CURRICULUM VITAE ET STUDIORUM

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Education

Ph.D. in Electrical Engineering, December 2001
The University of Texas at Dallas, U.S.A.
Thesis: *Location-Aware Protocols for Ad Hoc Networks*
Supervisor: Prof. Imrich Chlamtac

Ph.D. in Computer Science, May 1998
Università degli Studi di Milano, Italy
Thesis: *On the Broadcast and Clustering Problems in Peer-To-Peer Networks*
Supervisors: Prof. Alberto Bertoni and Danilo Bruschi

Bachelor of Science with distinction in Computer Science, December 1991
Università degli Studi di Pisa, Italy
Thesis: *Una Nuova Algebra di Alberi Causali e sue Applicazioni al CCS* (*A New Algebra of Causal Trees and Its Application to CCS*)
Supervisor: Prof. Pierpaolo Degano

Employment History

Professor (July 2021–Present)
Northeastern University, Department of Electrical and Computer Engineering.

Associate professor (July 2008–June 2021)
Northeastern University, Department of Electrical and Computer Engineering.

Assistant professor (January 2002–June 2008)
Northeastern University, Department of Electrical and Computer Engineering.

Assistant Professor (August 2000–December 2001)
The University of Texas at Dallas, Department of Computer Science.

Founding senior research member (May 1997–December 2001)
Center for Advanced Telecommunications Systems and Services (CATSS), The University of Texas at Dallas.

Visiting Scholar (March 1997–August 1997)
The Erik Jonsson School of Engineering and Computer Science, The University of Texas at Dallas.

Visiting Scholar (February 1996–February 1997)
The Advanced Communications and Networking Laboratory, Boston University.

Selected Honors and Awards

- Spring 2023: Named Distinguished Member of the IEEE Infocom 2023 Technical Program Committee.
- Fall 2021, 2022 and 2023: Listed among the Researchers in Stanford University's Top 2% Scientists in the world.
- May 2017: NU COE Best Research Team award, with professors Chowdhury, Melodia and Yeh.
- November 2016: Research on underwater networking featured on WIRED magazine.
- November 2015: *Distinguished scientist of the ACM*.
- 2009: *NU COE Outstanding Teacher award*.
- 2009: Editor of Year Award from the Elsevier's Ad Hoc Networks journal, for his outstanding research achievements throughout the year.
- 2009–2016: Listed in the Montclair Who's Who in North American Colleges and Universities.
- 2003–2016: Listed in the Academic Keys Who's Who in Engineering Education (WWEE).
- 2006–2016: Listed in the Marquis' Who's Who in America.
- April 2006: *Senior member of the IEEE*.

Research Interests

Current interests concern research and implementation aspects of mobile networks and wireless communications systems. Research about networked systems for the Internet of Things is of particular interest, from algorithmic (e.g., protocol design) and technology (e.g., wake-radio and energy harvesting) points of view. This includes terrestrial, aerial and underwater wireless networking encompassing a wide number of technologies, ranging from radio (including mmWave for NextG networks), acoustic, and optical (e.g., visible light communications), and their combination (multi-modal networking). Other interests include collaborative inter-networking, definition and performance evaluation of network protocols and theoretical and practical aspects of distributed algorithms.

In the past, I have contributed to research advancing Bluetooth networking, clustering and backbone formation for multi-hop mobile wireless networks, and geographic multi-point communications.

Publications

According to *Google Scholar*,[1] my peer-reviewed contributions that have appeared in journals, conference proceedings, books and on digital libraries have been cited more than *14950 times* (April 2024). Also, 51 papers of mine have been cited more than, or as many as 51 times, i.e., my *h-index* is 51.[2] Over 10 (25) publications have been cited over 200 (100) times each.

[1] Google Scholar (GS; http://scholar.google.com) is a freely accessible web search engine that indexes the full-text of scholarly literature and report their number of citations across an array of publishing formats and disciplines. The GS index includes most peer-reviewed online journals of the world's largest scientific publishers.

[2] The *h-index* is a parameter that quantifies the scientific productivity and impact of a scientist based on the number of citations that the scientist's publications have received. *A scientist has index h if h of her/his N papers have at least h citations each, and the other (N − h) papers have at most h citations each.* The *h*-index aims at balancing the number of publications and the number of citations per publication.

1. Books

[B3] S. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, editors. *Mobile Ad Hoc Networking: Cutting Edge Directions*. IEEE Series on Digital & Mobile Communication. IEEE Press and John Wiley & Sons, Inc., Piscataway, NJ and Hoboken, NJ, second edition, March 5 2013.

[B2] S. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, editors. *Mobile Ad Hoc Networking*. IEEE Press and John Wiley & Sons, Inc., Piscataway, NJ and New York, NY, April 2004.

[B1] E. Gregori, G. Anastasi, and S. Basagni, editors. *Advanced Lectures in Networking, Networking 2002 Tutorials*. Number 2497 in Lecture Notes in Computer Science. Springer–Verlag, Berlin Heidelberg, Germany, May 2002.

2. Book Chapters

[BC6] S. Basagni, M. Y. Naderi, C. Petrioli, and D. Spenza. Wireless sensor networks with energy harvesting. In S. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, editors, *Mobile Ad Hoc Networking: Cutting Edge Directions*, chapter 20, pages 703–736. John Wiley & Sons, Inc., Hoboken, NJ, March 5 2013.

[BC5] S. Basagni and M. A. Nanni. Location management in multi-hop wireless sensor networks. In Y. Xiao, H. Chen, and F. H. Li, editors, *Handbook on Sensor Networks*, chapter 29. World Scientific Publishing Co., Inc., Hackensack, NJ, August 2010.

[BC4] S. Basagni, A. Carosi, and C. Petrioli. Mobility in wireless sensor networks. In A. Boukerche, editor, *Algorithms and Protocols for Ad Hoc and Sensor Networks*, chapter 10, pages 267–305. John Wiley & Sons, Inc., Hoboken, NJ, 2008.

[BC3] S. Basagni, R. Bruno, and C. Petrioli. Scatternet formation in Bluetooth networks. In S. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, editors, *Mobile Ad Hoc Networking*, chapter 4, pages 117–137. IEEE Press and John Wiley & Sons, Inc., Piscataway, NJ and Hoboken, NJ, April 2004.

[BC2] S. Basagni. Remarks on ad hoc networking. In E. Gregori, G. Anastasi, and S. Basagni, editors, *Advanced Lectures on Networking, Networking 2002 Tutorials*, LNCS 2497. Springer–Verlag, Berlin Heidelberg, Germany, May 2002.

[BC1] A. D. Myers and S. Basagni. Wireless media access control. In I. Stojmenovic, editor, *Handbook of Wireless Networks and Mobile Computing*, Wiley Series on Parallel and Distributed Computing, chapter 6, pages 119–143. John Wiley & Sons, Inc., Hoboken, NJ, February 2002.

3. Reviewed Articles: Journals

[J37] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia. NeutRAN: An open RAN neutral host architecture for zero-touch RAN and spectrum sharing. *IEEE Transactions of Mobile Computing*, 23(5):5786–5798, May 2024.

[J36] M. Polese, L. Bonati, S. D'Oro, S. Basagni, and T. Melodia. ColO-RAN: Developing machine learning-based xApps for open RAN closed-loop control on programmable experimental platforms. *IEEE Transactions on Mobile Computing*, 22(10):5787–5800, October 1 2023.

[J35] M. Polese, L. Bonati, S. D'Oro, S. Basagni, and T. Melodia. Understanding O-RAN: Architecture, interfaces, algorithms, security, and research challenges. *IEEE Communications Surveys and Tutorials*, 25(2):1376–1411, Second Quarter 2023.

[J34] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia. OpenRAN Gym: AI/ML development, data collection, and testing for O-RAN on PAWR platforms. *Computer Networks*, 220:1–11, January 2023.

[J33] A. Lacava, V. Zottola, A. Bonaldo, F. Cuomo, and S. Basagni. Securing Bluetooth Low Energy networking: An overview of security procedures and threats. *Computer Networks*, 211:1–19, July 5 2022.

[J32] L. Bonati, S. D'Oro, M. Polese, S. Basagni, and T. Melodia. Intelligence and learning in O-RAN for data-driven NextG cellular networks. *IEEE Communications Magazine Series on Network Softwarization and Management, W. Cerroni, A. Galis, K. Shiomoto, M. F. Zhani, series editors*, 59(10):21–27, October 2021.

[J31] C. Greco, P. Pace, S. Basagni, and G. Fortino. Jamming detection at the edge of drone networks using Multi-layer Perceptrons and Decision Trees. *Applied Soft Computing*, 111:1–13, August 13 2021.

[J30] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia. Open, programmable, and virtualized 5G networks: State-of-the-art and the road ahead. *Computer Networks*, 182:1–28, 29 August 2020.

[J29] L. Bonati, S. D'Oro, L. Bertizzolo, E. Demirors, Z. Guan, S. Basagni, and T. Melodia. CellOS: Zero-touch softwarized open cellular networks. *Computer Networks*, 180:1–13, 23 June 2020.

[J28] G. Koutsandria, V. Di Valerio, D. Spenza, S. Basagni, and C. Petrioli. Wake-up radio-based data forwarding for green wireless networks. *Computer Communications. Special Issue on Machine Learning Approaches in IoT scenarios, G. Maselli, L. Galluccio, I. Grida Ben Yahia, and N. Limam, eds.*, 160:172–185, June 3 2020.

[J27] V. Di Valerio, F. Lo Presti, C. Petrioli, L. Picari, D. Spaccini, and S. Basagni. CARMA: Channel-aware reinforcement learning-based multi-path adaptive routing for underwater wireless sensor networks. *IEEE Journal on Selected Area in Communications. Special issue on Machine Learning in Wireless Communications, D. Gesbert, D. P. de Kerret, and M. van der Schaar, and D. Gunduz, C. Murthy, and D. Sidiropoulos, eds.*, 37(11):2634–2647, November 2019.

[J26] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. Clustering algorithms and validation indices for a wide mmWave spectrum. *Information. Special issue on Emerging Topics in Wireless Communications for Future Smart Cities, S. Djahel, C. Wu, Y. Hadjadj-Aoul, and C. Palazzi, eds.*, 10(9):1–17, September 19 2019.

[J25] A. V. Sheshashayee and S. Basagni. WiLE: Leader election in wireless networks. *Ad Hoc & Sensor Wireless Networks*, 44(1–2):1–23, June 2019.

[J24] S. Basagni, V. Di Valerio, P. Gjanci, and C. Petrioli. MARLIN-Q: Multi-modal communications for reliable and low-latency underwater data delivery. *Ad Hoc Networks*, (82):134–145, January 2019.

[J23] P. Gjanci, C. Petrioli, S. Basagni, C. A. Phillips, L. Bölöni, and D. Turgut. Path finding for maximum value of information in multi-modal underwater wireless sensor networks. *IEEE Transactions on Mobile Computing*, 17(2):404–418, February 1 2018.

[J22] M. Girolami, S. Basagni, F. Furfari, and S. Chessa. SIDEMAN: ServIce DiscovEry in Mobile sociAl Networks. *Ad Hoc & Sensor Wireless Networks*, 34(1):1–39, December 2016.

[J21] L. Chen, J. Warner, P. L. Yung, D. Zhou, W. Heinzelman, I. Demirkol, U. Muncuk, K. R. Chowdhury, and S. Basagni. Reach^2-mote: A range extending passive wake-up wireless sensor node. *ACM Transactions on Sensor Networks*, 11(4):64:1–64:33, December 2015.

[J20] S. Basagni, C. Petrioli, R. Petroccia, and D. Spaccini. CARP: A channel-aware routing protocol for underwater acoustic wireless networks. *Elsevier Ad Hoc Networks and Physical Communication, joint Special Issue on Advances in Underwater Communications and Networks, D. Pompili, T. Melodia, L. Yang, and C. Petrioli, eds.*, 34:92–104, November 27 2015.

[J19] D. Mishra, S. De, S. Jana, S. Basagni, K. R. Chowdhury, and W. Heinzelman. Smart RF energy harvesting communications: Challenges and opportunities. *IEEE Communications Magazine*, 53(4):70–78, April 2015.

[J18] C. Petrioli, M. Nati, P. Casari, M. Zorzi, and S. Basagni. ALBA-R: Load-balancing geographic routing around connectivity holes in wireless sensor networks. *IEEE Transactions on Parallel and Distributed Systems*, 24(3):529–539, March 2014.

[J17] S. Basagni, C. Petrioli, R. Petroccia, and M. Stojanovic. Optimized packet size selection in underwater WSN communications. *IEEE Journal of Oceanic Engineering*, 37(3):321–337, July 2012.

[J16] S. Basagni, A. Carosi, C. Petrioli, and C. A. Phillips. Coordinated and controlled mobility of multiple sinks for maximizing the lifetime of wireless sensor networks. *ACM/Springer Wireless Networks*, 17(3):759–778, April 2011.

[J15] R. Ghosh and S. Basagni. Mitigating the impact of node mobility on ad hoc clustering. *Wiley InterScience's Wireless Communications & Mobile Computing, WCMC, Special Issue on Resources and Mobility Management in Wireless Networks, L. Bononi and S. Nikoletseas, eds.*, 8(3):295–308, March 2008.

[J14] S. Basagni, C. Petrioli, and R. Petroccia. Efficiently reconfigurable backbones for wireless sensor networks. *Computer Communications Journal, Special Issue on Algorithmic and Theoretical Aspects of Wireless Ad Hoc and Sensor Networks, S. Misra, ed.*, 31(4):668–698, March 5 2008.

[J13] S. Basagni, A. Carosi, E. Melachrinoudis, C. Petrioli, and Z. M. Wang. Controlled sink mobility for prolonging wireless sensor networks lifetime. *ACM/Springer Wireless Networks*, 14(6):831–858, December 2008.

[J12] S. Basagni, A. Carosi, E. Melachrinoudis, C. Petrioli, and Z. M. Wang. Protocols and model for sink mobility in wireless sensor networks. *ACM Mobile Computing and Communication Review, MC^{2}R*, 10(4):28–30, October 2006.

[J11] S. Basagni, M. Mastrogiovanni, A. Panconesi, and C. Petrioli. Localized protocols for ad hoc clustering and backbone formation: A performance comparison. *IEEE Transactions on Parallel and Distributed Systems, Special Issue on Localized Communication and Topology Protocols for Ad Hoc Networks, S. Olariu, D. Simplot-Ryl, and I. Stojmenovic, eds.*, 17(4):292–306, April 2006.

[J10] S. Basagni, R. Bruno, G. Mambrini, and C. Petrioli. Comparative performance evaluation of scatternet formation protocols for networks of Bluetooth devices. *ACM/Kluwer Wireless Networks*, 10(2):197–213, March 2004.

[J9] C. Petrioli, S. Basagni, and I. Chlamtac. BlueMesh: Degree-constrained multihop scatternet formation for Bluetooth networks. *ACM/Kluwer Journal on Special Topics in Mobile Networking and Applications (MONET), Special Issue on Advances in Research of Wireless Personal Area Networking and Bluetooth Enabled Networks, G. Zaruba and P. Johansson, eds.*, 9:33–47, February 2004.

[J8] C. Petrioli, S. Basagni, and I. Chlamtac. Configuring BlueStars: Multihop scatternet formation for Bluetooth networks. *IEEE Transactions on Computers, Special Issue on Wireless Internet, Y.-B. Lin and Y.-C. Tseng, eds.*, 52(6):779–790, June 2003.

[J7] S. Basagni, I. Chlamtac, and V. R. Syrotiuk. Location aware, dependable multicast for mobile ad hoc networks. *Computer Networks*, 36(5/6):659–670, August 2001.

[J6] S. Basagni. Finding a maximal weighted independent set in wireless networks. *Telecommunication Systems, Special Issue on Mobile Computing and Wireless Networks, S. Olariu and I. Stojmenovic, eds.*, 18(1/3):155–168, September 2001.

[J5] I. Chlamtac, S. Gibbs, and S. Basagni. An overview of the University of Texas at Dallas' Center for Advanced Telecommunications Systems and Services (CATSS). *ACM/SIGMOBILE Mobile Computing and Communications Review*, 4(2):63–69, April 2000. Special Feature on Wireless Research Centers.

[J4] S. Basagni, D. Bruschi, and I. Chlamtac. A mobility transparent deterministic broadcast mechanism for ad hoc networks. *ACM/IEEE Transactions on Networking*, 7(6):799–807, December 1999.

[J3] S. Basagni and D. Bruschi. A logarithmic lower bound for time-spread multiple-access (TSMA) protocols. *ACM/Kluwer Wireless Networks*, 6(2):161–163, May 2000.

[J2] S. Basagni. A note on causal trees and their applications to CCS. *International Journal of Computer Mathematics*, 71:137–159, April 1999.

[J1] S. Basagni, D. Bruschi, and F. Ravasio. On the difficulty of finding paths of length k in digraphs. *Theoretical Informatics and Applications*, 31(5):429–435, September 1997.

4. Reviewed Articles: Conferences, Symposia and Workshops

[C116] A. V. Sheshashayee, M. Bordin, P. Brach del Prever, D. Villa, H. Cheng, C. Petrioli, T. Melodia, and S. Basagni. Experimental evaluation of the performance of UAV-assisted data collection for wake-up radio-enabled wireless networks. In *Proceedings of IEEE VTC 2024 Spring*, pages 1–6, Singapore, June 24–27 2024.

[C115] D. Villa, I. Khan, F. Kaltenberger, N. Hedberg, R. Soares da Silva, A. Kelkar, C. Dick, S. Basagni, J. M. Jornet, T. Melodia, M. Polese, and D. Koutsonikolas. An open, programmable, multi-vendor 5G O-RAN testbed with NVIDIA ARC and OpenAirInterface. In *Proceedings of IEEE NG-OPERA 2024*, pages 1–6, Vancouver, BC, Canada, May 20 2024.

[C114] L. Iezzi, C. Petrioli, and S. Basagni. An adaptive extended Kalman filter for state and parameter estimation in AUV localization. In *Proceedings of IEEE ICC 2023*, pages 1–7, Rome, Italy, May 28–June 1 2023.

[C113] S. Falleni, T. Melodia, and S. Basagni. A reservation-based adaptive MAC protocol for OFDM physical layers in underwater networks. In *Proceedings of ICNC 2023*, pages 640–645, Honolulu, HI, February 20–22 2023.

[C112] D. Villa, M. Tehrani-Moayyed, P. Johari, S. Basagni, and T. Melodia. CaST: A toolchain for creating and characterizing realistic wireless network emulation scenarios. In *Proceedings of ACM WiNTECH 2022*, pages 45–52, Sydney, Australia, October 17 2022.

[C111] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia. Intelligent closed-loop RAN control with xApps in OpenRAN Gym. In *Proceedings of European Wireless 2022*, pages 1–6, Dresden, Germany, September 19–21 2022.

[C110] A. V. Sheshashayee, C. Petrioli, and S. Basagni. On the effectiveness of semantic addressing for wake-up radio-enabled wireless sensor networks. In *Proceedings of IEEE PIMRC 2022*, pages 1–6, Virtual Conference, September 12–15 2022.

[C109] D. Unal, S. Falleni, E. Demirors, K. Enhos, S. Basagni, and T. Melodia. Software-defined underwater acoustic networking platform for underwater vehicles. In *Proceedings of IEEE ICC 2022*, pages 2531–2536, Seoul, South Korea, May 16–20 2022.

[C108] L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia. OpenRAN Gym: An open toolbox for data collection and experimentation with AI in O-RAN. In *Proceedings of the Workshop on Open RAN Architecture for 5G Evolution and 6G at IEEE WCNC 2022*, pages 1–6, Austin, TX, April 10 2022.

[C107] A. V. Sheshashayee, J. Buczek, C. Petrioli, and S. Basagni. Experimental evaluation of wake-up radio ranges for UAV-assisted mobile data collection. In *Proceedings of IEEE WCNC 2022*, pages 1–6, Austin, TX, April 10–13 2022.

[C106] L. Bonati, P. Johari, M. Polese, S. D'Oro, S. Mohanti, M. Tehrani-Moayyed, D. Villa, S. Shrivastava, C. Tassie, K. Yoder, A. Bagga, P. Patel, V. Petkov, M. Seltzer, F. Restuccia, M. Gosain, K. R. Chowdhury, S. Basagni, and T. Melodia. Colosseum: Large-scale wireless experimentation through hardware-in-the-loop network emulation. In *Proceedings of IEEE DySPAN 2021*, pages 1–9, Virtual Conference, December 13–15 2021.

[C105] B. Casasole, L. Bonati, S. D'Oro, S. Basagni, A. Capone, and T. Melodia. QCell: Self-optimization of softwarized 5G networks through deep Q-learning. In *Proceedings of IEEE Globecom 2021*, pages 1–6, Madrid, Spain, December 7–11 2021.

[C104] J. Buczek, L. Bertizzolo, S. Basagni, and T. Melodia. *What is a wireless UAV?* A design blueprint for 6G flying wireless nodes. In *Proceedings of ACM WiNTECH 2021*, pages 1–7, New Orleans, LA, January 31–February 4 2022.

[C103] S. Falleni, D. Saha, I. Haque, T. Melodia, and S. Basagni. Development and testing of an OFDM physical layer for the DESERT simulator. In *Proceedings of MTS/IEEE OCEANS 2021*, pages 1–8, Virtual Conference, September 20–23 2021.

[C102] I. Tallini, L. Iezzi, P. Gjanci, C. Petrioli, and S. Basagni. Localizing autonomous underwater vehicles: Experimental evaluation of a long baseline method. In *Proceedings of IEEE WCNEE 2021*, pages 443–450, Virtual Conference, July 16 2021. **Best Paper award runner up**.

[C101] L. Bonati, S. D'Oro, S. Basagni, and T. Melodia. SCOPE: An open and softwarized prototyping platform for NextG systems. In *Proceedings of ACM MobiSys 2021*, pages 1–12, Mars, Solar System, Milky Way, June 24–July 2 2021.

[C100] M. Tehrani Moayyed, L. Bonati, P. Johari, T. Melodia, and S. Basagni. Creating RF scenarios for large-scale, real-time wireless channel emulators. In *Proceedings of IEEE MedComNet 2021*, pages 1–8, Virtual Conference, June 15–17 2021.

[C99] L. Ghiro, F. Restuccia, S. D'Oro, S. Basagni, T. Melodia, L. Maccari, and R. Lo Cigno. A Blockchain definition to clarify its role for the Internet of Things. In *Proceedings of IEEE MedComNet 2021*, pages 1–8, Virtual Conference, June 15–17 2021.

[C98] L. Bonati, S. D'Oro, F. Restuccia, S. Basagni, and T. Melodia. *SteaLTE*: Private 5G Cellular Connectivity as a Service with full-stack wireless steganography. In *Proceedings of IEEE Infocom 2021* (acceptance rate: 19.9%), pages 1–9, Virtual Conference, May 10–13 2021.

[C97] S. Falleni, D. Unal, A. Neerman, K. Enhos, E. Demirors, S. Basagni, and T. Melodia. Design, development, and testing of a smart buoy for underwater testbeds in shallow waters. In *Proceedings of IEEE/MTS Global OCEANS 2020*, pages 1–7, Singapore–U.S. Gulf Coast, October 5–14 2020.

[C96] M. Tehrani Moayyed, F. Restuccia, and S. Basagni. Comparative Performance Evaluation of mmWave 5G NR and LTE in a Campus Scenario. In *Proceedings of IEEE VTC 2020 Fall*, pages 1–5, Victoria, BC, Canada, October 4–7 2020.

[C95] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. Outdoor mmWave channel propagation models using clustering algorithms. In *Proceedings of IEEE ICNC 2020*, pages 1–7, Kona, Big Island, HI, February 17–20 2020.

[C94] S. Basagni, G. Koutsandria, and C. Petrioli. Enabling the Mobile IoT: Wake-up Unmanned Aerial Systems for Long-lived Data Collection. In *Proceedings of IEEE MASS 2019*, Monterey, CA, November 4–7 2019.

[C93] A. V. Sheshashayee and S. Basagni. Multi-hop wake-up radio relaying for the collection tree protocol. In *Proceedings of IEEE VTC 2019 Fall*, pages 1–6, Honolulu, HI, September 22–25 2019.

[C92] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. Clustering-based mmWave channel propagation models for outdoor urban scenarios. In *Proceedings of IEEE EuCNC 2019*, pages 1–2, Valencia, Spain, June 18–21 2019.

[C91] M. Tehrani Moayyed, B. Antonescu, and S. Basagni. Clustering validation for mmWave multipath components in outdoor transmissions. In *Proceedings of Wireless Days 2019*, pages 1–8, Manchester, U.K., April 24–26 2019.

[C90] S. Basagni, F. Ceccarelli, C. Petrioli, N. Raman, and A. V. Sheshashayee. Wake-up radio ranges: A performance study. In *Proceedings of IEEE WCNC 2019*, pages 1–5, Marrakech, Morocco, April 15–19 2019.

[C89] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. Clustering algorithms and validation indices for mmWave radio multipath propagation. In *Proceedings of IEEE WTS 2019*, pages 1–7, New York City, NY, April 9–12 2019.

[C88] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. Diffuse scattering models for mmWave V2X communications in urban scenarios. In *Proceedings of ICNC 2019*, pages 923–929, Honolulu, HI, February 18–21 2019.

[C87] S. Basagni, V. Di Valerio, G. Koutsandria, and C. Petrioli. On the impact of local computation over routing performance in green wireless networks. In *Proceedings of IEEE WoWMoM 2018*, pages 1–9, Chania, Greece, October 12–15 2018.

[C86] E. Demirors, J. Shi, A. Duong, N. Dave, R. Guida, B. Herrera, F. Pop, G. Chen, C. Cassella, S. Tadayon, M. Rinaldi, S. Basagni, M. Stojanovic, and T. Melodia. The SEANet project: Toward a programmable internet of underwater things. In *Proceedings of IEEE UComms 2018*, pages 1–5, Lerici, Italy, August 28–30 2018.

[C85] S. Basagni, G. Koutsandria, and C. Petrioli. A comparative performance evaluation of wake-up radio-based data forwarding for green wireless networks. In *Proceedings of ICCCN 2018*, pages 1–9, Hangzhou, China, July 30–August 2 2018.

[C84] S. Basagni, V. Di Valerio, P. Gjanci, and C. Petrioli. Harnessing HyDRO: Harvesting-aware Data ROuting for underwater wireless sensor networks. In *Proceedings of ACM MobiHoc 2018* (acceptance rate: 16.5%), pages 1–10, Los Angeles, CA, June 26–29 2018.

[C83] S. Basagni, V. Di Valerio, G. Koutsandria, C. Petrioli, and D. Spenza. WHARP: A wake-up radio and harvesting-based forwarding strategy for green wireless networks. In *Proceedings of IEEE MASS 2017*, pages 1–9, Orlando, FL, October 24–27 2017.

[C82] B. Antonescu, M. Tehrani Moayyed, and S. Basagni. mmWave channel propagation modeling for V2X communication systems. In *Proceedings of IEEE PIMRC WVCM 2017*, pages 1–6, Montreal, Quebec, Canada, October 8–13 2017.

[C81] S. Basagni, V. Di Valerio, G. Koutsandria, and C. Petrioli. Wake-up radio-enabled routing for green wireless sensor networks. In *Proceedings of IEEE VTC 2017 Fall*, pages 1–6, Toronto, Ontario, CA, September 24–27 2017.

[C80] S. Basagni, V. Di Valerio, P. Gjanci, and C. Petrioli. Finding MARLIN: Exploiting multi-modal communications for reliable and low-latency underwater networking. In *Proceedings of IEEE Infocom 2017*, pages 1–9, Atlanta, GA, May 1–4 2017.

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[C78] R. G. Cid-Fuentes, M. Y. Naderi, S. Basagni, K. R. Chowdhury, A. Cabellos-Aparicio, and E. Alarcon. An all-digital receiver for low power, low bit-rate applications using simultaneous wireless information and power transmission. In *Proceedings of IEEE ISCAS 2016*, Montreal, Canada, May 22–26 2016.

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5. Refereed Demonstrations

[D4] E. Moro, M. Polese, I. Filippini, S. Basagni, A. Capone, and T. Melodia. IABEST: An integrated access and backhaul 5G testbed for large-scale experimentation. In *Proceedings of ACM MobiCom 2022*, pages 772–774, Sydney, Australia, October 17–21 2022.

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6. Journal Editorials

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Creative Activity: Selected Keynotes, Lectures and Invited Talks

Since I completed my Ph.D. I have delivered over six dozen keynote speeches, invited talks and lectures, including, most recently:

1. *Revolutionizing IoT: The Synergy of Wake-Up Radio Technologies and Energy Harvesting in Green Wireless Networks*. Talk to the San Francisco Chapter of the IEEE ComSoc. Mills College at Northeastern University. April 2, 2024.

2. *The Internet of Everything, Everywhere: Methods and Technologies for Heterogeneous Device Internetworking with an Emphasis on Underwater Networks*. A 18 hour course for the M.S. students of the Telecommunication Engineering department. Università di Pavia, Pavia, PV, Italy. May 17–26, 2023.

3. *Understanding O-RAN: A Tutorial on Architecture, Interfaces, Algorithms, Security, and Research*. Half-day Tutorial. IEEE Globecom 2022. Rio De Janeiro, Brazil. December 8, 2022.

4. *Understanding O-RAN: A Tutorial on Architecture, Interfaces, Algorithms, Security, and Research Challenges*. Half-day Tutorial. IEEE NetSoft 2022. Milan, Italy. July 1, 2022.

5. *Colosseum: The World's Largest Wireless Network Emulator*. Half-day Tutorial. ACM MobiCom 2021. New Orleans, LA. March 28, 2022.

6. *An Intro to the Intelligent Use of Wake-up Radio Technology for the IoT*. Invited talk. Pathways to STEM. Northeastern University. (Virtual.) Boston. October 5 2021.

7. *Underwater Networking: Challenges and Smart Solutions*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.). (Virtual.) Roma, Italy. May 28 2021.

8. *An Intro to the Intelligent Use of Wake-up Radio Technology for the IoT*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.). (Virtual.) Roma, Italy. May 21 2021.

9. *Testing Wireless Solutions at Scale. Colosseum as a Case Study*. Invited talk. MathWorks-Northeastern Symposium 2021. (Virtual.) February 23, 2021.

10. *Learning Green Routes: It Pays to be Smart (... but not too Smart!)*. Invited IEEE Communication Society lecture. Santa Clara University, CA. March 3, 2020.

11. *Wireless Research at the Institute for the Wireless Internet of Things*. Invited talk. Santa Clara University, CA. March 3, 2020.

12. *Wireless Research at the Institute for the Wireless Internet of Things*. Invited talk. Fifty Year of ALOHA. Santa Clara, CA. January 24, 2020.

13. *The Internet of Underwater Things: From Design to Experimentation*. Half-day Tutorial. IEEE CCNC 2020. Las Vegas, NV. January 10, 2020.

14. *Learning Green Routes: It Pays to be Smart (... but not too Smart!)*. Invited talk. Lipari School "Can a network learn? Machine Learning methodologies and applications for next generation networking," Lipari, ME, Italy. July 12, 2019.

15. *The Internet of Everything, Everywhere: Methods and Technologies for Heterogeneous Device Internetworking with an Emphasis on Underwater Networks*. A 12 hour course for the Ph.D. students of the Computer Engineering department. Università della Calabria (Computer Engineering Dept.), Rende, CS, Italy. May 13–17 2019.

16. *Energy Harvesting-based Strategies for Long-lived Green Wireless Sensing*. Invited talk. Università di Bologna, Bologna, Italy. July 20, 2018.

17. *Energy Harvesting-based Strategies for Long-lived Green Wireless Sensing*. Invited talk. Università della Calabria, Rende, Italy. July 16, 2018.

18. *IoT 360: From Skies to Deep Seas*. Panel talk. ESOF 2018, Toulouse, France. July 10, 2018.

19. *Energy Harvesting-based Strategies for Long-lived Green Wireless Sensing*. Invited talk. Politecnico di Torino. Torino, Italy. July 6, 2018.

20. *Energy Harvesting-based Strategies for Long-lived Green Wireless Sensing*. Keynote speech. IEEE WCNEE 2018. Honolulu, Hawaii. April 16, 2018.

21. *Smart Usage of Wake-up Radio and Energy Harvesting for Long Lasting IoT Systems*. Invited talk. The University of Kentucky (Computer Science Dept.), Lexington, KY. October 20 2017.

22. *Wake-up Radio, Energy Harvesting and Multi-modality! Oh My! (A Few Tricks for Long-lived IoT.)* Invited talk. Temple University (Computer Science Dept.), Philadelphia, PA. September 29 2017.

23. *The Internet of Everything, Everywhere*. A 20 hour course for the Ph.D. students of the Computer Science department. Università di Pisa (Computer Science Dept.), Pisa, Italy. June 26–July 7 2017.

24. *Smart Usage of Wake-up Radio and Energy Harvesting for Long Lasting IoT Systems*. Invited talk. Università di Pisa (Information Engineering Dept.), Pisa, Italy. July 5 2017.

25. *Smart Usage of Wake-up Radio and Energy Harvesting for Long Lasting IoT Systems*. Keynote speech. LANMAN 2017. Osaka, Japan. June 12, 2017.

26. *Wake-up Radio, Energy Harvesting and Multi-modality! Oh My! (A Few Tricks for Long-lived IoT.)* Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 16 2017.

27. *Wake-up Radio, Energy Harvesting and Multi-modality! Oh My! (Very Long-lived Wireless Sensing Systems for the IoT.)* Invited talk. Nokia–IE, Dublin, Ireland. May 11 2017.

28. *RIP, OSPF and BGP: Internet Routing Yesterday and Today*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. April 12 2017.

29. *Networking: Delays, Losses, and Their Impact on Network Performance*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. March 1 2017.

30. *Beyond Duty Cycling: How Wake-up Radio Technology and Semantic Addressing Finally Enable Very Long-lived Wireless Sensing Systems*. Keynote speech. INW 2017. Falcade, Italy. January 11, 2017.

31. *Multi-modal Communication and its Implications on the Performance of Underwater Wireless Sensor Networks*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. June 21 2016.

32. *Beyond Duty Cycling: How Wake-up Radio Technology and Semantic Addressing Finally Enable Very Long-lived Wireless Sensing Systems*. Keynote speech. IFIP Wireless Days 2016. Toulouse, France. March 23, 2016.

33. *CTP-WUR: The Collection Tree Protocol in Wake-up Radio WSNs for Critical Applications*. Invited talk. IEEE ICNC 2016. Kauai, HI. February 18, 2016.

34. *Beyond Duty Cycling: How Wake-up Radio Technology and Semantic Addressing Finally Enable Very Long-lived Wireless Sensing Systems*. Invited talk. Università di Pisa, Pisa, Italy. July 23, 2015.

35. *Building the NU MONET: Lesson Learned*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. July 7 2015.

36. *Beyond Duty Cycling: How Wake-up Radio Technology and Semantic Addressing Finally Enable Very Long-lived Wireless Sensing Systems*. Invited talk. Politecnico di Milano, Milano, Italy. July 3, 2015.

37. *Beyond Duty Cycling: How Wake-up Radio Technology and Semantic Addressing Finally Enable Very Long-lived Wireless Sensing Systems*. Invited talk. KTH Royal Institute of Technologym Stockholm, Sweden. May 13, 2015.

38. *CARP: Channel-aware Routing for Underwater Wireless Sensor Networks*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. June 25 2014.

39. *Routing for the Internet of Things: Avoiding Holes and Other Stories*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 21 2014.

40. *Routing for the Internet of Things: Avoiding Holes and Other Stories*. Invited talk. Colorado School of Mines, Golden, CO. April 14 2014.

41. *Routing for the Internet of Things: Research Guidelines*. Invited talk. Meeting of the NU HKN. Northeastern University, Boston, MA. March 10 2014.

42. *Wireless Sensor Networks, a Primer*. Invited talk. Meeting of the NU IEEE. Northeastern University, Boston, MA. February 11 2014.

43. *Routing for the Internet of Things: Avoiding Holes and Other Stories*. Invited talk. Università di Roma "La Sapienza," (Telecommunication Engineering Dept.), Roma, Italy. July 23 2013.

44. *Vehicular Ad Hoc Networks: Technologies and Applications*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 24 2013.

45. *Routing for the Internet of Things: Avoiding Holes and Other Stories*. Invited talk. Consiglio Nazionale delle Ricerche (CNR), Pisa, Italy. May 20 2013.

46. *Wireless LAN: WiFi and their Close Relatives*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 17 2013.

47. *Finding Paths for AUV in Underwater Wireless Sensor Networks*. Invited talk. Sandia National Laboratories, Albuquerque, NM. March 6 2013.

48. *Can Mobility Improve the Performance of Wireless Sensor Networks?* Invited talk. University of Central Florida, Orlando, FL. February 28 2013.

49. *Modeling Sink Mobility in Wireless Sensor Networks*. Invited talk. Indian Institute of Technology, New Delhi, India. January 7 2013.

50. *ALBA-R vs. Rotational Sweep: A Performance Comparison*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. December 20 2012.

51. *Research on Networking at Northeastern University*. Invited talk. Meeting of the NU IEEE. Northeastern University, Boston, MA. September 21 2012.

52. *Enumerating wireless sensor networks: Protocols*. Invited talk. Università di Milano, Milano, Italy. May 30 2012.

53. *Enumerating wireless sensor networks: Possibility Results*. Invited talk. Università di Milano, Milano, Italy. May 28 2012.

54. *VANET 2: Protocol Design and Standards*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 23 2012.

55. *VANET 1: Bringing Ad Hoc Networks to the Car*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 21 2012.

56. *Perspectives on Networking Research for Healthcare*. Invited talk. Plenary meeting of the EU project CHIRON, Amsterdam, The Netherlands. March 9 2012.

57. *Determining Routes Underwater*. Invited talk. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. February 27 2012.

58. *How to Design, Analyze and Test Protocols for Mobile Networks*. Cycle of five lectures. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. May 7–August 7 2011.

59. *Building Mobile Backbones*. Cycle of two lectures. Università di Roma "La Sapienza," (Computer Science Dept.), Roma, Italy. February 27–March 6 2011.

Sponsored Research

External grants

1. *Technology Innovation Institute Research and Development Agreement*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Francesco Restuccia, co-PI, Salvatore D'Oro, co-PI, Kaushik Chowdhury, co-PI. Technology Innovation Institute. Grant #: G00008491. December 1, 2023–November 30, 2025. $350,000. Effort: 20%.

2. *PAWR Project Office Renewal*. Mari Silbey, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI,Tommaso Melodia, co-PI, William Wallace, co-PI. National Science Foundation, CISE Directorate, CNS Division. October 1, 2022–September 30, 2025. $2,800,000. Effort: 20%.

3. *MRI: Development of X-Mili: An Open, Programmable Platform to Conquer the 5G and 6G Wireless Spectrum*. Dimitrios Koutsonikolas, PI, Stefano Basagni, co-PI, Josep Jornet, co-PI, Tommaso Melodia, co-PI. National Science Foundation, CISE Directorate, CNS Division. October 1, 2021–September 30, 2024. $2,077,596.00 + $623,278.00 (NU cost sharing). Effort: 15%.

4. *Spectrum Testing, Modeling and Emulation of V2X Communication Networks in Colosseum*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Pedram Johari, co-PI. Federal Highway Administration, U.S. Department of Transportation. August 2, 2021–August 1, 2022. $2,211,562. Effort: 15%.

5. *Using MATLAB to build RF scenarios for the Colosseum Network Emulator*. Stefano Basagni. The MathWorks, Inc. October 1, 2021–September 30, 2022. $35,000. Effort: 100%.

6. *Colosseum NRDZ: A Large-Scale Emulation Platform to Shape Future National Radio Dynamic Zones*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Abhimanyu Gosain, co-PI. National Science Foundation, CISE Directorate, CNS Division. September 1, 2020–August 31, 2022. $999,981. Effort: 33%.

7. *SII Planning: NASCE: A National Spectrum Center to Conquer, Program, and Protect the Wireless Spectrum*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Abhimanyu Gosain, co-PI, Josep M. Jornet, co-PI. National Science Foundation, MPS Directorate, Division of Astronomical Science (AST). August 15, 2020–July 31, 2021. $175,000.00. Effort: 25%.

8. *MathWorks Curriculum Development: Protocol Stack Design for the Internet of Things*. Stefano Basagni, PI. Elena Bernal Mor, co-PI. The MathWorks, Inc. January 1, 2020–December 31, 2021. $25,000. Effort: 50%.

9. *CCRI: Grand: Colosseum: Opening and Expanding the World's Largest Wireless Network Emulator to the Wireless Networking Community*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Abhimanyu Gosain, co-PI. National Science Foundation, CISE Directorate, CNS Division. September 1, 2019–August 31, 2024. $4,999,700.00. Effort: 25%.

10. *PROTECT: A Millimeter-wave Programmable Radio platfOrm and Tactical wirelEss Communication Testbed*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Abhimanyu Gosain, co-PI. Office of Naval Research DURIP. April 1, 2019–March 31, 2022. $295,000.00. Effort: 25%.

11. *MRI: SEANet: Development of a Software-Defined Networking Testbed for the Internet of Underwater Things*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Militsa Stojanovic, co-PI, Matteo Rinaldi, co-PI. National Science Foundation, CISE Directorate, CNS Division, Major Research Instrumentation program. October 1, 2017–September 30, 2021. $1,115,999.00 (includes 2 REU supplements) + $330,000 (NU cost sharing). Effort: 20%.

12. *Global Underwater Wireless Sensor Networking From Design and Modeling to In-field Testing*. Stefano Basagni, PI. Università di Roma "La Sapienza." April 1, 2017–August 1, 2017. €9,000. Effort: 100%.

13. *PAWR: Northeastern University Proposal to Establish The Platform for Advanced Wireless Research (PAWR) Program Office (PPO)*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Abhimanyu Gosain, co-PI. National Science Foundation, CISE Directorate, CNS Division. April 1, 2017–March 31, 2022. $2,400,000. Effort: 25%.

14. *Software-defined Infrastructure-less Wireless Networking With Distributed Control*. Tommaso Melodia, PI, Stefano Basagni, co-PI, Kaushik R. Chowdhury, co-PI, Miriam Leeser, co-PI. Office of Naval Research. December 1, 2016—August 31, 2018. $387,495. Effort: 25%.

15. *Sensing, Computation and Communication on the Fly: Connected UAS Mesh Networks*. Kaushik R. Chowdhury, PI, Stefano Basagni, co-PI, Hanumant Singh, co-PI, Miriam Leeser, co-PI. Office of Naval Research. December 1, 2016—August 31, 2018. $387,495. Effort: 25%.

16. *Cross Layer Approach to 5G: Models and Protocols*. Stefano Basagni, PI, Kaushik R. Chowdhury, co-PI. The MathWorks, Inc. May 1, 2016–August 31, 2019. $200,000. Effort: 50%.

17. *MRI: Development of the Northeastern University Marine Observatory NETwork (NU MONET)*. Stefano Basagni, PI, Yunsi Fei, co-PI, Millitsa Stojanovic, co-PI. National Science Foundation, CISE Directorate, CNS Division, Major Research Instrumentation program. September 1, 2017–August, 31 2018. $432,000 (includes 4 REU supplements) + $120,000 (NU cost sharing). Effort: 40%.

18. *GENI-SAVI Travel Grant for International Collaboration*. Stefano Basagni, PI. NSF GENI, June 1, 2016–July 31, 2016. $6,000. Effort: 100%.

19. *GENI Travel Grants for participation to GENI events in 2016*. Stefano Basagni, PI. NSF GENI, January 1, 2016–December 31, 2016. $5,000. Effort: 100%.

20. *MathWorks Micro-grant: Modeling mmWave Channels for 5G Communications*. Stefano Basagni, PI. The MathWorks, Inc., September 1, 2014–April 30, 2015. $20,000. Effort: 100%.

21. *PC3: Collaborative Research: GENIUS: Green Sensor Networks for Air Quality Support*. Kaushik R. Chowdhury, PI, Stefano Basagni, Co-PI. National Science Foundation, CISE Directorate, CNS Division. January 1, 2012—June 30, 2015. $211,219. Effort: 50%.

22. *MRI-R2: Development of a Second-Generation Applications-Driven Wireless Sensor Networking Instrument*. Guevara Noubir, PI, Stefano Basagni, co-PI, Peter Desnoyers, co-PI, Marsette Vona, co-PI. National Science Foundation, CISE Directorate, CNS Division, Major Research Instrumentation program. March 1, 2010–February 28, 2013. $499,355. Effort: 25%.

23. *Modeling Networks with Multiple Physical Interfaces—The Case for Multi-Radio Networks*. Stefano Basagni, PI, András Faragó (UT Dallas), co-PI. National Science Foundation, CISE Directorate, CNS Division, Theoretical Foundations Program. October 1, 2006–September 30, 2010. $350,000. Effort: 100%.

24. *Integer Linear Programming Models for Mobility in Wireless Networks*. Stefano Basagni, PI. National Science Foundation, CISE Directorate, CNS Division, Networking Technology and Systems–Wireless Networks Program. August 1, 2007–July 31, 2008. $97,160. Effort: 100%.

25. *Small Antennas for Angle of Arrival Determination and Accurate Localization*. Stefano Basagni, PI. National Science Foundation, Engineering Directorate, Electrical, Communications and Cyber System Division, Integrative, Hybrid & Complex Systems Program. September 1, 2007–August 31, 2008. $59,150. Effort: 100%.

Internal grants

1. *Northeastern University Internal Grants for Interdisciplinary Research: Tier 1 Award. Addressing Humanitarian and Security Issues using Spatial Optimization and Wireless Sensor Network Design*. Mehdi Behroozi, PI, Stefano Basagni, co-PI, Amy Farrell, co-PI, Ramiro Martinez, co-PI. Northeastern University. July 1, 2021–September 30, 2022. $50,000.00.

2. *Northeastern University PEAK awards. Enabling Long-lived Mobile Internet of Things with Wake-up Radios and Unmanned Aerial Systems*. Stefano Basagni, PI, Kevin P. Hines, co-PI. Northeastern University. January 1, 2020–April 30, 2020. $3,000.00.

3. *Early Research/Creative Endeavor Award: Using Mobile Applications for Controlling the Northeastern University Marine Observatory Network*. Stefano Basagni, PI, Andrew Fish, co-PI. Northeastern University. September 1, 2017–December 31, 2017. $3,000.

4. *Improving Localization in Wireless Ad Hoc Networks with Applications to Independent Assisted Living and Disaster Recovery*. Stefano Basagni, PI, Miriam Leeser, co-PI. Northeastern University, CDSP seed grant. January 1, 2006–December 31, 2006. $10,000.

5. *Robust Localization Protocols for Wireless Sensor Networks*. Stefano Basagni, PI. Northeastern University, RSRD (Provost grant). July 1, 2004–June 30, 2005. $8,000.

6. *Network and Pervasive Computing*. Fabrizio Lombardi, PI, Stefano Basagni, co-PI, Dimiter Avreski, co-PI, David Brady, co-PI, Y. B. Kim, co-PI, F. Kirchner, co-PI, Mitch Kokar, co-PI, Andrew McDonald, co-PI, F. J. Meyer, co-PI. Northeastern University. July 1, 2002–June 30 2003. $60,000.

Student Supervision

Supervision of post-doctoral researchers

1. M. Yashar Aval. *Development of the Northeastern University Marine Observatory NETwork—NU MONET*. 2015–2018. Current occupation: Lead Engineer at Bose Corporation, Bedford, MA.

2. Hovannes Kulhandjian. *Development of the Northeastern University Marine Observatory NETwork—NU MONET*. 2014–2015. Current occupation: Assistant professor of Electrical and Computer Engineering at California State University, Fresno, CA.

Supervision of graduate students

- Current Ph.D. students

1. Bogdan Antonescu. *Characterizing the mmWave Channel in Urban and Mobile Settings*. Expected graduation date: 2022.
2. Sara Falleni. *New Technologies for Wireless Underwater Networking*. Expected graduation date: 2023.
3. Miad Tehrani Moayyed. *Generating Realistic Wireless Scenarios: The Colosseum Experience*. Expected graduation date: Fall 2022.

- Graduated Ph.D. students

1. Abhimanyu Sheshashayee. *Wake-up Radio-enabled Wireless Networking: Measurements and Evaluation of Data Collection Techniques in Static and Mobile Scenarios*. Northeastern University. July 2022. Current occupation: Athleaders, Singapore.
2. Leonardo Bonati (with Prof. Melodia). *Softwarized 5G Networking: An Experimental Approach*. Northeastern University. July 2022. Current occupation: Research Scientist at Northeastern University, Boston, MA.
3. M. Yousof Naderi (with Prof. Chowdhury). *RF-powered Internet of Things*. Northeastern University. December 2015. Current occupation: Principal Research Scientist at Northeastern University, Boston, MA.
4. Maurizio A. Nanni. *Mobile Backbones for Single and Multi-radio Networks*. Northeastern University. December 2010. Current occupation: Principal Software Architect at Silicon Labs, Boston, MA.
5. Michele Battelli. *Localization and Location Management in Wireless Sensor Networks*. Northeastern University. February 2007. Current occupation: Chief Product Officer at Sensat, London, England, United Kingdom.
6. Luke Demoracski (with Prof. D. Avresky). *Fault-tolerant Routing for Wireless Multi-hop Networks: Protocol Design and Performance Analysis*. Northeastern University. October 2006. Current occupation: Patent attorney at Sunstein Law, Boston, MA.
7. Rituparna Ghosh. *Protocols for Hierarchical Organization in Ad Hoc Networks: Definitions, Performance Evaluation and Application to Wireless Sensor Networks*. Northeastern University. May 2006.

- M.S. students

  I have supervised over two dozens M.S. students who graduated with theses and projects. A selection of these students and their work is listed below.

1. Claudia Greco. *A Supervised Machine Learning-based Approach for Jamming Detection in Drone Networks*. Università della Calabria, Italy. July 2020.
2. Andrea Francesconi. *Design of a Multi-Carrier MAC protocol forUnderwater Acoustic Networking*. University of Bologna, Italy. April 2019.
3. Tyler Fenton. *Enabling Smart Cities: An Overview of the Long Range (LoRa) Technology*. Northeastern University. August 2017.
4. Mian Tang. *Software Mechanisms for Remote Control and Re-programming of Underwater Communication Devices*. Northeastern University. August 2016.
5. Guilherme Conacci. *Remote Control and Re-programming of Underwater Communication Devices*. Northeastern University. August 2016.

6. Yi Jing. *Performance Evaluation of Randomized Protocols for Coverage Problems of Wireless Sensor Networks*. Northeastern University. April 2016.
7. Ding Luo. *Path Planning for AUV in Underwater Wireless Sensor Networks*. Northeastern University. May 2015.
8. Scott Cooper. *Analyzing Information from Internet Movie Databases*. Northeastern University. December 2014.
9. Tuyatsetseg Badarch. *Performance Evaluation of Protocols for Emergency Networks*. Northeastern University. December 2013.
10. Mahmudul Chowdhury. *Broadcast in Wireless Sensor Networks*. Northeastern University. December 2012.
11. Mohamed Ahmed T. Elgalhud. *Wireless Backbone Protocols in Homogeneous and Heterogeneous Ad Hoc Networks: An NS3 implementation and simulations*. Northeastern University. December 2009.
12. Feng Ding. *The Broadcast Storm Problem in a Mobile Ad Hoc Network Implemented in ns-2*. Northeastern University. December 2009.
13. Harpreet Singh Gulati. *Implementing the Gallager Algorithm*. Northeastern University. May 2009.
14. Keith Bertolino. *FORCE: Forensic Recovery Carving and Extraction*. Northeastern University. Gordon Program. August 2009.
15. Abel O. Livingstone. *Inertial North Finder for Unattended Ground Sensors*. Northeastern University. Gordon Program. August 2009.
16. Murali C. Vipparla. *On a Simple Clustering and Network Formation Algorithm for Multi-hop Wireless Networks*. Northeastern University. April 2009.
17. Yuzhen Situ. *Quantitative Comparison of Two Models for Multi-hop Wireless Networks*. Northeastern University. April 2009.
18. Soheil Saadat. *Angle of Arrival for Localization in a Wireless Network*. Northeastern University. April 2009.
19. Bhavik Waghela. *Performance Comparison of Algorithms for Minimum Spanning Tree*. Northeastern University. December 2008.
20. Dhruv Patel. *Generating Connected Topologies for Simulating Wireless Sensor Networks*. Northeastern University. December 2008.
21. Craig Daniels. *First Responders Networking: A Survey*. Northeastern University. July 2008.
22. Adnan Rawumpala. *Implementing and Comparing Algorithms on Graphs*. Northeastern University. July 2008.
23. Kapil Pamnani. *Implementing and Comparing Sorting Algorithms.* Northeastern University. July 2008.
24. Patricia X. Chavez–Burbano, *A Location Management Protocol Based on Mobility-adaptive Clustering for Wireless Sensor Networks*. Northeastern University. August 2008.
25. Rajaa Khaled Alqudah. *On the Effects of Multiple Beacons on Localization for Wireless Sensor Networks*. Northeastern University. July 2007. Research published at a peer-reviewed conference [C43].
26. Huseyin Mutlu. *A Performance Evaluation and Comparison of Protocols for Topology Control over IEEE 802.15.4*. Northeastern University. August 2005.

27. Marco Elia. *Virtual Networks for Energy Saving (ViBES) in Wireless Sensor Networks*. Northeastern University. April 2004. Research published at a peer-reviewed conference [C28].
28. Kris Herrin. *Security in Large Ad Hoc Networks*. The University of Texas at Dallas. December 2001. Research published at a peer-reviewed conference [C20].
29. Muhammad Murshed Alam. *Mobile Multi-hop Networks: A Survey*. The University of Texas at Dallas. December 2000.
30. Rodeen Talebi, *Multicast in Ad Hoc Networks*. The University of Texas at Dallas. August 1999. Research published at peer-reviewed conferences [C15, C13].

Supervision of undergraduate students

I have supervised over three dozens undergraduate students who graduated with honor thesis, developed projects, co-authored papers and took research courses (e.g., EECE 4991) under my supervision. Many of these students have been supported by Research Experiences for Undergraduates (REU) supplements from the National Science Foundation and by the Northeastern University PEAK Experiences Awards. A selection of these students and their work is listed below.

1. Jimmy Cheung. *Unmanned Aerial Vehicle (UAV) design*. Northeastern University. Fall 2023. (EECE 4992: Directed Research course in Fall 2023.)
2. Thomas Michel. *Visual Analysis of Telecommunication Network Behavior*. Research Coop. Northeastern University. July 1–December 22, 2023. PEAK Summit Award: Spring 2024.
3. Lauren Hutchison. *A Visualization Tool for Open RAN Metrics*. Northeastern University. Spring and Summer 2023.
4. Michael Brodskiy. *Creating Datasets of Low-power IoT Devices for Analysis and Fingerprinting*. Northeastern University. Fall 2022; Spring 2023. (NU UPLIFT program.)
5. Aaron Ky-Riesenbach. *Upgrading Colosseum StackStorm Code to Serve User Requests*. Northeastern University. Fall 2022. (NSF REU.)
6. Hunter Brodie. *Continuous Integration of StackStorm Code into Colosseum*. Northeastern University. Summer 2022. (NSF REU.)
7. Jonah Levis. *Orchestrating Colosseum User Requests with StackStorm* and *Designing Data Reporting Pipelines for Open RAN Nodes*. Northeastern University. Summer and Fall 2022; Spring 2023. (NSF REU.)
8. Claire Cregin. *Protocols for Underwater Wireless Networks: Underwater ALOHA*. Northeastern University. Fall 2021. (NU UPLIFT program.)
9. Alexandros Kerwick. *Testing a New OFDM-based Physical Layer for the DESERT Simulator for Underwater Networks*. Northeastern University. Fall 2020–Summer 2021. (EECE 4991: Research course in Summer 2 2021.)
10. John J. Buczek. *Solutions for Network-enabled UAVs with High Bitrates*. Northeastern University. Spring 2020–Fall 2021. (EECE 4991: Research course. NSF REU. Research coop.) Research published at peer-reviewed conferences [C104, C107].
11. Alon Neerman. *Building a Smart Buoy for the SEANet Project*. Northeastern University. Fall 2019–Spring 2020. (EECE 4991: Research course.) Research published at a peer-reviewed conference [C97].
12. Kevin P. Hines. *Enabling Long-lived Mobile Internet of Things with Wake-up Radios and Unmanned Aerial Systems*. Northeastern University. Spring 2019–Spring 2020. (EECE 4991: Research course. NU PEAK award.)

13. Nithila Raman. *Determining Wake-up Radio Ranges*. Northeastern University. Fall 2018. Research published as a conference paper [C90].
14. Andrew Fish. *Design and Programming of a Remote iOS Controller and Gateway for Underwater Acoustic Network*. Northeastern University. Spring 2017–Spring 2018. (NU PEAK award. NSF REU.) Research published in the Northeastern's Undergraduate Engineering Research Journal *EMBARK*.
15. Joshua Berlin. *Building and Deploying Smart Buoys for Marine Observatories*. Northeastern University. Spring 2016–Spring 2018. (NSF REU.)
16. Geralyn Moore. *Energy Provisioning to the Smart Buoys of the NU MONET*. Northeastern University. Spring 2017–Spring 2018. (NSF REU.)
17. Rebecca Mendez. *Energy Harvesting for Smart Buoys of the NU MONET*. Northeastern University. Spring 2017–Spring 2018. (NSF REU.)
18. Colin Vincent. *Optimization of Resource Deployment for Underwater Networking*. Northeastern University. Fall 2017.
19. Nicholas Hughes. *Designing Energy Harvesting Systems for Maritime Devices*. Northeastern University. Spring 2016–Spring 2017.
20. Joshua Jameson. *The Generalized Towers of Hanoi Problem: A Survey*. Northeastern University. Spring 2017.
21. Andrew Tu. *Programming Acoustic Modems for Underwater Networking*. Northeastern University. Spring 2015–Spring 2017. (NSF REU. CUR poster. GENI SAVI international travel grant recipient. TEDx Northeastern U. speaker.) Research published in the Northeastern's Undergraduate Engineering Research Journal *EMBARK* and at a peer-reviewed conference [C79].
22. Brian Wilcox. *Design and Implementation of Wireless Connectivity for Surface Buoy*. Northeastern University. Spring 2016. (NSF REU.) Research published on the Northeastern's Undergraduate Engineering Research Journal *EMBARK*.
23. Mark German. *BeagleBone programming for Teledyne Benthos Acoustic Modems*. Northeastern University. Spring 2016. (NSF REU.) Research published in the Northeastern's Undergraduate Engineering Research Journal *EMBARK*.
24. Vlad Vandalovsky. *Building the NU MONET: MATLAB Programming*. Northeastern University. Spring 2016.
25. Dixon Jin. *Implementation and Comparing Sorting Algorithms in C++*. Northeastern University. Spring 2015.
26. Kshitij Lohani. *Research and implementation of mmWave technology for Mathworks MATLAB/Simulink*. Northeastern University. Summer 2014–Fall 2014.
27. Arnold Chang. *Design and Implementation of Wireless Sensor Network Algorithms in C++*. Northeastern University. Fall 2014.
28. Andrew Kaster. *Experimental Evaluation of a Wireless Sensing Platform*. Northeastern University. Spring 2014.
29. Justin Jo. *Acoustic Communications over the Air*. Northeastern University. Spring 2014.
30. Matthew McDonald. *New ns-3 Modules for Wireless Sensor Networks*. Northeastern University. Fall 2013.
31. Stephen Schmitt. *Enumerating Wireless Sensor Networks: Implementation in C++*. Northeastern University. Spring 2012.

32. Portia Stevens. *Comparing Sorting Algorithms via Simulations*. Northeastern University. Spring 2012.
33. Donald Straney. *Comparing Sorting Algorithms via Simulations*. Northeastern University. Spring 2010–Spring 2011.
34. James Kirk. *Algorithms for Enumerating Wireless Sensor Networks*. Northeastern University. Spring 2010.
35. James Edwards, III. *Medium Access Control for Multi-hop Wireless Sensor Networks*. Northeastern University. Spring 2009.
36. Corey Bevilacqua. *Random Topology and the Multi-radio Advantage*. Northeastern University. Fall 2008.
37. Katharine Toth. *Comparing Sorting Algorithms: C++ Implementation and Analysis*. Northeastern University. Fall 2008.
38. Vishal H. Sunak. *Programming Wireless Sensor Networks*. Fall 2005–Spring 2007.
39. Matthew Kowalski. *Monitoring Wireless Security Awareness in an Urban Setting*. Fall 2004–Fall 2006. Research published at a peer-reviewed conference [C35].
40. Keith Bertolino. *Monitoring Wireless Security Awareness in an Urban Setting*. Fall 2004–Spring 2006. Research published at a peer-reviewed conference [C35].
41. Michael Benson. *Comparing Routing Protocols for Wireless Sensor Networks*. Fall 2005–Spring 2006.
42. Michael Cartwright. *MAC Protocols for Wireless Sensor Networks: A Comparative Performance Evaluation*. Spring 2005.
43. Dino Buro. *Mobile Backbones in Ad Hoc Networks*. Spring 2004.
44. Abdul Ismail. *A Review of the Bluetooth Wireless Technology*. Winter 2003.
45. Craig Young. *The C++ Standard Template Library*. Fall 2002–Winter 2003.

Teaching

Courses taught 2002–2020. Northeastern University.
Since joining Northeastern University in 2002 I have taught over 50 courses to over 2000 students.

- Undergraduate courses

1. EECE 2540. Fundamentals of Networks. Spring 2023. Enrollment: 65.
2. EECE 2540. Fundamentals of Networks. Summer 1 2022. Enrollment: 16.
3. EECE 2540. Fundamentals of Networks. Spring 2022. Enrollment: 53.
4. EECE 2540. Fundamentals of Networks. Fall 2021. Enrollment: 20.
5. EECE 2540. Fundamentals of Networks. Spring 2021. Enrollment: 64.
6. EECE 2540. Fundamentals of Networks. Fall 2020. Enrollment: 44.
7. EECE 2540. Fundamentals of Networks. Summer 1 2020. Enrollment: 20.
8. EECE 2540. Fundamentals of Networks. Spring 2020. Enrollment: 65.
9. EECE 2540. Fundamentals of Networks. Fall 2019. Enrollment: 48.
10. EECE 2540. Fundamentals of Networks. Spring 2019. Enrollment: 51.

11. EECE 2540. Fundamentals of Networks. Fall 2018. Enrollment: 69.
12. EECE 2540. Fundamentals of Networks. Fall 2017. Enrollment: 19.
13. EECE 2540. Fundamentals of Networks. Fall 2016. Enrollment: 49.
14. EECE 2540. Fundamentals of Networks. Fall 2015. Enrollment: 61. **Newly re-developed undergraduate course**.
15. EECE 4628. Computer and Telecommunication Networks. Fall 2014. Enrollment: 50.
16. EECE 4628/9. Computer and Telecommunication Networks and lab. Fall 2013. Enrollment: 41.
17. EECE 4628/9. Computer and Telecommunication Networks and lab. Fall 2012. Enrollment: 11.
18. EECE 4520. Software Engineering. Spring 2012. Enrollment: 30. **Newly re-developed undergraduate course**.
19. EECE 4628/9. Computer and Telecommunication Networks and lab. Fall 2011. Enrollment: 26.
20. GE 1111. High Tech Tools and Toys. Spring 2011. Enrollment: 28.
21. EECE 4628/9. Computer and Telecommunication Networks and lab. Fall 2010. Enrollment: 21.
22. ECE U 326. Optimization Methods. Spring 2009. Enrollment 30.
23. ECE U 628/9. Computer Networks and lab. Spring 2009. Enrollment: 24.
24. ECE U 628/9. Computer Networks and lab. Fall 2008. Enrollment: 18.
25. ECE U 628/9. Computer Networks and lab. Spring 2008. Enrollment: 38.
26. ECE U 326. Optimization Methods. Spring 2008. Enrollment: 21.
27. ECE U 628/9. Computer Networks and lab. Spring 2007. Enrollment: 33.
28. ECE U 628/9. Computer Networks and lab. Fall 2005. Enrollment: 33.
29. ECE U 628/9. Computer Networks and lab. Spring 2005. Enrollment: 44.
30. ECE 1320. Optimization Methods. Winter 2003. Enrollment: 31.
31. ECE 1320. Optimization Methods. Fall 2002. Enrollment: 34.
32. ECE 1320. Optimization Methods. Winter 2002. Enrollment: 22.

- Graduate courses

1. EECE 7374. Fundamentals of Computer Networks. Spring 2023. Enrollment: 23.
2. EECE 7374. Fundamentals of Computer Networks. Spring 2020. Enrollment: 53.
3. EECE 7374. Fundamentals of Computer Networks. Spring 2019. Enrollment: 31.
4. EECE 7374. Fundamentals of Computer Networks. Spring 2018. Enrollment: 45.
5. EECE 7205. Fundamentals of Computer Engineering. Fall 2017. Enrollment: 33.
6. EECE 7205. Fundamentals of Computer Engineering. Fall 2016. Enrollment: 44.
7. EECE 7205. Fundamentals of Computer Engineering. Fall 2015. Enrollment: 48.
8. EECE 7374. Fundamentals of Computer Networks. Spring 2015. Enrollment: 46.
9. EECE 7205. Fundamentals of Computer Engineering. Fall 2014. Enrollment: 61.
10. EECE 7374. Fundamentals of Computer Networks. Spring 2014. Enrollment: 56.
11. EECE 7205. Fundamentals of Computer Engineering. Fall 2013. Enrollment: 62.
12. EECE 7366. Special Topics in CE: Fundamentals of Computer Networks. Fall 2012. Enrollment: 27. **Newly developed graduate course**.

13. EECE 7205. Fundamentals of Computer Engineering. Fall 2012. Enrollment: 72.
14. EECE 7366. Special Topics in CE: Fundamentals of Software Construction. Fall 2011. Enrollment: 20. **Newly developed graduate course**.
15. EECE 7205. Fundamentals of Computer Engineering. Fall 2011. Enrollment: 62.
16. EECE 7205. Fundamentals of Computer Engineering. Fall 2010. Enrollment: 49.
17. EECE 7205. Fundamentals of Computer Engineering. Fall 2009. Enrollment: 56.
18. ECE G 205. Fundamentals of Computer Engineering. Fall 2008. Enrollment 54.
19. ECE G 205. Fundamentals of Computer Engineering. Fall 2007. Enrollment 63.
20. ECE G 205. Fundamentals of Computer Engineering. Fall 2006. Enrollment: 27.
21. ECE G 205. Fundamentals of Computer Engineering. Fall 2005. Enrollment: 38.
22. ECE G 205. Fundamentals of Computer Engineering. Fall 2004. Enrollment: 36.
23. ECE G 364. Mobile and Wireless Networking. Spring 2004. Enrollment: 18. (Taught also via Network Northeastern.)
24. ECE G 205. Fundamentals of Computer Engineering. Fall 2003. Enrollment: 28. **Newly developed graduate course**.
25. ECE 3656. Mobile and Wireless Networking. Winter 2003. Enrollment: 19. (Taught also via Network Northeastern.)
26. ECE 3656. Mobile and Wireless Networking. Spring 2002. Enrollment: 14. **Newly developed graduate course**.

- **Courses taught 2000-2001**. The University of Texas at Dallas.

  1. UTD CS 6V81. Bluetooth and Ad Hoc Networking. Fall 2001. **Newly developed graduate course**.
  2. UTD CS 2305. Discrete Mathematics 1. Fall 2001. (Undergraduate course for freshmen.)
  3. UTD CS 4349. Advanced Data Structures and Algorithms. Spring 2001. (Undergraduate course for seniors.)
  4. UTD CS 4349. Advanced Data Structures and Algorithms. Fall 2000. (Undergraduate course for seniors.)

Course evaluation scores (last five years: Fall 2016–Fall 2021)
The following tables lists course Teacher Rating And Course Evaluation (TRACE) scores for courses taught in the last five years. Scores refers to the mean of two TRACE evaluation questions: "I learned a lot in this course" (Learning), and "What is your overall rating of this instructor's teaching effectiveness" (Instructor). All scores are out of a maximum of 5.

Service and Professional Development

1. **Service to the Institution**

   - **Service to the Department of Electrical and Computer Engineering (ECE)**
     Committees I have served and I am serving on and events I helped to organize include:
     - **Fall 2023–present**. Member of the Graduate Affair Committee (GAC).

Table 1: Undergraduate courses.

Semester	Course number	Course title	Learning	Instructor
Spring 2023	EECE 2540	Fundamentals of Networks	4.2	4.5
Summer 1 2022	EECE 2540	Fundamentals of Networks	4.7	4.3
Spring 2022	EECE 2540	Fundamentals of Networks	4.0	4.0
Fall 2021	EECE 2540	Fundamentals of Networks	3.4	4.2
Spring 2021	EECE 2540	Fundamentals of Networks	4.1	4.0
Fall 2020	EECE 2540	Fundamentals of Networks	4.0	4.2
Summer 1 2020	EECE 2540	Fundamentals of Networks	4.6	4.6
Spring 2020	EECE 2540	Fundamentals of Networks	3.9	4.3
Fall 2019	EECE 2540	Fundamentals of Networks	3.6	4.1
Spring 2019	EECE 2540	Fundamentals of Networks	3.8	3.9
Fall 2018	EECE 2540	Fundamentals of Networks	4.1	4.3

Table 2: Graduate courses.

Semester	Course number	Course title	Learning	Instructor
Spring 2023	EECE 7374	Fundamentals of Computer Networks	4.9	4.9
Spring 2020	EECE 7374	Fundamentals of Computer Networks	4.6	4.6
Spring 2019	EECE 7374	Fundamentals of Computer Networks	4.7	4.5
Spring 2018	EECE 7374	Fundamentals of Computer Networks	4.4	4.3

- **Spring 2023–present**. Coordinator for ECE Global Programs.
- **Fall 2020–present**. Faculty-staff-student co-lead ECE Diversity & Inclusion Group, co-chair.
- **Fall 2020–present**. ECE Diversity, Equity & Inclusion Committee, member.
- **2022–present**. Undergraduate Study Committee (USC), member.
- **2017–2022**. Undergraduate Study Committee (USC), co-chair.
- **Recurring**. ECE hiring committee (chaired four times)—current member.
- **Recurring**. CE teaching assignment coordinator.
- **Ongoing**. "CE Freshman Forums" (led the event three times since 2007) and "ECE Welcome Days."
- **Ongoing**. Ph.D. and M.S. thesis committees of over three dozen students.
- **Ongoing**. Ph.D. qualifying exam committee (organized the Computer Engineering quals three times).
- **2014–2016**. Work Group on the Teaching Load.
- **2015–2016**. Ph.D. Student Annual Review Committee.
- **2015–2016**. Graduate Recruitment Task Force. Weekly meetings.
- **2008–2012**. Department Council.
- **2012–2013**. ECE Tenure & Promotion Committee.
- **2002–2012**. ECE Awards Committee.
- **2002–2008**. Faculty co-advisor of the IEEE student branch at Northeastern U.
- **2007–2009**. Undergraduate Study Committee.

- **Service to the College of Engineering (COE)**
  Committees I have served on and events I helped to organize include:
  - **2017–2019**. COE Undergraduate Curriculum Committee.
  - **Ongoing**. COE "Annual Research Lab Fair," "Open Houses," "Welcome Days," "Building Bridges" and "Freshmen Night."
  - **2010–2013**. COE Tenure & Promotion Committee.
  - **2011**. Undergraduate Math Curriculum Review Committee.
  - **2005–2010**. COE Awards Committee.
  - **2002–2008**. "Leadership Retreat" for COE student groups.
  - **2002–2008**. 1st year faculty breakfast committee.
- **Service to Northeastern University (NU)**
  Committees I have served and I am serving on and events I helped to organize include:
  - **2020**. Collaborated in establishing a new Dual Ph.D. program between Northeastern University and "Sapienza" Università di Roma.
  - **2020**. Search Committee for the chair of the NU Department of Chemistry.
  - **2018**. NU Ad Hoc Mediation Committee for a grievance case.
  - **2009–present**. University Cadre (associate marshal).
  - **2011**. NU Video Stream Teaching committee.
  - **2010–2012**. Senate committee for enrollment and admission policies, chair. Ad Hoc College Liaison Committee (member).
  - **2010–2014**. University Senate.
  - **2003–2009**. Marshal at the NU commencement exercises (both undergraduate and graduate ceremonies).

2. **Service to the Discipline/Profession**

- Editor of the following three books:
  - Mobile Ad Hoc Networking: The Cutting Edge Directions. IEEE Press and John Wiley & Sons, Inc., New Jersey and New York, March 2013. (With M. Conti, S. Giordano, and I. Stojmenovic.) [B3]
  - Mobile Ad Hoc Networking. IEEE Press and John Wiley & Sons, Inc., New Jersey and New York, April 2004. (With M. Conti, S. Giordano, and I. Stojmenovic.) [B2]
  - Advanced Lectures in Networking. Number 2497 in Lecture Notes in Computer Science. Springer, Berlin, May 2002. (With E. Gregori and G. Anastasi.) [B1]
- Member of the editorial board of the following international journals:
  - Elsevier's Computer Communications.
  - Elsevier's Ad Hoc Networks.
  - ACM/Elsevier's Wireless Networks (WINET).
  - OCP's Ad Hoc & Sensor Wireless Networks.
  - Hindawi's International Journal of Vehicular Technology (IJVT, until 2012).
  - Hindawi's Journal of Electrical and Computer Engineering (until 2017).
  - ICST's Transactions on Algorithms Engineering (until 2016).
  - Wiley InterScience's Wireless Communications and Mobile Computing (WCMC, until 2013).

- Guest editor of special issues of the following journals:
  - Special issue of Elsevier's Computer Networks journal (volume 203, February 11 2022, with professor Tommaso Melodia and Dr. Leonardo Bonati) [E6].
  - Special issue of Elsevier's Ad Hoc Networks journal (volume 95, December 2019, with professor Christoph Sommer) [E5].
  - Special issue of Algorithmica (volume 49, issue 4, December 2007, with Dr. Cynthia A. Phillips) [E4].
  - Special issue of Elsevier's Ad Hoc Networks journal (volume 5, issue 8, November 2007, with professor Antonio Capone) [E3].
  - Special Section of ACM/SIGMOBILE Mobile Computing & Communications Review (MC2R) from the extended abstracts of the ACM/SIGMOBILE MobiCom 2004 student posters session (volume 9, issue 1, January 2005, with professor Chiara Petrioli).
  - Special issue of the ACM/Kluwer Journal on Special Topics in Mobile Networking and Applications (MONET) on Multipoint Communication in Wireless Mobile Networks (volume 7, issue 6, December 2002, with professor J.J. Garcia-Luna-Aceves, UCSC) [E2].
  - Special issue of the journal Wireless Communications & Mobile Computing (John Wiley & Sons, Pub.) on Mobile Ad Hoc Networking: Research, Trends and Applications (volume 2, issue 5, August 2002, with Dr. S.J. Lee, HP Labs, Palo Alto, CA) [E1].
- Steering Committee member of the ACM Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization (WiNTECH).
- General co-chair of the following international conferences.
  - ACM WiNTECH 2020 (with doctors Tommaso Melodia, Manu Agosain and Arturo Azcorra).
  - IEEE SECON 2019 (with professor Tommaso Melodia—hosted at Northeastern University).
  - SuMo-CPS 2013, the First International Workshop on Sustainable Monitoring through Cyber-Physical Systems (with professors Kaushik R. Chowdhury, Wendi Heinzelman, Swades De and Soumya Jana).
  - ACM SIGMOBILE Dial M-POMC 2004 (with Cynthia A. Phillips).
- Technical Program Committee co-chair of the following international conferences.
  - IEEE PIMRC 2023 Track 2: Networking and MAC (with professor Rodolfo Coutinho, Zilong Liu and Michela Meo).
  - WONS 2023 (with professors Paolo Casari).
  - ACM WUWNet 2022 (with professors Rosa Zheng and Hanu Singh).
  - IEEE DCOSS 2021 (with professors Enzo Mingozzi and Jiannong Cao).
  - ICNC 2019, Network Algorithms and Performance Evaluation (NAPE) symposium (with doctors Chen Chen and JaeSeung Song).
  - Med-Hoc-Net 2018 (with professor Christoph Sommer).
  - ICNC 2018, Wireless Ad Hoc and Sensor Networks (WAHS) symposium (with professor Shan Lin).
  - ACM WUWNet 2017 (with professors Fei Ji and Jun Liu).
  - IFIP Wireless Days 2016 (Wireless Communications track).
  - ICNC 2015, Network Algorithms and Performance Evaluation (NAPE) symposium (with professors Giovanni Pau and Dusit Tao Niyato).

  - IEEE WiMob 2013 (with professors Nathalie Mitton and Meixia Tao).
  - IEEE MASS 2012 (with professor Byrav Ramamurthy).
  - IEEE Globecom 2012, Ad Hoc and Sensor Networking Symposium (with professors Nidal Nasser, Lynda Mokdad, Yacine Ghamri-Doudane and Jianping Pan).
  - IEEE SECON 2010 (with professor Thomas F. La Porta).
  - Med-Hoc-Net 2006 (with professor Antonio Capone).
- Member of the Organizing Committee of over two dozen international conferences. An updated list is posted at: https://ece.northeastern.edu/fac-ece/basagni/service.html
- Member of the Technical Program Committee of over a hundred international conferences. An updated list is posted at: https://ece.northeastern.edu/fac-ece/basagni/service.html
- Member of the 2021 and 2022 ACM Distinguished Member evaluation committee.
- International referee in the *Valutazione Qualità della Ricerca* (VQR) for the Italian MIUR: VQR 2011–2014 and VQR 2015–2019.
- Letter writer for *Tenure and Promotion* cases of over half a dozen colleagues.
- Letter writer for supporting and recommending hiring and awards of over three dozen colleagues and students.
- Member of the PAWR Project Office, which manages the PAWR program for the NSF (PAWR is a $100M public/private partnership for the advancement of wireless communications and networking).
- Proposal reviewer for the following organizations: U.S. National Science Foundation, Canada National Research Council, the Canadian Killam Fellowship, the Canada Council for the Arts, agencies of the European Union, private Italian institutions and the Italian Government.
- Recurrent panelist for the DoD/ASEE NDSEG and for the NSF fellowships, awarding aspiring graduate students over $30,000 for their graduate studies.
- Book and book proposal reviewer for major publishers, including Wiley & Sons, MIT Press and CRC Press.
- Recurrent Session Chair at major international conferences, symposia, workshops and events.
- Reviewer for top international journals, including multiple IEEE and ACM transactions and Elsevier's Computer Communications, Computer Networks and Ad Hoc Networks.
- External reviewer and committee member of half a dozen Ph.D. dissertation of students in Europe and North America.

3. **Professional Development**

- Participation to workshops, symposia, and training events.

  In addition to the numerous workshops and training sessions that I attend at Northeastern University routinely, the following is a selection of recent events I have attended for professional development.

  - **28 October 2020**. Provost's Diversity Recruitment Forums. *Cultivating Northeastern University as a Welcoming Community*. Virtual.
  - **22 October 2020**. STRIDE (Strategies and Tactics for Recruiting to Improve Diversity and Excellence) Workshop at Northeastern University. Virtual. (Attended multiple times, especially as member or chair of a hiring committee.)

- **19 October 2020**. Provost's Diversity Recruitment Forums. *Fostering Institutional Diversity; Addressing Fit*. Virtual.
- **16 October 2020**. Provost's Diversity Recruitment Forums. *Broadening the Hiring Pool*. Virtual.
- **27–28 August 2020**. NSF Workshop on *Workshop on Wireless, Spectrum & Innovation*. Virtual.
- **7 October 2019**. NSF-sponsored MERIT (Midscale Education and Research Infrastructure and Tools) Community Event 2019. Chicago, IL.
- **29–30 May 2019**. NSF-sponsored MERIF (Midscale Experimental Research Infrastructure Forum) Education Workshop 2019. Washington, DC.
- **10–13 April 2019**. ABET Symposium 2019. Dallas, TX.
- **12 December 2018**. DARPA Spectrum Collaboration Challenge. Johns Hopkins University Applied Physics Laboratory (APL), Laurel, MD.
- **5–7 November 2018**. Internet Governance Forum 2018. Rome, Italy.
- **22–23 October 2018**. ONAP Academic Summit. New York City, NY.
- **11-13 October 2018**. Tau Beta Pi Convention and Graduate School & Corporate Recruiting Fair. Denver, CO.
- **9–14 July 2018**. ESOF: EuroScience Open Forum. Toulouse, France.
- **12–13 April 2018**. ABET Symposium 2019. San Diego, CA.
- **19–20 March 2018**. NSF Workshop on *Underwater Wireless Communications and Networking*. Crystal City, VA.
- **27–28 February 2017**. SUNRISE final technical review meeting. Lerici, Italy.
- **12 December 2016**.GENI Network Innovators Community Event (NICE) 2016. Irvine, CA.
- **24 October 2016**. REU Symposium 2016, by CUR. Arlington, VA.
- **6–7 October 2016**. Kickoff meeting of the Future GENI Consortium. Washington, D.C.
- **15–17 August 2016**. NSF WIFiUS Workshop on *Wireless Innovation between Finland and US (WiFiUS)*. Helsinki, Finland.
- **11–15 July 2016**. Fed4FIRE-GENI Research Experiment Summit (FGRE 2016). Ghent, Belgium.
- **7 March 2016**. GENI Regional Workshop. Tempe, AZ.
- **10 November 2015**. GENI Network Innovators Community Event (NICE) 2015. San Francisco, CA.
- **18–19 September 2015**. GENI Regional Workshop. Chicago, IL.
- **15–16 March 2012**. NSF Workshop on *Security for Cloud Computing*. Arlington, VA.
- **18 March 2011**. The Leadership Academy. Boston, MA.

- **Membership in professional associations and organization**
  - **2019–present**. Core Faculty of the Northeastern University Institute for the Wireless Internet of Things.
  - **2018–present**. Faculty Affiliate of the Northeastern University Global Resilience Institute.
  - **2018–present**. Member of the NSF PAWR Project Office: https://advancedwireless.org.
  - **1996–present**. Member of the Association for Computer Machinery, ACM.
    - **Distinguished scientist** since 2015.

    - Member of the Special Interest Group SIGMOBILE.
    - Life member.
- **1996–present**. Member of the Institute of Electrical and Electronics Engineers, IEEE.
    - **Senior member** since 2006.
    - Member of the Communications and Vehicular Technology societies.
- **2008–present**. Member of the Council on Undergraduate Research, CUR.
- **2003–2017**. Member of the American Society for Engineering Education, ASEE.