

Randall A. Berry

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AT&T Research Professor, Department of Electrical and Computer Engineering, Northwestern University
Research Director, SpectrumX — NSF Spectrum Innovation Center

RESEARCH PROFILE

My research studies the design, operation, and economics of communication networks, with particular emphasis on wireless spectrum. I use tools from communications, networking, optimization, game theory, economics, and learning to study both the technical performance of these systems and the incentives and policies that shape their use.

Research areas: Spectrum Access and Policy; Network Economics; Wireless Networks and Systems; Learning and Social Interactions.

APPOINTMENTS

Northwestern University, Evanston, IL

AT&T Research Professor

2026–present

Professor, Electrical and Computer Engineering

2011–present

Director, Master of Science in Information Technology Program

2015–present

Chair, Electrical and Computer Engineering

2019–2026

John A. Dever Professor (2018–2026); Loraine Morton Professor (2017–2018)

Associate Professor (2006–2011); Assistant Professor (2000–2006)

SpectrumX — NSF Spectrum Innovation Center

Research Director

April 2025–present

Research Partner

2021–present

Roberson and Associates, Schaumburg, IL

Principal Engineer III

2018–present

MIT Lincoln Laboratory, Lexington, MA

Member Technical Staff, Advanced Networks Group

1998

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Ph.D., EECS, 2000

Massachusetts Institute of Technology, Cambridge, MA

S.M., EECS, 1996

University of Missouri–Rolla, Rolla, MO

B.S., Electrical Engineering, 1993

SELECTED HONORS AND AWARDS

- IEEE Fellow, 2013.
- IEEE Communications Society Distinguished Lecturer, 2014–2015.
- IEEE DySPAN Best Paper Award, Policy Track (with Kangle Mu), 2024.
- WiOpt Best Student Paper Awards (with Kangle Mu, 2024; with Pawan Poojary, 2023).
- IEEE Workshop on Smart Data Pricing, Bell Labs Best Paper Awards, 2015 and 2017.
- WiOpt Best Paper Award, 2016.
- National Science Foundation CAREER Award, 2003.
- Northwestern ECE Best Teacher Award, 2001–2002.

TEACHING AND MENTORING

Taught a broad range of undergraduate and graduate courses in communications, networking, information theory, stochastic processes, game theory, and related areas. Advised numerous Ph.D. and M.S. students and postdoctoral researchers. Recipient of the Northwestern ECE Best Teacher Award.

SELECTED PUBLICATIONS

- R. Berry, T. W. Hazlett, and M. Honig, “Valuing Federal Spectrum,” TPRC 2026, Washington, DC, 2026.
<https://ssrn.com/abstract=7237898>
- W. Lehr, R. Berry, I. Kadota, C. Bastidas, K. Mu, Z. Xie, and I. Tamin, “Automating Spectrum Sharing: A Bottom-up Approach and Research Agenda,” *Telecommunications Policy*, 2025.
- K. Mu, Z. Xie, I. Kadota, and R. Berry, “Analysis and Optimization of 5G Random Access for Massive Handover with Spectrum Sharing,” IEEE DySPAN, 2026.
- Z. Xie and R. A. Berry, “Optimal Contract Design for Dynamic Sharing of Infrastructure and Spectrum,” IEEE DySPAN, 2026.
- Q. Nguyen, R. Berry, and E. Modiano, “Stochastic Network Utility Maximization in Strategic Queueing Systems: A Game-Theoretic Approach,” *Proc. ACM Meas. Anal. Comput. Syst.*, vol. 10, no. 1, Article 21, 2026.
- C. Ozturk, D. Guo, R. A. Berry, and M. L. Honig, “Downlink Spectral Efficiency of LEO Satellite Constellations,” IEEE ISIT, 2025.
- T. Nguyen, H. Zhou, R. A. Berry, M. L. Honig, and R. Vohra, “The Cost of Free Spectrum,” *Operations Research*, vol. 64, no. 6, pp. 1217–1229, 2016.
- R. A. Berry, M. L. Honig, and R. Vohra, “Spectrum Markets: Motivation, Challenges, and Implications,” *IEEE Communications Magazine*, vol. 48, no. 11, pp. 146–155, 2010.
- J. Huang, R. A. Berry, and M. L. Honig, “Auction-Based Spectrum Sharing,” *Mobile Networks and Applications*, vol. 11, pp. 405–418, 2006.

Complete publication list: <https://scholar.google.com/citations?user=iWq6Tn4AAAAJ>

SELECTED RESEARCH AND PROFESSIONAL LEADERSHIP

- Research Director, SpectrumX — NSF Spectrum Innovation Center, 2025–present; Research Partner, 2021–present.
- General Chair, EAI GameNets Conference, 2026.
- Steering Committee, IEEE DySPAN, 2017–present; Steering Committee Chair since 2020.
- Inaugural Area Editor for “Network Science and Economics,” *IEEE Open Journal of the Communications Society*, 2019–2024.
- Division Editor for “Networks and Services,” *Journal of Communications and Networks*, 2017–present.
- Technical Program Committee Chair, ACM MobiHoc, 2018.
- Guest Editor, *IEEE Journal on Selected Areas in Communications*, two special issues on “Game Theory for Networks,” 2017.
- Associate Editor, *IEEE Transactions on Information Theory*, 2008–2012; *IEEE Transactions on Wireless Communications*, 2006–2009.

RESEARCH FUNDING

Principal Investigator or co-PI on more than 40 sponsored research projects, with support from the National Science Foundation, U.S. Army Research Office, DARPA, and industry.

SELECTED INVITED AND PLENARY TALKS

- “Radio Spectrum Valuation,” with T. W. Hazlett and M. L. Honig, U.S. Telecommunications Training Institute (USTTI) Radio Frequency Spectrum Management Webinar Series, November 2025.
- “Meeting the Spectrum Needs of Next Generation Wireless Networks,” University of Michigan ECE Distinguished Seminar Series, December 2024.
- Plenary Speaker, Information Theory and its Applications Workshop, 2022.
- Keynote Speaker, IEEE Workshop on Smart Data Pricing, 2017.
- Keynote Speaker, Workshop on Resource Allocation in Wireless Networks (RAWNET), 2006.