AYLIN YENER
Department of Electrical and Computer Engineering
The Ohio State University
2015 Neil Avenue, 205 Dreese Labs, Columbus, OH 43210.
E-mail: yener@engr.psu.edu   Web: http://wcan.ee.psu.edu/yener/
Research group: Wireless Communications and Networking Laboratory (WCAN@PSU)

Experience

Roy and Lois Chope Chair Professor in Engineering, The Ohio State University,	Jan. 2020-present
Professor of Electrical and Computer Engineering, The Ohio State University,	Jan. 2020-present
Professor of Integrated Systems Engineering, The Ohio State University,	Jan. 2020-present
Professor of Computer Science and Engineering, The Ohio State University,	Jan. 2020-present
University Distinguished Professor, Electrical Engineering, Penn State University, PA	Jan.-Dec. 2019
Dean's Fellow, Penn State University, PA	Jan. 2017- Dec. 2019
Visiting Professor, Electrical Engineering, Stanford University, CA	Sep. 2016- Jan. 2018
Professor, Electrical Engineering, Penn State University, PA	Jul. 2010-Dec. 2019
Associate Professor, Electrical Engineering, Penn State University, PA	Jul. 2006-Jul. 2010
Visiting Associate Professor, Electrical Engineering, Stanford University, CA	Oct. 2008- Aug. 2009
Assistant Professor, Electrical Engineering, Penn State University, PA	Jan. 2002-Jul. 2006
Assistant Professor, Electrical and Computer Engineering, Lehigh University, PA	Aug. 2000- Dec. 2001
Graduate Research Assistant, WINLAB, Rutgers University, NJ,	Sep. 1993-Aug. 2000
Member of Technical Staff (Summer Internship), LUCENT Technologies, NJ	Jun. 1997- Sep. 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	Jun. 1991
BS, Physics Dept., Bogazici University, Istanbul, Turkey	Jun. 1991

Awards and Honors

IEEE Information Theory Society President (2020)

IEEE Communications Society Best Tutorial Paper Award (2019)

Distinguished Lecturer of IEEE Information Theory Society (2019-present)

IEEE Information Theory Society Vice President (2019)

IEEE Information Theory Society 2nd Vice President (2018)

IEEE Women In Communications Engineering Outstanding Achievement Award (2018)

Distinguished Lecturer of IEEE Communications Society (2018-present)

Clarivate Analytics Highly Cited Researcher (2017)

Distinguished Lecturer of IEEE Vehicular Technology Society (2017-present)

IEEE Communications Society Marconi Prize Paper Award (2014)

Fellow of IEEE *for contributions to wireless communication theory and wireless information security*

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)

Research Related Statistics

Number of publications: 5 book chapters, 92 journal papers, 228 conference papers.

Citation count: 12535, h-index: 51 (Google Scholar).

Research supervision: Postdoc: 5 previous; PhD: 15 graduated, 4 current; MS: 9 graduated, 1 current.

Keynotes/Invited Talks/Tutorials (since 2011): 40.

Research Funding: 16 NSF grants, 2 DARPA programs, 1 ARL CTA, 9 Industrial/Other grants.

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 next generation multi-genre networks (for example social communication and tactical networks) and content delivery networks, as well as wired and wireless communication networks of the future (for example Internet of Things (IoT) and energy-sustainable networking). More specifics topics are:

- Energy-Conscious Communications
  - Wireless networks with energy harvesting nodes
  - Energy and signal cooperation in communication networks
  - Energy harvesting distributed storage and caching

- Information Security

- Information theoretic security 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

- Content Delivery Networks

  - Coded caching over noisy channels
  - Coded caching for heterogenous wireless networks

- Modern Communication Theory

  - Emerging communication, sensing and computing paradigms for the IoT era
  - Age of Information

- Multiterminal Information Theory

  - Information theory of wireless networks: capacity of models with state, feedback, and cooperation
  - Interactive compression and function computation

- Network and Data Science
  - Fundamental limits of reliable information flow over social communication networks
  - Learning algorithms with performance guarantees

Publications

Citation Numbers *Source: Google Scholar*

h-index: 51 (38 since 2015); i10-index: 168 (108 since 2015); citations: 12535 (6895 since 2015)

Book Chapters

[5] B. Guler and A. Yener, "Influence Propagation in Social Networks with Positive and Negative Relationships," *Encyclopedia of social network analysis and mining*, Editors: R. Alhajj, and J. Rokne, Springer Publishing Company, 2018.

[4] S. V. Leng and A. Yener, "Resource Allocation in BANs for Energy Harvesting Healthcare Monitoring", *Handbook of Large-Scale Distributed Computing in Smart Healthcare*, Editors: S. Khan, A. Zomaya, A. Abbas, Springer, 2017.

[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, Cambridge, 2017.

[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

[92] R. Chou, and A. Yener, "Gaussian Wiretap Channel Models when the Eavesdropper can Arbitrarily Jam," *IEEE Transactions on Information Theory,* submitted Jun. 2019.

[91] A. Ibrahim, A. Zewail, and A.Yener, "Device-to-Device Coded Caching with Distinct Cache Sizes," *IEEE Transactions on Communications,* submitted Mar. 2019 (in revision).

[90] M. Nafea and A. Yener, "The Caching Broadcast Channel with a Wire and Cache Tapping Adversary of Type II," *IEEE Transactions on Information Theory,* submitted Aug. 2018.

[89] R. Chou, M. Bloch. and A. Yener, "Universal Covertness for Discrete Memoryless Sources," *IEEE Transactions on Information Theory,* submitted Aug. 2018.

[88] M. Tahmasbi, M. Bloch, and A. Yener, "Learning an Adversary's Actions for Secret Communication," *IEEE Transactions on Information Theory,* submitted Jul. 2018 (in revision).

[87] R. Chou, and A. Yener, "Strongly Secure Multiuser Communication and Authentication with Anonymity Constraints," *IEEE Transactions on Information Theory,* submitted Jan. 2018 (in revision).

Journal Articles Published

[86] A. Zewail, and A. Yener, "Device-to-Device Secure Coded Caching," *IEEE Transactions on Information Forensics and Security,* Dec. 2019.

[85] M. Nafea and A. Yener, "Generalizing Multiple Access Wiretap and Wiretap II Channel Models: Achievable Rates and Cost of Strong Secrecy," *IEEE Transactions on Information Theory,* 65(8), pp. 5125 - 5143, Aug. 2019.

[84] R. Chou, and A. Yener, "Secret-Key Generation in Many-to-One Networks: An Integrated Game-Theoretic and Information-Theoretic Approach," *IEEE Transactions on Information Theory,* 65(8), pp. 5144-5159, Aug. 2019.

[83] S. Fong, J. Yang and A. Yener, "Non-Asymptotic Achievable Rates for Gaussian Energy-Harvesting Channels: Best-Effort and Save-and-Transmit," *IEEE Transactions on Information Theory,* accepted for publication, Jun. 2019.

[82] S. Saeedi Bidokthi, M. Wigger and A. Yener, "Benefits of Cache Assignment on Degraded Broadcast Channels," *IEEE Transactions on Information Theory,* accepted for publication, Jun. 2019.

[81] S. Leng and A.Yener, "Age of Information Minimization for an Energy Harvesting Cognitive Radio," *IEEE Transactions on Cognitive Communications and Networking,* 5(2), pp. 427-439, Jun. 2019.

[80] A. Ibrahim, A. Zewail, and A.Yener, "Coded Caching for Heterogeneous Systems: An Optimization Perspective," *IEEE Transactions on Communications,* accepted for publication, Apr. 2019.

[79] S. Leng and A. Yener, "Relay-Centric Two-Hop Networks with Asymmetric Wireless Energy Transfer: Stackelberg Games," *IEEE Transactions on Green Communications and Networking*, accepted for publication, Mar. 2019.

[78] R. Chou, and A. Yener, "Polar Coding for the Multiple Access Wiretap Channel via Rate-Splitting and Cooperative Jamming", *IEEE Transactions on Information Theory,* pp. 7903-7921, 64(12), Dec. 2018.

[77] B. Guler, A. Yener, and A. Swami, "The Semantic Communication Game," *IEEE Transactions on Cognitive Communications and Networking,* 4(4), pp. 787-802, Dec. 2018.

[76] B. Guler, D. Gunduz and A. Yener, " Lossy Transmission of Correlated Sources over a Multiple Access Channel: Necessary Conditions and Separation Results," *IEEE Transactions on Information Theory,* 64(9), pp. 6081-6097, Sep. 2018.

[75] E. MolavianJazi, and A. Yener, "Subset Source Coding," *IEEE Transactions on Information Theory,* 64(9), pp. 5989-6012, Sep. 2018.

[74] A. Zewail, and A. Yener, "Combination Networks with or without Secrecy Constraints: The Impact of Caching Relays," *IEEE Journal on Selected Areas in Communications,*, 36(7), pp. 1-13, Jul. 2018.

[73] M. Nafea and A. Yener, "A New Wiretap Channel Model and its Strong Secrecy Capacity," *IEEE Transactions on Information Theory,* 64(3), pp. 2077-2092, Mar. 2018.

[72] B. Varan and A. Yener, "Matching Games for Ad Hoc Networks with Wireless Energy Transfer," *IEEE Transactions on Green Communications and Networking*, 1(4), pp. 503-515, Dec. 2017.

[71] 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,* 63(11), pp. 7420-7441, Nov. 2017.

[70] B. Guler, A. Yener, P. Basu and A. Swami, "Two-party Zero-error Function Computation with Asymmetric Priors," *Entropy: Special Issue on Network Information Theory,* Feature Paper (Invited), 19(12), 635, Nov. 2017.

[69] A. Zewail and A. Yener, "Multi-Terminal Two-hop Untrusted Relay Networks with Hierarchical Security Guarantees," *IEEE Transactions on Information Forensics and Security*, 12(9), pp. 2052-2066, Sep. 2017.

[68] K. Tutuncuoglu, O. Ozel, A. Yener and S. Ulukus, "The Binary Energy Harvesting Channel with a Unit-Sized Battery," *IEEE Transactions on Information Theory,* 63(7), pp. 4240-4256, Jul. 2017.

[67] 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*, 34(5), pp. 1590-1603, May 2016.

[66] 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*, 34(5), pp. 1550-1564, May 2016.

[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.

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[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. **(IEEE Communications Society 2019 Best Tutorial Paper Award)**

[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. Octeau, "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 Unknown and 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.

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[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.

[30] Y. Tian and A. Yener, "The Gaussian Interference Relay Channel: Improved Achievable Rates and Sum Rate Upperbounds Using a Potent Relay", *IEEE Transactions on Information Theory, Special Issue on Interference Networks*, 57(5), pp. 2865-2879, May 2011.

[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.

[26] M. Chen and A. Yener, "Power Allocation for F/TDMA Multiuser Two-way Relay Networks", *IEEE Transactions on Wireless Communications*, February 2010, 9(2), pp. 546 - 551.

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[24] M.Chen and A. Yener, "Multiuser Two-Way Relaying: Detection and Interference Management Strategies", *IEEE Transactions on Wireless Communications*, August 2009, 8(8), pp. 4296 - 4305.

[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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[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.

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[10] O. Filiz and A. Yener, "Rank Constrained Temporal-Spatial Filters for CDMA Systems ," *IEEE Transactions on Wireless Communications*, November 2004, 3(6), pp. 1974-1979.

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[1] A. Yener and C. Rose, "Genetic Algorithms Applied to Cellular Call Admission Problem: Local Policies", *IEEE Transactions on Vehicular Technology*, February 1997, 46(1), pp. 72-79.

Conference Publications

[228] A. Zewail and A. Yener, "Secure Caching and Delivery for Combination Networks with Asymmetric Connectivity," to appear in *Proceedings of the IEEE Information Theory Workshop, ITW'19*, Visby, Sweden, Aug. 2019.

[227] A. Zewail and A. Yener, "Untrusted Caches in Two-layer Networks," to appear in *Proceedings of the IEEE International Symposium on Information Theory, ISIT'19*, Paris, France, Jul. 2019.

[226] A. Chou and A. Yener, "The Degraded Gaussian Many-Access Wiretap Channel," to appear in *Proceedings of the IEEE International Symposium on Information Theory, ISIT'19*, Paris, France, Jul. 2019.

[225] M. Tahmasbi, M. Bloch and A. Yener, "In-Band Sensing of the Adversary's Channel for Secure Communication in Wireless Channels," to appear in *Proceedings of the IEEE International Symposium on Information Theory, ISIT'19*, Paris, France, Jul. 2019.

[224] A. Zewail and A. Yener, "Cache-Aided Combination Networks with Asymmetric End Users," to appear in *Proceedings of the IEEE International Workshop on Signal Processing Advances in Wireless Communications, SPAWC'19*, Cannes, France, Jul. 2019.

[223] A. Ibrahim, A. Zewail, and A. Yener, "Coded Placement for Systems with Shared Caches," to appear in *Proceedings of the IEEE International Conference on Communications, ICC'19*, Shanghai, China, May 2019.

[222] S. Leng and A. Yener, "Impact of Imperfect Spectrum Sensing on Age of Information in Energy Harvesting Cognitive Radios," to appear in *Proceedings of the IEEE International Conference on Communications, ICC'19*, Shanghai, China, May 2019.

[221] S. Leng and A. Yener, "Minimizing Age of Information for an Energy Harvesting Cognitive Radio," *Proceedings of the IEEE Wireless Communications and Networking Conference, WCNC'19*, Marakkesh, Morocco, Apr. 2019.

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[93] G. Xiong, C. Chen, S. Kishore and A. Yener, "Smart (In-home) Power Scheduling for Demand Response on the Smart Grid", *IEEE Power and Energy Society (PES) Conference on Innovative Smart Grid Technologies*, Anaheim, CA, January 2011.

[92] X. He and A. Yener, "Providing Secrecy Irrespective of Eavesdropper's Channel State", *IEEE Global Telecommunications Conference, Globecom'10*, Miami, Florida, December 2010.

[91] X. He and A. Yener, "Providing Secrecy When the Eavesdropper Channel Is Arbitrarily Varying: A Case for Multiple Antennas", *48th Annual Allerton Conference on Communication, Control, and Computing, Allerton'10*, Monticello, IL, September 2010.

[90] Y. Tian and A. Yener, "Sum Capacity of the Deterministic Interference Channel with an Out-of-Band Half-Duplex Relay", *48th Annual Allerton Conference on Communication, Control, and Computing, Allerton'10*, Monticello, IL, September 2010.

[89] X. He and A. Yener, "The Role of Channel States in Secret Key Generation", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC'10*, Istanbul, Turkey, September 2010.

[88] S. Goel and A. Yener, "Connectivity in Wireless Networks with Dynamic Key Compromise and Recovery", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC'10*, Istanbul, Turkey, September 2010.

[87] S. Goel, V. Aggarwal, A. Yener and A. R. Calderbank, "Modeling Location Uncertainty for Eavesdroppers: A Secrecy Graph Approach", *IEEE International Symposium on Information Theory, ISIT'10*, Austin, Texas, June 2010. **(Best Student Paper Award Finalist)**

[86] Y. Tian and A. Yener, "The Ergodic Fading Interference Channel with an On-and-Off Relay", *IEEE International Symposium on Information Theory, ISIT'10*, Austin, Texas, June 2010.

[85] X. He and A. Yener, "A New Outer Bound for the Secrecy Capacity Region of the Gaussian Two-Way Wiretap Channel", *IEEE International Conference on Communications, ICC'10*, Cape Town, South Africa, May 2010. **(Best Paper Award, ICC 2010 Communication Theory Symposium)**

[84] Y. Tian and A. Yener, "Improved Achievable Rates for the Gaussian Interference Relay Channel", *IEEE International Conference on Communications, ICC'10*, Cape Town, South Africa, May 2010.

[83] E. N. Ciftcioglu, Y. E. Sagduyu, A. Yener, and R. Berry, "Queue Based Compression in a Two-Way Relay Network", *Conference on Information Sciences and Systems, CISS'09*, Princeton, NJ, March 2010.

[82] G. Xiong, S. Kishore and A. Yener, "Cost Constrained Spectrum Sensing in Cognitive Radio Networks", *Conference on Information Sciences and Systems, CISS'09*, Princeton, NJ, March 2010.

[81] G. Xiong, S. Kishore and A. Yener, "On Performance Evaluation of Cooperative Spectrum Sensing in Cognitive Radio Networks", *Conference on Information Sciences and Systems, CISS'09*, Princeton, NJ, March 2010.

[80] X. He and A. Yener, "Secrecy and Reliable Byzantine Detection in a Gaussian Untrusted Two-Hop Link", *IEEE Information Theory Workshop, ITW'10*, Cairo, Egypt, January 2010.

[79] X. He and A. Yener, "Secure Degrees of Freedom for Gaussian Channels with Interference: Structured Codes Outperform Gaussian Signaling", *IEEE Global Telecommunications Conference, Globecom'09*, Honolulu, Hawaii, December 2009.

[78] Y. Tian and A. Yener, "The Gaussian Interference Relay Channel with a Potent Relay", *IEEE Global Telecommunications Conference, Globecom'09*, Honolulu, Hawaii, December 2009.

[77] G. Xiong, S. Kishore and A. Yener, "On Low Complexity Cooperative Spectrum Sensing for Cognitive Networks," *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, CAMSAP'09*, Aruba, Dutch Antilles, Dec. 2009.

[76] A. Yener and X. He, "Interference Channels with Strong Secrecy", *47th Annual Allerton Conference on Communication, Control, and Computing, Allerton'09*, Monticello, IL, September 2009.

[75] E. N. Ciftcioglu, Y. E. Sagduyu, R. Berry, and A. Yener, "Cost Sharing with Network Coding in Two-Way Relay Networks", *47th Annual Allerton Conference on Communication, Control, and Computing, Allerton'09*, Monticello, IL, September 2009.

[74] X. He and A. Yener, "Secure Communication with a Byzantine Relay", *IEEE International Symposium on Information Theory, ISIT'09*, Seoul, Korea, June 2009.

[73] X. He and A. Yener, "The Gaussian Many-to-One Interference Channel with Confidential Messages", *IEEE International Symposium on Information Theory, ISIT'09*, Seoul, Korea, June 2009.

[72] D. Gunduz, A. Yener, A. Goldsmith and H. V. Poor, "The Multi-way Relay Channel", *IEEE International Symposium on Information Theory, ISIT'09*, Seoul, Korea, June 2009.

[71] M. Chen and A. Yener, "Power Allocation for Multi-Access Two-Way Relaying", *IEEE International Conference on Communications, ICC'09*, Dresden, Germany, June 2009.

[70] X. He and A. Yener, "K-user Interference Channels: Achievable Secrecy Rate and Degrees of Freedom," *IEEE Information Theory Workshop on Networking and Information Theory, ITW'09*, Volos, Greece, June 2009.

[69] X. He and A. Yener, "A New Outer Bound for the Gaussian Interference Channel with Confidential Messages", *Conference on Information Sciences and Systems, CISS'09*, Baltimore, MD, March 2009.

[68] O. Simeone and A. Yener, "The Cognitive Multiple Access Wire-tap Channel", *Conference on Information Sciences and Systems, CISS'09*, Baltimore, MD, March 2009.

[67] X. He and A. Yener, "Two-hop Secure Communication Using an Untrusted Relay: A Case for Cooperative Jamming," *IEEE Global Telecommunications Conference, Globecom'08*, New Orleans, LA, December 2008.

[66] E. N. Ciftcioglu, A. Yener and R. Berry, "Stability Regions for Two-Way Relaying with Network Coding," *Wireless Internet Conference, WICON'08*, Maui, HI, November 2008.

[65] X. He and A. Yener, "On the Role of Feedback in Two-way Secure Communication," *42nd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, October 2008.

[64] X. He and A. Yener, "End-to-end Secure Multi-hop Communication with Untrusted Relays is Possible," *42nd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, October 2008.

[63] X. He and A. Yener, "Providing Secrecy with Lattice Codes", *46th Annual Allerton Conference on Communications, Control, and Computing, Allerton'08,* Monticello, IL, September 2008.

[62] X. He and A. Yener, "The Role of an Untrusted Relay in Secret Communication," *IEEE International Symposium on Information Theory, ISIT'08*, Toronto, Canada, July 2008.

[61] M. Chen and A. Yener, "Multiuser Two-Way Relaying for Interference Limited Systems," *IEEE International Conference on Communications, ICC'08*, Beijing, China, May 2008.

[60] L. Huie, X. He and A. Yener, "Joint Power Scheduling and Estimator Design for Sensor Networks Across Parallel Channels," *IEEE International Conference on Communications, ICC'08*, Beijing, China, May 2008.

[59] E. N. Ciftcioglu, A. Yener and R. Berry, "Stability of Bi-Directional Cooperative Relay Networks," *IEEE Information Theory Workshop, ITW'08*, Porto, Portugal, May 2008.

[58] M. Chen and A. Yener, "Interference Management for Multiuser Two-Way Relaying," *Conference on Information Sciences and Systems, CISS'08*, Princeton, NJ, March 2008.

[57] X. He and A. Yener, "On the Energy Delay Trade-off of a Two-Way Relay Network," *Conference on Information Sciences and Systems, CISS'08*, Princeton, NJ, March 2008.

[56] X. He and A. Yener, "Rate Equivocation Region of a Class of Relay Channels with Orthogonal Components," *41st Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2007 (Invited Paper).

[55] K. Lee and A. Yener, "Throughput Enhancing Cooperative Spectrum Sensing Strategies for Cognitive Radios," *41st Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2007 (Invited Paper).

[54] Y. Li, Z. Shen, S. Kishore, and A. Yener, "Distributed and Collaborative Primary Signal Feature Estimation for Cognitive Radios under Communication Constraints," *41st Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2007 (Invited Paper).

[53] E. Tekin and A. Yener, " Secrecy Sum-Rates for the Multiple-Access Wire-Tap Channel with Ergodic Block Fading," *45th Annual Allerton Conference on Communication, Control, and Computing*, Monticello, IL, September 2007.

[52] E. Tekin and A. Yener, "Achievable rates for Two-way Wire-Tap Channels," *IEEE International Symposium on Information Theory, ISIT'07*, Nice, France, June 2007.

[51] E. Tekin and A. Yener, "The Multiple Access Wire-Tap Channel: Wireless Secrecy and Cooperative Jamming," *Information Theory and Applications Workshop, ITA'07*, San Diego, CA, January 2007. (Invited Paper).

[50] K. Lee and A. Yener, "Outage Performance of Cognitive Wireless Relay Networks," *IEEE Global Telecommunications Conference, Globecom'06*, San Francisco, CA, November 2006.

[49] K. Lee and A. Yener, "Spectrum-Sensing Opportunistic Wireless Relay Networks: Outage and Diversity Performance," *40th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2006.

[48] E. Tekin and A. Yener, " Achievable Rates for the General Gaussian Multiple Access Wire-Tap Channel with Collective Secrecy," *44th Annual Allerton Conference on Communication, Control, and Computing*, Monticello, IL, September 2006.

[47] M. Chen, C. Oh and A. Yener, " Efficient Scheduling for Delay Constrained CDMA Wireless Sensor Networks," *IEEE Vehicular Technology Conference, VTC'06 Fall*, Montreal, Canada, September 2006.

[46] M. Chen, C. Oh and A. Yener, " Efficient Scheduling for Delay Constrained Multi-Rate CDMA Systems," *IEEE 9th International Symposium on Spread Spectrum Techniques and Applications, ISSSTA'06*, Manaus, Brazil, August 2006.

[45] E. Tekin and A. Yener, " The Gaussian Multiple Access Wire-Tap Channel with Collective Secrecy Constraints," *IEEE International Symposium on Information Theory, ISIT'06*, Seattle, WA. July 2006.

[44] S. Serbetli and A. Yener, "Power Allocation and Hybrid Relaying Strategies for F/TDMA Ad Hoc Networks," *IEEE International Conference on Communications, ICC'06*, Istanbul, Turkey, June 2006.

[43] G. Khandelwal, A. Yener, K. Lee and S. Serbetli, "ASAP: A MAC Protocol for Dense and Time Constrained RFID Systems," *IEEE International Conference on Communications, ICC'06*, Istanbul, Turkey, June 2006.

[42] G. Khandelwal, A. Yener and M. Chen, " OPT: Optimal Protocol Tree for Efficient Tag Identification in Dense RFID Systems," *IEEE International Conference on Communications, ICC'06*, Istanbul, Turkey, June 2006.

[41] K. Lee and A. Yener, "Iterative Power Allocation Algorithms for Amplify/Estimate/Compress-and-Forward Multi-Band Relay Channels," *Conference on Information Sciences and Systems, CISS'06*, Princeton, NJ, March 2006.

[40] M. Chen, S. Serbetli, and A. Yener, "Distributed Power Allocation for Parallel Relay Networks," *IEEE Global Telecommunications Conference, Globecom'05*, St. Louis, MO, November 2005.

[39] E. Tekin, S. Serbetli and A. Yener, "On Secure Signaling for the Gaussian Multiple Access Wire-Tap Channel," *39th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2005.

[38] K. Lee and A. Yener, "On the Achievable Rate of Three-Node Cognitive Hybrid Wireless Networks," *International Conference on Wireless Networks, Communications, and Mobile Computing, Wireless-Com'05*, Maui, HI, June 2005.

[37] S. Serbetli and A. Yener, "Optimum Power Allocation for Relay Assisted F/TDMA Ad Hoc Networks," *International Conference on Wireless Networks, Communications, and Mobile Computing, WirelessCom'05*, Maui, HI, June 2005.

[36] S. Serbetli and A. Yener, "Transmission Strategies for Correlated MIMO Links with Imperfect Channel Estimates," *IEEE International Conference on Communications, ICC'05*, Seoul, South Korea, May 2005.

[35] K. Lee and A. Yener, "On Resource Allocation for the Multi-band Relay Channel," *Conference on Information Sciences and Systems, CISS'05*, Baltimore, MD, March 2005.

[34] S. Serbetli and A. Yener, "Optimum Power Allocation for Multiuser Relay Networks," *Conference on Information Sciences and Systems, CISS'05*, Baltimore, MD, March 2005.

[33] C. Oh and A. Yener, "Downlink Throughput Maximization: TDMA vs CDMA," *Conference on Information Sciences and Systems, CISS'05*, Baltimore, MD, March 2005.

[32] S. Serbetli and A. Yener, "Beamforming and Scheduling Strategies for Time Slotted Multiuser MIMO Systems," *38th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2004.

[31] A. Yener and S. Kishore, "Distributed Power Control and Routing for Clustered CDMA Wireless Ad Hoc Networks," *IEEE Vehicular Technology Conference, VTC'04 Fall*, Los Angeles, CA, September 2004.

[30] H. Zhu, G. Cao, A. Yener and A.D. Mathias, "EDCF-DM: A Novel Enhanced Distributed Coordination Function for Wireless Ad Hoc Networks," *IEEE International Conference on Communications, ICC'04*, Paris, France, June 2004.

[29] S. Serbetli and A. Yener, "Signature Sequence Selection for CDMA Systems with Multiple Receiver Antennas," *IEEE International Conference on Communications, ICC'04*, Paris, France, June 2004.

[28] S. Serbetli, S. Bethanabhotla and A. Yener, "The Effect of Channel Estimation on Transceiver Design for MIMO Systems with QoS Constraints," *Conference on Information Sciences and Systems, CISS'04*, Princeton, NJ, March 2004.

[27] S. Serbetli and A. Yener, "Signature and Beamformer Design for MIMO-CDMA with Various Levels of Feedback," *Conference on Information Sciences and Systems, CISS'04*, Princeton, NJ, March 2004.

[26] A. Yener and O. Filiz, "Rank Constrained Temporal-Spatial Filters for CDMA Systems in Multipath Channels," *IEEE Global Telecommunications Conference, Globecom'03*, San Francisco, CA, December 2003.

[25] C. Oh and A. Yener, "Further Results on Adaptive CDMA Cell Sectorization with Linear Multiuser Detection," *37th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 2003 (Invited Paper).

[24] C. Oh and A. Yener, "Adaptive CDMA Cell Sectorization with Linear Multiuser Detection," *IEEE Vehicular Technology Conference, VTC'03 Fall*, Orlando, FL, October 2003.

[23] S. Serbetli and A. Yener, "Signature and Beamformer Optimization for MIMO-CDMA Based on the Mean Squared Error Criterion," *Conference on Information Sciences and Systems, CISS'03*, Baltimore, MD, March 2003.

[22] O. Filiz and A. Yener, "Rank Constrained Temporal-Spatial Filters for CDMA Systems with Base Station Antenna Arrays," *Conference on Information Sciences and Systems, CISS'03*, Baltimore, MD, March 2003.

[21] S. Serbetli and A. Yener, " Iterative Transceiver Optimization for Multiuser MIMO Systems," *40th Allerton Conf. on Communications, Control and Computing*, Monticello, Illinois, October 2002.

[20] A. Yener and S. Serbetli, " Transmitter Optimization for Multiuser MIMO Systems," *IEEE International Symposium on Advances in Wireless Communications, ISWC'02*, Victoria, BC, Canada, September 2002 (Invited Paper).

[19] S. Ulukus and A. Yener, "Iterative Transmitter and Receiver Optimization for Synchronous CDMA Systems," *IEEE International Symposium on Information Theory, ISIT'02*, Lausanne, Switzerland, June 2002.

[18] S. Ulukus and A. Yener, "Iterative Joint Optimization of CDMA Signature Sequences and Receiver Filters," *Conference on Information Sciences and Systems, CISS'02*, Princeton, NJ, March 2002.

[17] P. Spasojevic and A. Yener, "Constrained Slowest Descent Detectors for Multiuser CDMA Systems," *IEEE International Symposium on Information Theory, ISIT'01*, Washington D.C., June 2001.

[16] P. Spasojevic and A. Yener, "Improved Soft Interference Cancellation for CDMA Systems," *IEEE International Conference on Communications, ICC'01*, Helsinki, Finland, June 2001.

[15] A. Yener and S. Ulukus, "On the Fading Channel Performance of Temporal–Spatial Filters for CDMA," *IEEE Vehicular Technology Conference, VTC'01*, Rhodes, Greece, May 2001.

[14] A. Yener, "Nonlinear Programming Based Detectors for Multiuser Systems," *International Conference on Information Technology: Coding and Computing, ITCC'01*, Las Vegas, NV, April 2001, (Invited Paper).

[13] R. Sinha, A. Yener and R. D. Yates, "Constrained Detection for Noncoherent Nonlinear Multiuser Communications," *34th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, October 2000.

[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.

[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.

Selected Invited Talks, Keynotes and Tutorials (since 2011)

[40] "What can Machine Learning Do for Communications?," **Invited Talk**, NYU Data Science Center, NewYork, NY, January 2019.

[39] "Recent Advances in Cache-Aided Wireless Networks ," **Invited Talk**, University of Virginia, Charlottesville, VA, January 2019.

[38] "Recent Advances in Cache-Aided Wireless Networks ," **IEEE Communications Society Distinguished Lecture**, University of Utah, Salt Lake City, UT, December 2018.

[37] "Recent Advances in Cache-Aided Wireless Networks ," **Invited Talk**, Sun Yat-sen University Coding and Information Theory Workshop, Guagzhou, China, November 2018.

[36] "Foundations of Energy Harvesting and Energy Cooperating Wireless Networks," **Keynote**, The Fihth International Workshop on Next Generation Green Wireless Networks (Next-GWiN 2018), Sheffield, England, September 2018.

[35] "Women in Engineering Academia: A lunch discussion," **IEEE WiE Keynote**, IEEE VTC Fall, Chicago, IL, August 2018.

[34] "Towards Design Principles of Next Generation Networked Systems: Information Security and Energy Sustainability," **Physics and Theory Colloquium**, Los Alamos National Laboratory, Los Alamos, NM, July 2018.

[33] "Foundations of Energy Harvesting and Energy Cooperating Wireless Networks," **IEEE Vehicular Technology Society Distinguished Lecture Tour**, Imperial College, London; King's College, London; Trinity College, Dublin; University of Edinburgh, Edinburgh, July 2018.

[32] "Recent Advances in Cache-Aided Wireless Networks ," **Keynote**, 22nd International ITG Workshop on Smart Antennas (WSA 2018), Bochum, Germany, March 2018.

[31] "Energy Harvesting and Energy Cooperating Wireless Networks: A New Frontier for Communication Theory and Information Theory," **Invited Talk**, Systems Seminar, California Institute of Technology, Pasadena, CA, November 2017.

[30] "Foundations of Energy Harvesting Communications," **Invited Lecture**, 10th Annual School of Information Theory GeorgiaTech, June 2017.

[29] "Foundations of Energy Harvesting and Energy Cooperating Wireless Networks," **Keynote**, WiOpt 2017 GREENNET Workshop, Paris, France, May 2017.

[28] "Foundations of Energy Harvesting Wireless Communications," **Keynote**, IEEE Wireless Communications and Networking Conference, WCNC'17 Workshop on Energy Harvesting and Remotely Powered Wireless Communications for IoT, San Francisco, CA, March 2017.

[27] "Energy Harvesting Wireless Networks: A New Frontier for Communication Theory and Information Theory," **Invited Talk**, Institute for Pure and Applied Mathematics, Emerging Wireless Networks Workshop, University of California Los Angeles, CA, February 2017.

[26] "Energy Harvesting Wireless Networks: A New Frontier for Communication Theory and Information Theory," **Invited Talk**, Massachusetts Institute of Technology, Cambridge MA, September 2016.

[25] "Energy Harvesting Wireless Networks: A New Frontier for Communication Theory and Information Theory," **Invited Talk**, Ecole Polytechnique Federale de Lausanne, Switzerland, July 2016.

[24] "Energy Harvesting Wireless Networks: A New Frontier for Communication Theory and Information Theory," **Invited Talk**, Technical University of Delft, Netherlands, July 2016.

[23] "Energy Harvesting and Remotely Powered Wireless Networks," **Tutorial**, IEEE International Symposium on Information Theory, ISIT'16, July 2016, Barcelona.

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

[21] "Towards Design Principles of Next Generation Networked Systems: Information Security and Energy Sustainability," **Distinguished Lecture**, Bradley Distinguished Lecture Series, Virginia Tech, Blacksburg, VA, April 2016.

[20] "MIMO Wiretap Channel with a Cooperative Jammer," **Invited Talk**, Mathematical Tools of Information Theoretic Security Workshop, Huawei Technologies/Supelec, Paris, France, September 2015.

[19] "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, London, England, June 2015.

[18] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE International Conference on Communications, ICC'15, London, England, June 2015.

[17] "Energy Harvesting Wireless Communication Networks," **Invited Talk**, Department Colloquium, Electrical Engineering and Computer Science Department, Syracuse University, Syracuse, NY, April 2015.

[16] "Design Principles for Energy Harvesting Wireless Communication Networks," **Invited Talk**, Analytical Tools for Next Generation Heterogeneous Wireless Networks Workshop, Macquarie University, , Sydney, Australia, June 2014.

[15] "Security by the Physical Layer: A Promising Direction for Next Generation Wireless Network Design," **Keynote**, ICC 2014 Workshop on Physical Layer Security, Sydney, Australia, June 2014.

[14] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE Wireless Communications and Networking Conference, WCNC'14, Istanbul, Turkey, April 2014.

[13] "Energy Harvesting Wireless Communication Networks," **Invited Talk**, ISL Colloquium, Electrical Engineering Department, Stanford University, Stanford, CA, March 2014.

[12] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE Global Communications Conference, Globecom'13, Atlanta, GA, December 2013.

[11] "Wireless Networks and Information Security: Models and Metrics," **Invited Talk**, Workshop on Multi spectrum metrics for Cyber Defense, MIT, Cambridge, MA, October 2013.

[10] "Two-way Green Cooperative Networking with Energy Harvesting," **Invited Talk**, IEEE Communication Theory Workshop, Phuket, Thailand, June 2013.

[9] "Energy Harvesting Wireless Networks," **Invited Talk**, Wireless Communications and Economics Workshop, Chinese University of Hong Kong, Hong Kong, June 2013.

[8] "Energy Harvesting Wireless Communications," **Tutorial**, IEEE International Conference on Communications, ICC'13, Budapest, Hungary, June 2013.

[7] "Green Wireless Communications," **Tutorial**, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC'12, Sydney, Australia, September 2012.

[6] "Green Wireless Networking with Energy Harvesting Nodes," **Invited Talk**, Workshop on Methodological Foundations of Green Radio, Paris, France June 2012.

[5] "Multiuser Wireless Secrecy: Lessons Learned from Information Theory," **Invited Talk**, Supelec, France, June 2012.

[4] "Secrecy: Benefits of Interaction," **Invited Talk**, Banff International Research Station (BIRS) Workshop on Interactive Information Theory, Banff, Canada, January 2012.

[3] "Interference, Structured Random Codes and Secrecy," **Invited Talk**, Banff International Research Station (BIRS) Workshop on Algebraic Structure in Information Theory, Banff, Canada, August 2011.

[2] "Energy Efficiency of Future Networks," **Invited Lecture**, Wireless Information Theory Summer School, Oulu, Finland, July 2011.

[1] "Cooperation, Interference and Secrecy: Lessons Learned from Information Theory," **Keynote**, ICC 2011 Workshop on Physical Layer Security, Kyoto, Japan, June 2011.

Funded Research Grants

NSF

- Coded Caching for Heterogeneous and Energy Harvesting Systems (9/2017-8/2019), NSF-CCF, $225,000 (**Sole PI**).

- Game-theoretic Approaches to Energy Cooperation (9/2017-2/2020), NSF-ECCS, $129,917 (**Sole PI**).

- Rechargeable Networks with Energy Cooperation (10/2015-10/2019), NSF-CNS, $460,000 (**PI**, with S. Ulukus, UMD).

- Incentive Compatible Security (10/2013-10/2018), NSF-SaTC, $1,200,000 (**PI**, with R. Berry, Northwestern and S. Ulukus, UMD).

- Foundations of Energy Harvesting Wireless Communications (7/2014-7/2018), NSF-CCF, $496,942 (**PI**, with S. Ulukus, UMD).

- Realizing the Vision of Information-Theoretic Security for Wireless Communications (09/2013-09/2017), NSF-CCF, $500,000 (**PI**, with M. Bloch, Georgia Tech.).

- Optimizing Communications with Harvested Energy in Energy Starved Environments: A Tailored Fit for Healthcare Monitoring (01/2016-09/2016), NSF-ERC Advanced Self-Powered Systems of Integrated Sensors and Technologies (ASSIST), $75,000 (**PI**, Penn State PI S. Troiller-McKinstry).

- Support for North American School for Information Theory (05/2014-05/2015), NSF-CIF, $20,000 (**PI**).

- 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 (**Sole 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 8 and 9): Task Lead (interdisciplinary team from UIUC, BBN 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 (**co-PI** with T. Jeager 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 (**co-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. Boult, 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. Boult, EECS, Lehigh).

Professional Activities

Elected/Appointed Positions

Vice President, IEEE Information Theory Society, 2019.

Second Vice President, IEEE Information Theory Society, 2018.

Member, IEEE Fellow Committee, 2018-present.

Member, IEEE Richard W. Hamming Medal Committee, 2017-present.

Chair, Membership Committee, IEEE Information Theory Society, 2018.

Chair, Awards Committee, IEEE Information Theory Society, 2019.

Member, Shannon Award Selection Committee, IEEE Information Theory Society, 2019.

Member, Cover Award Selection Committee, IEEE Information Theory Society, 2019.

Member, IEEE Ad Hoc Committee on Society Finances, IEEE Information Theory Society, 2018-present.

Member, Conference Committee, IEEE Information Theory Society, 2019.

Member, IEEE Ad Hoc Committee on Best Practices for Society/Technical Council Fellow Evaluating Committees, 2018-present.

Member, Awards Committee, IEEE Communications Society, 2018 (Stepped down due to nomination of authored paper).

Member of the Board of Governors, IEEE Information Theory Society, elected for the term 2018-2020.

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, 2014-2017.

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

Senior Editor, IEEE Journal on Selected Areas in Information Theory (JSAIT), 2019-Present.

Senior Editor, IEEE Journal on Selected Areas in Communications (JSAC), 2016-Present.

Associate Editor, IEEE Transactions on Mobile Computing, Jan. 2016-Nov. 2018.

Editor, IEEE Transactions on Communications, 2009-2012.

Editor, IEEE Transactions on Wireless Communications, 2001-2010.

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 North American School of Information Theory, Los Angeles, CA, August 2010.

General Chair, Second North American School of Information Theory, Evanston, IL, August 2009.

Organizer and General Chair, First School of Information Theory, University Park, PA, June 2008.

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, October 2008.

TPC Co-chair, *Communication Theory Symposium*, IEEE International Conference on Communications (ICC'18), Kansas City, MO, May 2018.

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, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2019, Hawaii, December 2019.

TPC Member, IEEE International Symposium on Information Theory, ISIT'19, Paris, France, July 2019.

TPC member, *Communication Theory Symposium*, IEEE International Conference on Communications 2019, Shanghai, China, May 2019.

TPC member, IEEE Information Theory Workshop, ITW'18, Guangzhou, China, November 2018.

TPC member, IEEE International Symposium on Information Theory, ISIT'18, Vail, CO, June 2018.

TPC Member, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2017, Singapore, December 2017.

TPC member, IEEE International Symposium on Information Theory, ISIT'17, Aachen, Germany, June 2017.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2018, Kansas City, MO, May 2018.

TPC Member, *Communication Theory Symposium*, IEEE International Conference on Communications 2017, Paris, France, May 2017.

TPC Member, 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt'17, Paris, France, May 2017.

TPC Member, ACM MobiHoc, Chennai, India, March 2017.

TPC Member, *Communication Theory Symposium*, IEEE Global Telecommunications Conference 2016, Washington D.C., December 2016.

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.

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 Supervision

Current Doctoral Students

- Ahmed Zewail: Secrecy Guarantees in Emerging Networks (Defended Thesis: 04/2019, Graduation 08/2019)

- Abdelrahman Ibrahim: Data Storage and Energy Management in Emerging Networks (Defended Thesis: 04/2019, Graduation 08/2019)

- Shiyang Vicky Leng: Energy and Data Management in Energy-Sustainable Networks (Post-comprehensive: 12/2018)

- Omar Sleem: TBD (Start date: 08/2018)

MS Student

- Malak Shah: TBD (Start date: 11/2018)

Previous Postdoctoral Researchers

- Remi A. Chou (PhD, Georgia Tech 2015): 9/2015-8/2017 (Assistant Professor, Wichita State University)

- Shirin Saeedi Bidokthi (PhD, EPFL 2012): 4/2017-9/2017 (Research Assistant Professor, University of Pennsylvania)

- Ebrahim MolavianJazi (PhD, Notre Dame 2014): 8/2014-8/2016 (Motorola)

- Igor Stanojev (PhD, Politechnico di Milano and NJIT 2010): 11/2010-8/2012 (Assistant Professor, University of Wisconsin, Plattville)

- Satashu Goel (PhD, Carnegie Mellon 2009): 07/2009-10/2010 (Qualcomm)

Graduated Doctoral Students

- Mohamed Nafea **PhD, 12/2018**: Information Theoretic Security Guarantees Against More Capable Adversaries (Postdoc, Georgia Tech.)

- Burak Varan **PhD, 08/2017**: Energy and Signal Cooperation in Competitive Wireless Networks with Energy Harvesting (Amazon, Cupertino, CA)

- Basak Guler **PhD, 08/2017**: Interaction, Communication and Computation in Information and Social Networks (Postdoc, University of Southern California, Los Angeles, CA)

- 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, University of Newcastle, Callaghan, 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 (Research Faculty, Waisman Center, University of Wisconsin, Madison, WI)

- Kyounghwan 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 (Faculty, 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 (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 Long-Term 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).

Research Evaluation Activities

NSF Review Panelist- In CCF, NeTS, ECCS, SaTC, CCR, FMF, ITR programs in years 2001-2018.

Swedish Research Council Review Panelist- year 2016.

European Research Council (ERC) Advanced Grant Panelist- year 2017.

Number of promotion/tenure evaluations > 35

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

PhD Thesis Committee Membership

Completed

* Opponent: Rong Du, KTH Royal Institute of Technology, 2018, Advisor: C. Fischione
* External Committee Member: Amal Hyadi, KAUST, 2017, Advisor: M.S. Alouini
* Dissertation First Opponent: Zhijie Ren, TU Delft, 2016, Advisors: M. Gastpar and J. Weber
* Dissertation Referee: Shashank Vatedka, Indian Institute of Science, 2016, Advisor: N. Kashyap
* 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
* Dissertation Committee Member: Xiang Gao, Lehigh University, 2002, Advisor: T. Boult
* External examiner: L. G. F. Trichard, Univ. of Sydney, 2002, Advisors: J. Evans and I. Collings

In Progress

* Dissertation Committee Member: M. Hussien, Penn State, Advisor: V. Cadambe
* Dissertation Committee Member: B. Wang, Penn State, Advisor: J. Yang

Teaching

Penn State Student Rating of Teaching Effectiveness Scores are provided in parentheses next to the semester. Scale is 1-7 with 7 the best. Classes with numbers starting 1-4 are undergraduate, 5-6 are graduate level.

Penn State, EE 360: Communication Systems

Semesters taught: Spring 2003 (5.81), Spring 2008 (unable to locate) , Fall 2012 (5.71), Spring 2014 (4.77), Spring 2019 (5.93)

Enrollment: 32, 23, 43, 35, 46

Description: Junior level communications course emphasizing analog/digital modulation techniques. Revised towards more contemporary material in Spring 2019 by Prof. Yener.

Penn State, EE 497A: Fundamentals of Wireless Communications

Semesters taught: Spring 2004 (6.04), Spring 2005 (6.42), Spring 2007 (4.46). Spring 2010 (6.50)

Enrollment: 35, 17, 13, 11

Description: Senior level wireless communications. Introduced and developed by Prof. Yener.

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

Semesters taught: Spring 2016 (5.13).

Enrollment: 22

Description: Junior/senior level statistics elective, in house version.

Penn State, EE 560: Stochastic Processes and Estimation

Semesters taught: Fall 2006 (5.53), Fall 2010 (4.76), Fall 2018 (5.90)

Enrollment: 57, 39, 26

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 (unable to locate), Fall 2009 (6.00), Spring 2011 (6.00), Spring 2015 (6.57), Spring 2018 (6.71)

Enrollment: 15, 17, 12, 9, 10

Description: Graduate level information theory.

Penn State, EE 562: Detection and Estimation Theory

Semester taught: Fall 2002 (4.67)

Enrollment: 10

Description: Graduate level detection and estimation theory.

Penn State, EE 568: Digital Communications-I

Semesters taught: Fall 2003 (6.69), Fall 2004 (6.14), Fall 2005 (5.90)

Enrollment: 21, 18, 11

Description: Graduate level digital communications.

Penn State, EE 569: Digital Communications-II

Semesters taught: Spring 2012 (7.00)

Enrollment: 5

Description: Advanced graduate level digital communications.

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

Semester taught: Fall 2013 (6.80)

Enrollment: 5

Description: Graduate level (advanced); heavy research component. Developed by Prof. Yener.

Penn State, EE 597E: Multiuser Wireless Communications

Semester taught: Spring 2006 (6.71)

Enrollment: 17

Description: Graduate level (advanced); heavy research component. Developed by Prof. Yener.

Penn State, EE 597J: Spread Spectrum Communications

Semester taught: Spring 2002 (5.95)

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

Tenure and Promotion Committee of the School of EECS, Chair (2019-present)

Tenure and Promotion Committee of the School of EECS, Member (2018-present)

School of EECS Strategic Panning Committee, Member (2015-2018) (2018-present)

Advancement of Women in Engineering (AWE) Workshop Organizer, College of Engineering (2018)

EE Department Search Committee in Communications and Networking, Chair (2017-2018) (2018-2019)

College of Engineering Strategic Thrust Research Teams (STaRT), Leader for Cyber Environments (2017)

Graduate Council, Penn State, College of Engineering, Representative (alternate) (2017-2019)

College of Engineering Strategic Thrust Working Group on cyber-environments, Member (2016)

School of EECS Head Search Committee, Member (2015-2016)

EE Department Search Committee, Member (2015-2016)

EE Department Search Committee, Member (2014-2015)

Networked Systems Faculty Position Search Committee, Member (2013-2014)

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

School of EECS study committee, Member (2011)

EE Department SysAdmin Search Committee, Member (2011)

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

EE Department Head Search Committee, Member (2010-2011)

Sabbatical Review Committee for College of Engineering, Member then Chair (2009-2010)

EE Department AA Search Committee, Member (2009-2010)

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

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

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

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

Colloquium Organizing Committee, EE Department , Member (2003-2006)

Undergraduate Curriculum Committee, EE Department, Member (2002-2012)

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