. Yener. Course taught as ECE 350 & ECE 450 (Special Topics) in Fall 2000, subsequently named ECE 341 as a permanent course.

Lehigh, ECE 450: Code Division Multiple Access Systems

Semester taught: Spring 2001

Enrollment: 11

Description: Advanced graduate course emphasizing physical layer techniques for CDMA systems.

University Service

School of EECS Strategic Committee (2015-present)

School of EECS Head Search Committee (2015-present)

EE Department Search Committee (2015-present)

EE Department Search Committee (2014-2015)

Networked Systems Faculty Position Search Committee (2013-2014)

Cyber-Physical Systems Faculty Position Search Committee (2012-2013)

School of EECS study committee (2011)

EE Department SysAdmin Search Committee (2011)

Administrative Review Committee of Civil Engineering Dept Head Post, College of Engineering (2010-2011)

EE Department Head Search Committee (2010-2011)

Sabbatical Review Committee for College of Engineering (chair) (2009-2010)

EE Department AA Search Committee (2009-2010)

Coordinator of PhD Candidacy Exam for Signals and Systems (2009-2011)

Member of the Strategic Planning Task Force on Information Technologies and Cyber Infrastructure, College of Engineering (2007-2008)

Organizer of the Signals and Systems Area Seminars, EE Department (2006-2007)

Graduate Council, alternate (elected), College of Engineering (2004-2006)

Colloquium Organizing Committee, EE Department (2003-2006)

Undergraduate Curriculum Committee, EE Department (2002-2012)

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