Dr. Christopher Rose
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Education

Ph.D. in EECS, 1985, M.I.T., Cambridge, MA

S.M. in EECS, 1981, M.I.T., Cambridge, MA

B.S. in EECS, 1979. M.I.T., Cambridge, MA

Employment

2023–: *Professor of Engineering, Director of STEMJazz Programs*, Brown University

2020–2023: *Professor of Engineering, Associate Provost for STEM Initiatives*, Brown University

2015–2020: *Professor of Engineering, Associate Dean of the Faculty for Special Initiatives*, Brown University

2014–2015: *Visiting Professor of Engineering*, Brown University

2013–2014: *MLK Jr. Visiting Professor of EECS*, M.I.T.

2003–2015: *Professor*, Electrical and Computer Engineering, Rutgers University

1999–2007: *Associate Director*, WINLAB, Rutgers University

1996–2003: *Associate Professor*, Electrical and Computer Engineering, Rutgers University

1990–1996: *Assistant Professor*, Electrical and Computer Engineering, Rutgers University

1985–1990: *Member Technical Staff*, AT&T Bell Laboratories, Network Systems Research Department

Awards

2025 Brown $\tau\beta\Pi$ Dedicated Faculty Award

2025 Karen T. Romer Award for Undergraduate Advising and Mentoring

2022 IEEE Undergraduate Teaching Award

2015-2016 Brown ONYX Society Award for Service/Dedication to Black Students

2012-2013 Rutgers Engineering Governing Council Teaching Excellence Award

2010-2011 Rutgers Engineering Governing Council Best Teacher in Engineering

2009-2010 Rutgers Engineering Governing Council Teaching Excellence Award

2008-2009 Rutgers Engineering Governing Council Teaching Excellence Award

2007 IEEE Fellow for contributions to wireless communication systems theory

2005-2006 Rutgers Engineering Governing Council Teaching Excellence Award

2003 IEEE Marconi Paper Prize Award in Wireless Communications

Outstanding Service as General Chair, ACM SIGMOBILE MobiCom 2001

Outstanding Service as Executive Committee Member, 1997-2001, ACM SIGMOBILE

Henry Rutgers Research Fellow, 1990

Bell Laboratories Cooperative Research Fellowship, 1979–1985

NSF Fellowship, Awarded 1979 (declined)

GEM Fellowship, Awarded 1979 (declined)

Notable

Nature Magazine cover story:

- *Inscribed Matter As An Efficient Means of Communication with An Extraterrestrial Civilization*, C. Rose and G. Wright, Nature, 431, pp. 47–49, September 2, 2004.

Press coverage of **Nature** article:

- **NY Times** 9/2/04 (Overbye, pp. A20)
- **Star Ledger** 9/2/04 (Coughlin, front page)
- **NY Times** Editorial 9/8/04
- Radio interviews: **BBC** (2), **NPR** (3), **CBC** (1)
- Rutgers **Daily Targum** (9/17/04) and **Focus** (9/20/04)

(see http://www.winlab.rutgers.edu/∼crose/cgi-bin/cosmicP.html#PRESS for complete press coverage and commentary)

Popular science adoption of **Nature** article:

- **If the Universe Is Teeming with Aliens ... Where Is Everybody?** (Stephen Webb with forward by Martin Rhees, Springer 2015) top 75 reasons for as yet no evidence of intelligent extraterrestrial life: Inscribed matter transmission is reason #35.

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Current Research

Communication/Information Theory as a general intellectual framework: Biological Communication, Molecular Communication, Molecular Informatics, Distributed Dynamic Chemical Sensing/Tracking, Adinkras (supersymmetry)

Books

1. **Interference Avoidance Methods for Wireless Systems**, D. Popescu & C. Rose, Kluwer Academic Publishers (2004) (http://doi.org/10.1007/b105850).

Journal Articles and Book Chapters

1. *Limits of Information Flow Between Classically Interacting Particles*, M. Miller-Dickson and C. Rose, Physical Review E, 113(3), March 19, 2026. (http://doi.org/10.1103/xb2l-78n3)

2. *Heterogeneity In Susceptibility Dictates The Order Of Epidemic Models*, C. Rose, A.J. Medford, C.F. Goldsmith, T. Vegge, J.S. Weitz and A.A. Peterson, Journal of Theoretical Biology, v.528, November 7, 2021. (http://doi.org/10.1016/j.jtbi.2021.110839)

3. *Secret Messaging with Endogenous Chemistry*, E. Kennedy, J. Geiser, C. Arcadia, P. Weber, C. Rose, B. Rubenstein and J. Rosenstein, Nature Scientific Reports, 11(13960), July 6, 2021. (http://doi.org/10.1038/s41598-021-92987-2)

4. *Implementing Parallel Arithmetic via Acetylation and Its Application to Chemical Image Processing*, A. Dombroski, K. Oakley, C. Arcadia, F. Nouraei, S.L. Chen, B. Rubenstein, C. Rose, J. Rosenstein, S. Reda and E Kim, Proc. R. Soc. A. 477(2248), April 28, 2021 (http://doi.org/10.1098/rspa.2020.0899)

5. *Leveraging autocatalytic reactions for chemical domain image classification*, C. Arcadia, A. Dombroski, K. Oakley, S. Chen, H. Tann, C. Rose, E. Kim, S. Reda, B. Rubnstein and J. Rosenstein, Chem. Sci. 12(15), pp.5464-5472, March 2021 (http://doi.org/10.1039/D0SC05860B).

6. *Capacities and Optimal Input Distributions for Particle-Intensity Channels*, N. Farsad, W. Chuang, A. Goldsmith, C. Komninakisy, M. Medard, C. Rose, L. Vandenberghe, E. Weselk and R. Wesel, IEEE Journal on Molecular, Biological and Multiscale Communication, 6(3), pp.220.232, Dec 2020 (http://doi.org/10.1109/TMBMC.2020.3035371).

7. *High-Dimensional Time Series Feature Extraction for Low-Cost Machine Olfaction*, P. Shakya, E. Kennedy, C. Rose and J.K. Rosenstein, IEEE Sensors Journal, Sept. 2020 (http://doi.org/10.1109/JSEN.2020.3022966).

8. *Principles of Information Storage in Small Molecules*, J.K. Rosenstein, C. Rose, S. Reda, P.M. Weber, E. Kim, J. Sello, J. Geiser, E. Kennedy, C. Arcadia, A. Dombroski, K. Oakley, S.L. Chen, H. Tann and B.M. Rubenstein, IEEE Transactions on NanoBioscience, February 28, 2020 (http://doi.org/10.1109/TNB.2020.2977304).

9. *Multicomponent Molecular Memory*, C. Arcadia, E. Kennedy, J. Geiser, A. Dombroski, K. Oakley, S.-L. Chen, L. Sprague, M. Ozmen, J. Sello, P. Weber, S. Reda. C. Rose, E. Kim, B. Rubenstein and J.K. Rosenstein, Nature Communications, 11(691), February 4, 2020 (http://doi.org/10.1038/s41467-020-14455-1).

10. *Capacity Bounds on Point-to-Point Communication Using Molecules*, C. Rose, I.S. Mian and M. Ozmen, Proceedings of the IEEE, July, 2019 (http://doi.org/10.1109/JPROC.2019.2909503).

11. *Encoding Information in Synthetic Metabolomes*, E. Kennedy, C. Arcadia, J. Geiser, P. M. Weber, C. Rose, B.M. Rubenstein, and J. Rosenstein, PLOS One July 3, 2019 (http://doi.org/10.1101/627745).

12. *Spatiotemporal Information Preservation In Turbulent Vapor Plumes* E, Kennedy, P. Shakya, M. Ozmen, C. Rose and J.K. Rosenstein, Applied Physics Letters 112(26), June 26, 2018 (http://doi.org/10.1063/1.5037710).

13. *Correlated Transmission and Detection of Concentration-Modulated Chemical Vapor Plumes*, P. Shakya, E. Kennedy, C. Rose and J.K. Rosenstein, IEEE Sensors Journal, 18(16), pp.6504-6509, June 2018. https://doi.org/.

14. *High Speed Chemical Vapor Communication Using Photoionization Detectors in Turbulent Flow*, M. Ozmen, E. Kennedy, J. Rose, P. Shakya, J.K. Rosenstein and C. Rose, IEEE Journal on Molecular, Biological and Multiscale Communication, September 2018 https://doi.org/10.1109/TMBMC.2019.2926722.

15. *Inscribed Matter Communication: Part II*, Rose, C. and Mian, I.S., IEEE Journal on Molecular, Biological and Multiscale Communication, 2(2), pp.228–239, Dec. 2016 (http://doi.org/10.1109/TMBMC.2017.2655026).

16. *Inscribed Matter Communication: Part I*, Rose, C. and Mian, I.S., IEEE Journal on Molecular, Biological and Multiscale Communication, 2(2), pp.209–227, Dec. 2016 (http://doi.org/10.1109/TMBMC.2017.2655025).

17. *Guest Editorial Series on Molecular, Biological, and Multiscale Communication (First Issue)*, Eckford, A.W., Krishnaswamy, D. Paluh, J.L. and Rose, C., IEEE Journal on Selected Areas in Communication 32(12), pp. 2313–2314, December 2014 (http://doi.org/10.1109/JSAC.2014.2367751).

18. *Communication theory and multicellular biology*, S. Mian & C. Rose, Integrative Biology, v.3(4) pp.350-367, April 2011 (http://doi.org/10.1039/C0IB00117A).

19. *Interference Avoidance for CDMA Systems*, D. Popescu, S. Ulukus, C. Rose & R. Yates in **Advances in Multiuser Detection**, (Ed., M.L. Honig), Chapter 7, pp. 365-416, Wiley, 2009. (http://doi.org/10.1002/9780470473818).

20. *Interference Avoidance and Multiaccess Vector Channels*, D. Popescu, O. Popescu & C. Rose, IEEE Transactions on Communications, 55(8), pp. 1466-1471, August 2007 (http://doi.org/10.1109/TCOMM.2007.902528).

21. *Simultaneous Water Filling in Mutually Interfering Systems*, O. Popescu, D. Popescu & C. Rose, IEEE Transactions on Wireless Communications, 6(3), pp. 1102–1113, March 2007 (http://doi.org/10.1109/TWC.2007.05464).

22. *Codeword Optimization for Uplink CDMA Dispersive Channels*, D. Popescu & C. Rose, IEEE Transactions on Wireless Communications, vol. 4(4), pp. 1563 - 1574, July 2005 (http://doi.org/10.1109/TWC.2005.850351).

23. *Coping with Uncertainty in Mobile Wireless Networks*, Das, S.K.& Rose, C. in **Emerging Location Aware Broadband Wireless Ad hoc Networks** (Eds. R. Ganesh, S. Kota, K. Pahlavan, and R. Augusti), Chapter 12, pp. 189-204, Springer, 2005 (http://doi.org/10.1007/0-387-23072-6_12).

24. *Greedy SINR Maximization in Collaborative Multi-Base Wireless Systems*, O. Popescu & C. Rose, EURASIP Journal on Wireless Communications Networking (2) pp.201–209 (2004) (http://doi.org/10.1155/S1687147204406082).

25. *Sum capacity and TSC bounds in collaborative multi-base wireless systems*, O. Popescu & C. Rose, IEEE Transactions on Information Theory, 50(10) pp.2433-2438, October (2004) (http://doi.org/10.1109/TIT.2004.834851).

26. *Inscribed Matter As An Efficient Means of Communication with An Extraterrestrial Civilization*, C. Rose and G. Wright, Nature, 431, pp. 47–49, September 2, 2004 (http://doi.org/10.1038/nature02884).

27. *Maximizing the determinant for a special class of block-partitioned matrices*, O. Popescu, C. Rose & D. Popescu, Mathematical Problems in Engineering 2004(1), pp.49–61, (2004) (http://doi.org/10.1155/S1024123X04307027).

28. *Interference Avoidance and Multiuser MIMO Systems*, D. Popescu & C. Rose, International Journal of Satellite Communications, 21(1), pp.143–161, January (2003) (http://doi.org/10.1109/ICASSP.2003.1202771).

29. *Interference Avoidance*, D. Popescu & C. Rose, Wiley Encylopedia of Telecommunications, J. Proakis, Ed., Wiley, (2002) (http://doi.org/10.1002/0471219282.eot272).

30. *Paging and Registration in Mobile Networks*, C. Rose, Wiley Encylopedia of Telecommunications, J. Proakis, Ed., Wiley, (2002) (http://doi.org/10.1002/0471219282.eot271).

31. *Wireless Systems and Interference Avoidance*, C. Rose, S. Ulukus, & R. Yates, IEEE Transactions on Wireless Communications 1(3), pp. 415–428, July (2002). **2003 IEEE Marconi Paper Prize Award in Wireless Communications** (http://doi.org/10.1109/TWC.2002.800540).

32. *CDMA Codeword Optimization: interference avoidance and convergence via class warfare*, IEEE Trans. Information Theory, 47(6), pp. 2368–2382, September (2001) (http://doi.org/10.1109/18.945252).

33. *Infostations: New Perspectives On Wireless Data Networks*, in **Next Generation Wireless Networks**, Editor: S. Tekinay, Kluwer Academic Publishers, May 2000 (http://doi.org/10.1007/0-306-47310-0_2).

34. *One Dimensional Location Area Design*, C.U. Saraydar, O.E. Kelly & C. Rose, IEEE Trans. Vehic. Tech 49(5) pp.1626–1632, September (2000) (http://doi.org/10.1109/25.892546).

35. *State-Based Paging/Registration: A Greedy Approach*, C. Rose, IEEE Transactions on Vehicular Technology 48(1), p166–173, January (1999) (http://doi.org/10.1109/25.740083).

36. *Highly Mobile Users and Paging: optimal polling strategies*, A. Yener & C. Rose, IEEE Transaction on Vehicular Technology, 47(4), pp.1251-1257, November (1998) (http://doi.org/10.1109/25.728514).

37. *Location Uncertainty in Mobile Networks: a theoretical framework*, C. Rose & R. Yates IEEE Communications Magazine, 35(2), pp.94–101, Februrary (1997) (http://doi.org/10.1016/0893-6080(89)90029-4).

38. *Ensemble Polling Strategies for Increased Paging Capacity in Mobile Communication Networks*, C. Rose & R. Yates, ACM Wireless Networks, 3(2), pp.159–167 (1997) (http://doi.org/10.1023/A:1019196931796).

39. *Genetic Algorithms Applied to the Cellular Call Admission Problem: Local Policies*, A. Yener & C. Rose, IEEE Transactions on Vehicular Technology, 46(1), February (1997) (http://doi.org/10.1109/25.554739).

40. *Analysis of a Mobile Assisted Adaptive Location Management Strategy*, R. Yates, C. Rose, S. Rajagopalan & B. Badrinath, ACM Mobile Networks and Applications (MONET), 1(2), pp.105–112 (1996) (http://doi.org/10.1007/BF01193331).

41. *Minimizing the Average Cost of Paging and Registration: a timer-based method*, C. Rose, ACM Wireless Networks, 2(2) pp.109–116, June (1996) (http://doi.org/10.1007/BF01225634).

42. *Genetic Algorithms and Call Admission to Telecommunications Networks*, C. Rose & R. Yates, Computers and Operations Research, 23(5), pp.485–499, May (1996) (http://doi.org/10.1016/0305-0548(95)00033-X).

43. *Scheduling Arrivals to Queues for Minimum Average Blocking: the S(n)/M/C/C system*, C. Rose & R. Yates, Computers and Operations Research, 22(8), pp.793–806, October (1995) (http://doi.org/10.1016/0305-0548(94)00068-J).

44. *Minimizing the Average Cost of Paging Under Delay Constraints*, C. Rose & R. Yates, ACM Wireless Networks, 1(2) pp.211–219, (1995) (http://doi.org/10.1007/BF01202543).

45. *Mean Internodal Distance in Multihop Store & Forward Networks*, C. Rose, IEEE Transactions on Communications, 40(8), pp.1310-1318, (1992) (http://doi.org/10.1109/26.156635).

46. *Low Mean Internodal Network Topologies and Simulated Annealing*, C. Rose, IEEE Transactions on Communications, 40(8), pp.1319-1326, (1992) (http://doi.org/10.1109/26.156636).

47. *High T_c Superconductor Waveguides: Theory and Application*, J.H. Winters & C. Rose, IEEE Transactions on Microwave Theory and Techniques, 39(4), pp.617-623, (1991) (http://doi.org/10.1109/22.76423).

48. *A Dielectric-Free Superconducting Coaxial Cable*, C. Rose & M.J. Gans, IEEE Transactions on Microwave Theory and Techniques, Vol. 38(2), pp.166-177, (1990) (http://doi.org/10.1109/22.46427).

49. *Rapid Optimal Scheduling for Time-Multiplex Switches Using a Cellular Automaton*, C. Rose, IEEE Transactions on Communications, 37(5), pp.500-509, (1989) (http://doi.org/10.1109/26.24601).

50. *Minimum Distance Automata in Parallel Networks for Optimum Classification*, J.H. Winters & C. Rose, Neural Networks, v.2, pp.127-132, (1989) (http://doi.org/10.1016/0893-6080(89)90029-4).

51. *Frequency Dependence of Synchronization of Cochlear Nerve Fibers in the Alligator Lizard: evidence for a cochlear origin of timing and non-timing neural pathways*, C. Rose & T.F. Weiss, Hearing Research, 33, pp.151-166, (1988) (http://doi.org/10.1016/0378-5955(88)90028-7).

52. *Stages of Degradation of Timing Information in the Cochlea: a comparison of hair-cell and nerve-fiber responses in the alligator lizard*, T.F. Weiss & C. Rose, Hearing Research, 33, pp.167-174, (1988) (http://doi.org/10.1016/0378-5955(88)90029-9).

53. *A Comparison of Synchronization Filters in Different Auditory Receptor Organs*, T.F. Weiss & C. Rose, Hearing Research, 33, pp.175-179, (1988) (http://doi.org/10.1016/0378-5955(88)90030-5).

54. *The Performance of Random and Optimal Scheduling in a Time-Multiplex Switch*, C. Rose & M.G. Hluchyj, IEEE Transactions on Communications, 35(8), pp.813-817, (1987) (http://doi.org/10.1109/TCOM.1987.1096868).

Refereed Conference Publications

1. *Limits of Information Flow Between Classically Interacting Particles*, M. Miller-Dickson and C. Rose, 2026 International Seminar on Information and Communication, Zurich, February 2026

2. *Hide and Seek on a Budget*, C. Rose International Symposium on Information Theory, Espoo, June 2022

3. *A General Upper Bound on Point-to-Point Particle Timing Channel Capacity Under Constant Particle Emission Intensity*, C. Rose and I.S. Mian, International Symposium on Information Theory, Paris, July 2019

4. *Parallelized Linear Classification with Volumetric Chemical Perceptrons*, C. Arcadia, H. Tann, A. Dombroski, K. Ferguson, S. L. Chen, E. Kim, B. Rubenstein, C. Rose, S. Reda and J. Rosenstein, IEEE Conference on Rebooting Computing, 2018

5. *TruffleBot: Low-Cost Multi-Parametric Machine Olfaction* J. Webster, P. Shakya, E. Kennedy, M. Caplan, C. Rose, and J.K. Rosenstein IEEE Biomedical Circuits and Systems Conference (BioCAS), Cleveland, OH, October 2018.

6. *High Speed Chemical Vapor Communication Using Photoionization Detectors*, M. Ozmen, E. Kennedy, J.K. Rose, P. Shakya, J. Rosenstein and C. Rose, Global Communications Conference 2018, Abu Dhabi, December 2018

7. *Computing With Chemicals: Perceptrons Using Mixtures of Small Molecules*,C. Rose, S. Reda, B. Rubenstein and J.K. Rosenstein, International Symposium on Information Theory, Vail, June 2018

8. *The Particle Intensity Channel With Imperfect Transmitter and Receiver*, N. Farsad, C. Rose, M. Medard and A. Goldsmith, International Symposium on Information Theory, Aachen, June 2017

9. *State Estimation, Wireless Tropes, Demons and Uncertainty*, C. Rose, International Symposium on Information Theory, Barcelona, July 2016

10. *A Fundamental Framework for Molecular Communication Channels: timing & payload*, C. Rose and I.S. Mian, IEEE International Conference on Communications (ICC), London, June 2015

11. *Signaling with Identical Tokens: upper bounds with energy constraints*, C. Rose and I.S. Mian, International Symposium on Information Theory, Honolulu, July 2014

12. *Signaling with Identical Tokens: lower bounds with energy constraints*, C. Rose and I.S. Mian, International Symposium on Information Theory, Istanbul, July 2013

13. *Wireless Signaling with Identical Quanta*, R. Song, C. Rose, Y-L Tsai and I.S. Mian, WCNC'12, Paris, April 2012

14. *An Additive Exponential Noise Channel with a Transmission Deadline*, Y-L. Tsai, C. Rose, R. Song, I.S. Mian, pp.598–602, International Symposium on Information Theory, St. Petersburg, July 2011

15. *MIMO Power Strategies for Limited Transmitter CSI*, Y-L. Tsai and C. Rose, CISS'10, Princeton, March 2010

16. *Channel Probing Under a Power Budget*, J. Singh and C. Rose, CISS'06, Princeton, March 2006

17. *Intelligent Power Allocation Strategies for Unlicensed Spectrum*, N. Clemens and C. Rose, IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN 2005), Baltimore, November 2005.

18. *Interference Avoidance for Capacity Optimization in Mutually Interfering Wireless Systems*, O. Popescu, D.C. Popescu and C. Rose, IEEE Vehicular Technology Conference, Dallas, September 2005.

19. *Greedy interference Avoidance in Non-Collaborative Multi-Base Wireless Systems*, O. Popescu, D.C. Popescu and C. Rose, Proceedings 39^{th} Conference on Information Sciences and Systems - CISS 2005, Johns Hopkins, March 2005.

20. *Will ET Write or Radiate: inscribed mass vs. electromagnetic channels*, C. Rose & G. Wright, Asilomar'04, Pacific Grove November 7, 2004.

21. *Signal Space Partitioning Versus Simultaneous Water Filling for Mutually Interfering Systems*, O. Popescu, C. Rose and D.C. Popescu, IEEE Globecom'04, Dallas, November 2004.

22. *Optimal Signature Sets for Transmission of Correlated Data over a Multiple Access Channel*, J. Acharya, R. Roy, J. Singh and C. Rose, IEEE Globecom'04, Dallas, November 2004

23. *Coping With Uncertainty in Mobile Wireless Networks*, S.K. Das and C. Rose, PIMRC 2004, v.1 pp.103–108, Sept. 2004.

24. *Interference Avoidance Versus Iterative Water Filling in Multiaccess Vector Channels*, D.C. Popescu, O. Popescu and C. Rose, IEEE Vehicular Technology Conference, Los Angeles, Fall 2004.

25. *Exploiting Mobility in Multi-hop Infostation Networks to Decrease Transmit Power*, F. Atay and C. Rose, IEEE Wireless Communications and Networking Conference (WCNC'04), March 2004.

26. *Threshold-based Policies in Mobile Infostation Networks*, F. Atay and C. Rose, Proceedings 38^{th} Conference on Information Sciences and Systems - CISS 2004, Princeton, March 2004.

27. *Strong Interference and Spectrum Warfare* O. Popescu, C. Rose, D. Popescu, Proceedings 38th Conference on Information Sciences and Systems - CISS 2004, pp. 83 - 88, Princeton, March 2004

28. *Codeword Adaptation and Tracking for Distributed Interference Avoidance* J. Singh and C. Rose, IEEE Globecom 2003, San Francisco, December 2003.

29. *Waterfilling May Not Good Neighbors Make*, O. Popescu and C. Rose IEEE Globecom 2003, San Francisco, December 2003.

30. *Write or Radiate?*, C.Rose, IEEE Vehicular Technology Conference, Orlando, Fall 2003

31. *Interference Avoidance and Power Control for Uplink CDMA Systems*, D.C. Popescu and C. Rose, IEEE Vehicular Technology Conference, Orlando Fall 2003

32. *Multiuser MIMO Systems and Interference Avoidance*, D.C. Popescu, O. Popescu and C. Rose, Proceedings 2003 IEEE International Conference on Acoustics, Speech, and Signal Processing - ICASSP'03, vol. IV, pp. IV-828 - IV-831, April 6-10 2003, Hong Kong.

33. *Interference Avoidance and Multiaccess Vector Channels*, D.C. Popescu, O. Popescu and C. Rose, International Symposium on Information Theory (ISIT 2002), July 2002, Lusanne, Switzerland

34. *Codeword Optimization for Asynchronous CDMA Systems Through Interference Avoidance*, D.C. Popescu and C. Rose, 36th Conf. on Information Sciences and Systems (CISS 2002), March 20-22 2002, Princeton University, New Jersey.

35. *Interference Avoidance and Multiaccess Dispersive Channels*, D. C. Popescu and C. Rose, 35th Annual Asilomar Conference on Signals, Systems, and Computers, November 4-7 2001, Pacific Grove, California.

36. *Fading Channels and Interference Avoidance*, D. C. Popescu and C. Rose, 39th Allerton Conference on Communication, Control, and Computing, October 3-5 2001, Monticello, Illinois.

37. *Minimizing Total Square Correlation with Multiple Receivers*, O. Popescu and C. Rose, 39th Allerton Conference on Communication, Control, and Computing, October 3-5 2001, Monticello, Illinois.

38. *Interference Avoidance and Sum Capacity for Multibase Systems* O. Popescu and C. Rose, 39th Allerton Conference on Communication, Control, and Computing, October 3-5 2001, Monticello, Illinois.

39. *A New Approach to Multiple Antenna Systems*, CISS'01 March 2001, Baltimore, MD.

40. *Wireless Data: patience has its rewards*, C. Rose, IEEE CCW, October 18, 2000, Isla Captiva FL

41. *MINE MINE MINE: Information Theory, Infostation Networks and Resource Sharing*, A. Iacono and C. Rose, WCNC 2000, September 2000, Chicago.

42. *Codeword Quantization for Interference Avoidance*, D.C. Popescu and C. Rose, ICASSP 2000, June 2000, Istanbul.

43. *Infostations: New Perspectives On Wireless Data Networks*, A. Iacono and C. Rose, NJIT Symposium on Next Generation Wireless Networks, May 2000

44. *Interference Avoidance for Wireless Systems*, C. Rose, S. Ulukus, and R. Yates, IEEE Vehicular Technology Conference 2000, May 2000, Tokyo

45. *Bounds on File Delivery Delay in an Infostations System*, A. Iacono and C. Rose, IEEE Vehicular Technology Conference 2000, May 2000, Tokyo.

46. *Interference Avoidance, Sum Capacity and Class Warfare*, C. Rose, CISS 2000, March 2000, Princeton.

47. *Interference Avoidance and Dispersive Channels: a new look at multicarrier modulation*, D. Popescu and C. Rose, 37^{th} Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, Illinois, Sept. 1999.

48. *The Use of Extended Kalman Filter for Emitter Localization in a Multipath Environment*, D. Popescu and C. Rose, pp147–150, CISS'99, Baltimore.

49. *Wireless Subscriber Mobility Management using Adaptive Individual Location Areas for PCS Systems*, Z. Lei and C. Rose, ICC'98.

50. *Location Area Design Using Population and Traffic Data*, C. Saraydar and C. Rose, CISS'98, Princeton.

51. *A Probability Criterion Based Location Tracking Method*, Z. Lei and C. Rose, Proceedings of Globecom 97, Nov 2-8 1997, Phoenix AZ v. 2, pp. 977-981

52. *Optimum Power Scheduling for CDMA Access Channels*, A. Yener, C. Rose and R.D. Yates, Proceedings of Globecom 97, Nov 2-8 1997, Phoenix AZ v.3, pp. 1499-1503

53. *Location Uncertainty in Mobile Networks: a theoretical framework*, Christopher Rose & Roy Yates, IEEE/VTC'97, Phoenix, pp.597–601 April (1997).

54. *Soft Dropping Power Control*, R. Yates, S. Gupta, C. Rose & S. Sohn, IEEE/VTC'97, Phoenix, pp.1694–1698, April (1997).

55. *Minimizing the Paging Channel Bandwidth for Cellular Traffic*, C. Saraydar & C. Rose, ICUPC'96, Boston, pp. 941–945, October (1996) MA.

56. *A Greedy Method of State-Based Registration*, C. Rose, ICC'96, Dallas, pp. 1158–1162, June (1996)

57. *Ensemble Polling Strategies for Mobile Communication Networks*, C. Rose & R. Yates, IEEE VTC'96, Atlanta, pp. 101–105, April (1996).

58. *Paging Strategies for Highly Mobile Users*, A. Yener & C. Rose, pp. 1839–1842, IEEE VTC'96, Atlanta, GA, 4/96.

59. *Minimization of Paging and Registration Costs Through Registration Deadlines*, C. Rose, IEEE ICC'95, Seattle, pp.735–739, June, 1995.

60. *Packet Arrival Scheduling at an Exponential Server for Minmax Blocking*, R. Yates & C. Rose, IEEE ICC'95, Seattle, pp.798–802, June, 1995.

61. *Paging Cost Minimization Under Delay Constraints*, C. Rose & R. Yates, IEEE Infocom'95, Boston, pp.490–495, April 1995.

62. *Local Call Admission Policies for Cellular Networks Using Genetic Algorithms*, A. Yener & C. Rose, Conference on Information Science and Systems (CISS'95), Baltimore, pp.25–30, March 1995.

63. *Near-Optimal Call Admission Policies fro Cellular Networks Using Genetic Algorithms*, A. Yener & C. Rose, IEEE Wireless'94, Calgary, pp.398–410, July 1994.

64. *Resource Allocation for Wireless Networks*, J. MacLellan & C. Rose, VTC'94, Stockholm, pp804–808, June 1994.

65. *Scheduling Arrivals to Queues for Minmax Blocking: the S(n)/M/1/C system*, R. Yates & C. Rose, Conference on Information Science and Systems (CISS'94), Princeton, pp.1047–1050, March 1994.

66. *Calculating Cellular Network Performance Using Queueing Methods*, J. MacLellan & C. Rose, Conference on Information Science and Systems (CISS'93), Baltimore, pp.101–106, March 1993.

67. *A Dielectric-Free Superconductive Coaxial Cable*, C. Rose, AAAS Annual meeting, San Francisco, January, 1990.

68. *A Minimum Distance Automata in Parallel Networks for Optimum Classification*, J.H. Winters & C. Rose, INNS Annual Meeting, San Diego, June, 1987.

Invited

1. *Hide and Seek on a Budget*, C. Rose, Information Theory and Applications, San Diego, May, 2022

2. *Finest-Grain Molecular Communication*, C. Rose, NSF Workshop on Biology Through Information Communication and Coding Theory, Alexandria, January 2020

3. *Communicating Using Molecules*, C. Rose, Northeastern University ECE, Boston, October, 2019

4. *High Speed Chemical Vapor Communication Using Photoionization Detectors*, M. Ozmen, E. Kennedy, J. Rose, P. Shakya, J.K. Rosenstein & C. Rose Information Theory and Applications, San Diego, February, 2019

5. *Conversations With Chemicals: memory and computing without long oligomers*, C. Rose Information Theory and Applications, San Diego, February, 2018

6. *Die-Particle-Die vs. Wait-Receiver-Wait: molecular communication with finite symbol intervals*, C. Rose & N. Farsad, 15^{th} Canadian Workshop on Information Theory: special track on biological information theory, Quebec City, June 11-14, 2017

7. *What Did the Proton Say to the Electron?*, C. Rose & S. Alexander, Information Theory and Applications, San Diego, February, 2017

8. *A Fundamental Approach to Communication using Individual Molecules*, C. Rose, Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, November 6-9 2016

9. *Fundamental Limits of Molecular Communication*, C. Rose, IEEE Communications Theory Workshop, Napflio, Greece, May 2016

10. *Write, Don't Radiate*, C. Rose, Breakthrough Initiatives, Stanford, April 15-16, 2016

11. *THz Wireless, Undulating Surfaces and Disco Balls*, C. Rose Information Theory and Applications, San Diego, February 1-5, 2016

12. *Can We Get Energy On Target in THz Wireless Networks?*, C. Rose Workshop on Cognition and Control, Gainesville, FL January 14-15, 2016

13. *THz Wireless: whither mobility and connectivity*, C. Rose Keck Symposium for TeraHz Communication and Imaging, Rice University, Houston, November 6, 2015,

14. *A Framework for Molecular Communication*, C. Rose and I.S. Mian, Information Theory and Applications, San Diego, February 2015

15. *Molecular Communication Using Timing & Payload*, C. Rose and I.S. Mian, C^2 Workshop, Gainesville, January 2015

16. *The Unreasonable Efficiency of Messages in Bottles*, C. Rose & G. Wright, Dartmouth Physics and Astronomy Public Lecture, November 2014

17. *Write to Survive, Read the Signs*, C. Rose, Communication Theory Workshop, Phuket, June 2013

18. *Is Reality an Error Correcting Code?*, C. Rose and S.J. Gates, Information Theory and Applications, San Diego, February 2013

19. *Research Is Just Plain Curiosity (with a dab of math)*, C. Rose, Rutgers Northern New Jersey Junior Science and Humanities Symposium, Piscataway, NJ, March 2012.

20. *Communication Using Identical Tokens*, C. Rose, Information Theory and Applications, UC San Diego, February 2012

21. *Write or Radiate*, C. Rose, CSEE Seminar, University of Maryland Baltimore County, December 9, 2011

22. *Write or Radiate*, C. Rose, *Lunch Bunch* Seminar, California Institute of Technology, October 25, 2011

23. *A World of Bits: communication theory and multi-element physical systems*, C. Rose, Information Theory and Applications Workshop, UC San Diego, February 2011

24. **Panelist:** OZMA at 50 Workshop, Greenbank, West Virginia, September 2010

25. **Plenary Panel:** IEEE Communications Theory Workshop, Cancun, May 2010

26. A World of Bits? communications theory as a lens on everything, Ozyegin University, Istanbul, October 2009.

27. **Keynote Address:** *Building a Community of Leaders and Laureates*,Massachusetts Institute of Technology Inaugural Laureates and Leaders Celebration, Cambridge, February 2009

28. NSF Workshop on Molecular Communication: Biological Communications Technology, Arlington, February 2008

29. **Keynote Address:** *ET Might Write, Not Radiate*, C. Rose & G. Wright, Alberta Informatics Circle of Research Excellence, iCORE Summit, May 2006

30. *ET Might Write, Not Radiate: messages in grains of sand?*, C. Rose & G. Wright, British Interplanetary Society Space Archaeology Conference, May 2006 London

31. *ET Might Write, Not Radiate*, C. Rose & G. Wright, Princeton University EE Seminar Series March 2006

32. *ET Might Write, Not Radiate*, C. Rose & G. Wright, Lawrence Berkeley National Laboratory, World Year of Physics seminar series, July 25, 2005

33. *Why ET Might Write, Not Radiate*, C. Rose & G. Wright, General Motors Wireless Networking Communications Seminar, UT Austin, February 25, 2005

34. *Why ET Might Write, Not Radiate*, C. Rose & G. Wright, Electrical Engineering Seminar, UT San Antonio, February 24, 2005

35. *ET Might Write, Not Radiate: inscribed matter vs. electromagnetic channels* , C. Rose & G. Wright, Telcordia Applied Research Midnight Seminar Series, December 16, 2004.

36. *Will ET Write or Radiate: inscribed mass vs. electromagnetic channels* , C. Rose & G. Wright, Asilomar'04, Pacific Grove November 7, 2004.

37. *ET Might Write Not Radiate*, C. Rose & G. Wright, DIMACS Workshop On Theoretical Advances In Information Recording, Piscataway, March 25, 2004.

38. *Write or Radiate? Inscribed Mass vs. Electromagnetic Channels*, C. Rose, Lucent Laboratories, Crawford Hill, October 21, 2003.

39. *Multiuser MIMO Systems and Interference Avoidance*, D.C. Popescu, O. Popescu and C. Rose, Proceedings 2003 IEEE International Conference on Acoustics, Speech, and Signal Processing - ICASSP'03, vol. IV, pp. IV-828 - IV-831, April 6-10 2003, Hong Kong.

40. *Interference Avoidance in Wireless Systems*, C. Rose, DIMACS Workshop on Signal Processing for Wireless Transmission, Piscataway, October 7–9, 2002

41. *Interference Avoidance, Infostations and Economics*, briefing for the FCC Technology Advisory Council, Washington D.C., September 18, 2002.

42. *Interference Avoidance*, D. Popescu & C. Rose, Wiley Encylopedia of Telecommunications, J. Proakis, Ed., Wiley, 2002

43. *Paging and Registration in Mobile Networks*, C. Rose, Wiley Encylopedia of Telecommunications, J. Proakis, Ed., Wiley, 2002

44. **Keynote Address:** *In Wireless Data Networks, Patience Has Its Rewards*, IEEE MWCN, August, 2001, Recife, Brazil

45. **Invited Tutorials:**

    - *Molecular Communication: System Models, Fundamental Limits, and Experimental Implementations*, N. Farsad and C. Rose, WCNC'17, San Francisco, March 2017.

- *Wireless Communications 101 + New Paradigms*, IEEE MWCN 2001, Recife, Brazil, August 2001
- *A Theoretical Tour of Wireless Communications* C. Rose, Center for Discrete Mathematics, Rutgers University, July 2000.

46. *Wireless Data: patience has its rewards*, IEEE CCW, October 18, 2000, Isla Captiva FL

47. *Infostations: a new paradigm for wireless data*, Nokia Research Center, August 2000 Dallas

48. *MINE MINE MINE: Information Theory, Infostation Networks and Resource Sharing*, A. Iacono and C. Rose, WCNC 2000, September 2000, Chicago.

49. *Infostations, Interference Avoidance and the Future of Wireless Data*, Georgia Institute of Technology, October 2, 2000

50. *Sum Capacity and Interference Avoidance: convergence via class warfare*, C. Rose, CISS 2000, Princeton, March 2000.

51. *Interference Avoidance for Hoards of Things*, C. Rose, NASA Glenn Research Center, October, 1999.

52. *Interference Avoidance in Wireless Systems: everything old seems new again*, C. Rose, AT&T Newman Springs Seminar, October, 1999.

53. *A Theory of Interference Avoidance*, Georgia Tech ECE Seminar, Atlanta, Fall 1998

54. *Optimum Power Schedules for CDMA Access Channels*, A. Yener, C. Rose & R. Yates, INFORMS'98, Montreal.

55. *New Wrinkles in Resource Allocation: Infostations and the U-NII*, DIMACS Workshop on Networks in Distributed Computing, October, 1997.

56. *Paging and Tandem Queues with Reneging*, C. Rose & C. Saraydar, ORSA INFORMS'97.

57. *Location Uncertainty in Mobile Networks: a theoretical framework*, C. Rose & R. Yates IEEE Communications Magazine, 35(2), pp.94–101, Februrary (1997)

58. *Signaling Cost and Location Uncertainty in Mobile Communications Systems: Glimmerings of a Theory ... or Why Information Theory, the Lingua Franca of Uncertainty, Won't Help You Find Mobile Users*, Stanford University, June 1996

59. *Polling Queue Disciplines for Paging*, ORSA-INFORMS, Spring 1996

60. *Decision-Making in Telecommunications Systems Using Genetic Algorithms*, NYNEX, January 1995.

61. *Survival in Graduate School: a perspective from both sides of the fence*, Eta Kappa Nu induction banquet address, Rutgers University, November 1994.

62. *Paging and Registration Schemes in Mobile Communications Systems*, Rose, C., ITC Miniconference, Ottawa, Quebec Province, Canada, October 1994.

63. *User Location Probability and Paging/Registration Methods in Mobile Mommunications Systems,* RUTCOR at Rutgers University, October 1994.

64. *A New Approach to Paging and Registration in Mobile Communications Systems*, Bellcore, Middletown, N.J., September 1994.

65. *Paging Registration and Time-Varying User Location Probability*, Rose, C., IEEE Miniconference, George Mason University, Fairfax VA, Sept 9, 1994.

66. *Genetic Algorithms and the Search for Good Call Admission Policies: Recent Results*, sponsored by D. Mitra, AT&T Bell Laboratories, July 1994.

67. *Genetic Algorithms and the Search for Good Call Admission Policies*, RUTCOR at Rutgers University, April 1994.

68. *Wireless Communications Systems: new research challenges*, American Physical Society annual meeting, March 1994.

69. *Genetic Algorithms and Call Admission in Telecommunications Networks,* ORSA-TIMS, Phoenix, December 1993.

70. *Rapid Optimal Scheduling For TDMA Switches,* Princeton University, April 1990.

71. *A Dielectric-Free Superconductive Coaxial Cable,* University of Lowell, Lowell Massachusetts, February, 1990.

72. *Rapid Optimal Scheduling For TDMA Switches Using a Cellular Automaton,* Brooklyn Polytechnic Institute, Brooklyn, N.Y., April, 1987.

Other Publications

1. *Interference Avoidance and Asynchronous CDMA Systems* , D.C. Popescu and C. Rose, Winlab Technical Report TR 220, March 2002
2. *Application of Interference Avoidance to Fading Channels*, D.C. Popescu and C. Rose, Winlab Technical Report TR 215, October 2001
3. *Multibase Systems: Maximizing Sum Capacity and Interference Avoidance*, O. Popescu and C. Rose, Winlab Technical Report TR 213, August 2001
4. *Multibase Systems: Minimizing total Square Correlation and Interference Avoidance*, O. Popescu and C. Rose, Winlab Technical Report TR 212, July 2001
5. *Interference Avoidance for Sum Capacity Optimization in Multiple Antenna Systems*, D.C. Popescu and C. Rose, Winlab Technical Report TR 211, July 2001
6. *Multiple Antenna Systems and Interference Avoidance*, D.C. Popescu and C. Rose, Winlab Technical Report TR 206, March 2001
7. *Multiaccess Dispersive Channels and Interference Avoidance* D.C. Popescu and C. Rose, Winlab Technical Report TR 204, December 2000
8. *Analysis of Codeword Quantization Effects on Performance of Interference Avoidance Algorithms*, D.C. Popescu and C. Rose, Winlab Technical Report TR 197, January 2000
9. *Interference Avoidance and Dispersive Channels: a new look at multicarrier modulation* D. Popescu and C. Rose, Winlab Technical Report TR 188, September 1999
10. *Convergence of Greedy Interference Avoidance and Sum Capacity Maximization*, C. Rose Winlab Technical Report TR 187 October 1999
11. *Interference Avoidance in Wireless Systems*, Christopher Rose, Sennur Ulukus, Roy Yates, Winlab Technical Report TR 175, February 1999,
12. *The Use of Extended Kalman Filter for Emitter Localization in a Multipath Environment*, Dimitrie C. Popescu and Christopher Rose, Winlab Technical Report TR 180, April 1999
13. *Minimizing File Delivery Delay in an Infostations Systems*, Ana Lucia Iacono and Christopher Rose, Winlab Technical Report TR 167, August 1998
14. *Optimal Routing Schemes for a Simplified Packet Radio Network*, Kabir Kasargod and Christopher Rose, Winlab Technical Report TR 164, May 1999
15. *One-Dimensional Location Area Design*, Cem U. Saraydar, Owen Kelly, Christopher Rose, Winlab Technical Report TR 161, June 1998,

16. *Selection of Good Location Areas from Population and Traffic Data*, C. U. Saraydar and C. Rose, Winlab Technical Report TR 150, May 1997,

17. *Optimum Power Scheduling for CDMA Access Channels*, Aylin Yener , Christopher Rose , Roy D. Yates, Winlab Technical Report TR 148, April 1997

18. *Soft Dropping Power Control*, Roy Yates, Sorabh Gupta, Christopher Rose, Surgwon Sohn Winlab Technical Report TR 146, March 1997

19. *Wireless Subscriber Location Tracking for Adaptive Mobility Management*, Z. Lei & C. Rose, Winlab Technical Report TR 131, (1996).

20. *Toward A Fundamental Theory of Mobility Management*, C. Rose & R. Yates, Winlab Technical Report TR 128, (1996).

21. *Minimizing Paging Channel Bandwidth for Cellular Traffic*, C.U. Saraydar & C. Rose, Winlab Technical Report TR 125, (1996).

22. *Genetic Algorithms Applied to Cellular Call Admission: Local Policies*, A. Yener and C. Rose, Winlab Technical Report TR 112, (1995).

23. *Analysis of a Mobile Assisted Adaptive Location Management Strategy*, R. Yates & C. Rose, Winlab Technical Report TR 111, (1995).

24. *Strategies for Page Request Queueing in Mobile Communications Networks*, C. Rose & R. Yates, Winlab Technical Report TR 110, (1995).

25. *Highly Mobile Users and Paging: optimal polling strategies*, C. Rose & A. Yener, Winlab Technical Report TR 109, (1995).

26. *Near-Optimal Call Admission Policies for Cellular Networks Using Genetic Algorithms*, A. Yener & C. Rose, Winlab Technical Report TR 108, (1995).

27. *State-Based Paging/Registration: A Greedy Approach*, C. Rose, Winlab Technical Report TR 92, (1995).

28. *Scheduling Arrivals at a Single Server for Min-max Blocking*, R. Yates & C. Rose, Winlab Technical Report TR 86 (1994).

29. *Scheduling Arrivals to Queques for Minimum Average Blocking: the S(n)/M/C/C system*, C. Rose & R. Yates, Winlab Technical Report TR 85 (1994).

30. *Genetic Algorithms and Call Admission to Telecommunications Networks*, C. Rose & R. Yates, Winlab Technical Report TR 84 (1994).

31. *Minimizing the Average Cost of Paging and Registration: a timer-based method*, C. Rose, Winlab Technical Report TR 83 (1994) (submitted for publication).

32. *Minimizing the Average Cost of Paging Under Delay Constraints*, C. Rose & R. Yates, Winlab Technical Report TR 82 (1994).

33. *Scheduling Arrivals for Min-max Blocking*, R. Yates, & C. Rose, (1994).

34. *Analysis and Simulation of Wireless Network Performance Using Queueing Models*, J. MacLellan & C. Rose, Winlab Technical Report TR 61 (1993).

35. *Optimal Call Admission to Single Cells of a Cellular Mobile Network*, C. Rose & R. Yates, Winlab Technical Report TR 60 (1993).

36. *Mobility Analysis of Call Records in a Cellular Switch*, R. Yates & C. Rose, Winlab Technical Report TR 59, (1993).

Grants

($1.5M) *SemiSynBio-II: Hybrid Biofilm Semiconductor Information Systems* National Science Foundation DMR-2027108, PI: J. Rosenstein, co-PIs: S. Reda, C. Rose & B. Rubenstein

($300k) *EAGER: Synthetic Chemical-Based Information Processing*, National Science Foundation CCF-1941344, PI: S. Reda, co-PIs: E. Kim, C. Rose, J. Rosenstein & B. Rubenstein

($4.2M) *Chemical CPUs: Chemical Computational Processing via Ugi Reactions*, DARPA Molecular Informatics W911NF-18-2-0031, December 15, 2017 – December 14, 2020, PIs: B. Rubenstein, J. Rosenstein, co-PIs: E. Kim, S. Reda, C. Rose, J. Sello & P. Weber

($573,380) *DARPA SEEDLING: Intelligent Chemical Sensor Networks*, HR00111720048, June 1, 2017 - May 31, 2018, PI: J. Rosenstein, co-PI: C. Rose

($50,000) *Communication Theory for Chemical Sensing Networks*, Brown University Seed Award, January-December 2017, PI: J. Rosenstein, co-PI: C. Rose

($650,000) *DARPA Spectrum Challenge*, 2012-2014, PI: W. Trappe, co-PIs: C. Rose and I. Seskar

($20,342) National Academy of Sciences Keck Futures Initiative, 2010-2011, *Agent-Based Modeling of Functional Behavior Selection in the Mouse*, PI: S. Bonasera (UNMC), co-PIs: C. Rose and S. Mian (LBNL)

($740,000) National Science Foundation CDI-0835592, *CDI Type I: A Communications Theory Approach to Morphogenesis and Architecture Maintenance*, PI: C. Rose, co-PI: I.S. Mian (LBNL)

($50,000) National Science Foundation CNS-0716400, *TRIESTE: A Trusted Radio Infrastructure for Enforcing Spectrum Etiquettes*, PI: W. Trappe, co-PIs: C. Rose and Y. Zhang.

($99,422) National Science Foundation CCF-0703708, *SGER: Communications Theory & Multicellular Biology* PI: C. Rose, co-PI: I.S. Mian (LBNL)

($1,200,000) National Science Foundation CNS-0434854, *NeTs-ProWin: High Performance Cognitive Radio Platform with Integrated Physical and Network Layer Capabilities*, PI: B.D. Ackland, co-PIs: M.L. Bushnell, D. Raychaudhuri, C. Rose and T. Sizer

($670,000) National Science Foundation CNS-0435370, *NeTs Pro-Win: Cognitive Radios for Open Access to Spectrum*, PI: N. Mandayam, co-PIs: C. Rose P. Spasojevic and R.D. Yates.

($886,411) National Science Foundation CCR 02-05362, *ITR Collaborative Research: Achieving Innovative and Reliable Services in Unlicensed Spectrum*, PI: R. Yates, co-PIs: N. Mandayam, C. Rose, D. Raychaudhuri, P. Spasojevic

($857,000) National Science Foundation CCR 00-85986, *ITR: Collaborative Research: 'Free' Bits: The Challenge of the Wireless Internet.*, PI: R. Yates, co-PIs: N. Mandayam, C. Rose,

($430,000) National Science Foundation CCR 99-73012, *Interference Avoidance in Wireless Systems*, PI: C. Rose, co-PI: R.D. Yates

($5,000) National Science Foundation CCR 98-14104, *A Workshop to Study Peaceful Coexistence in the Unlicensed National Information Infrastructure*, PI: C. Rose, co-PI: A. Ogielski, D. Goodman

($1,250,000) New Jersey Commission on Science and Technology, *New Jersey Center for Wireless Technology (99-2042-007-17)*, PIs: N. Mandayam, C. Rose, R. Yates.

($170,000) National Science Foundation NCR 97-29863 *Parallel Computing for Wireless Networking Research*, PI: D.J. Goodman co-PIs: N.B. Mandayam, A.T. Ogielski, C. Rose, R.D. Yates

($20,000) *Genetic Algorithms and the Control of Wireless Telecommunications Systems*, AT&T Laboratory Improvement Grant, Fall, 1995.

($469,897) National Science Foundation 95-06505 NCRI, 1/96–1/99 *Power Control and Packet Radio Networks*, PI: R. Yates, co-PI: C. Rose.

($412,456) National Science Foundation 92-06148 NCRI, 9/92–9/95, *Searching for Good Call Admission Policies in Telecommunications Networks*, PI: C. Rose, co-PI: R. Yates.

($100,000) Startup funds from Rutgers University, 9/1/90

($15,000) Henry Rutgers Research Fellowship 9/1/90

($50,000) Cummulative equipment donations from AT&T Bell Laboratories

Graduate Students

Completed Doctoral Students

- John MacLellan (1994) *Methods of Resource Allocation in Cellular Networks Using An Underlying Queueing Model* (Rutgers)
- Ana-Lucia Iacono (2000) *Information Delivery in an Infostation Network* (Rutgers)
- Dimitrie Popescu (2002) *Interference Avoidance for Wireless Systems* (Rutgers)
- Otilia Popescu (2004) *Interference Avoidance for Wireless Systems with Multiple Receivers* (Rutgers)

- Jasvinder Singh (2007) *Resource Allocation in Coordinated and Uncoordinated Wireless Systems with Greedy or Non-Greedy Users* (Rutgers)

Completed Masters Students

- Aylin Yener (1994) *Genetic Algorithms and Call Admission in Cellular Systems* (Rutgers)
- Zhuyu Lei (1996) *Wireless Subscriber Location Tracking for Adaptive Mobility Management* (Rutgers)
- Kenyon Wells (1997) *A Hardware Testbed for Genetic Algorithms* (Rutgers)
- Cem Saraydar (1997) *Deriving Optimal Location Areas from Measured Vehicular Traffic* (Rutgers)
- Kabir Kasargod (1999) *Routing in Simple Packet Radio Networks* (Rutgers)
- David Tabora (2001) *Covariance Estimation, Feedback Channel Analysis and Multiple Base Performance of Interference Avoidance* (Rutgers)
- Furuzan Atay (2003) *Exploiting Mobility in Mobile Ad-Hoc Networks: a packet-eye view*, (Rutgers)
- Neville Clemens (2006) *Intelligent Power Allocation Strategies in an Unlicensed Spectrum* , (Rutgers)
- Ruochen Song (2009) *Intercellular Chemical Diffusion Channel Capacity* ("MS Paper", Rutgers)
- YiLin Tsai (2010) *MIMO Poer Strategies for Limited Transmitter CSI* ("MS Paper", Rutgers)
- Aaron Ray (2019) *State Estimation for Dynamic Relative Localization Systems* (Brown)

University Activities

Member, AVP Institutional Equity and Diversity Search Committee, Spring 2022

Member, Deputy Dean of the College Search Committee, Spring 2022

Member, Dean of Engineering Search Committee, Fall 2021

Member, VP Institutional Equity and Diversity Search Committee, Spring 2021

Member, Dean of the College Search Committee, Spring 2018

Member, SoE Photonics Search Committee, Winter/Spring 2017/18

Member, Vice President for Institutional Equity & Diversity Search Committee, Summer/Fall 2017

Speaker, Parents' Weekend Faculty, Fall 2016

Chair, Provost's Visiting Professor Program (2016 – 2021)

Member, Dean of Admissions Search Committee, Spring 2016

Member, Diversity and Inclusion Oversight Board, (2016 –)

Member, SoE Research Administration Hiring Committee, Fall 2016

Member, Director Search Committee, Catalyst Program, Fall 2015

Faculty Advisor: NSBE (2015 –)

Chair, Thinking Out Loud Presidential Colloquium Series (2014–)

ISP: Some Lifestories of Current Successful HUG Scientists and Engineers (Spring 2016)

Meicklejohn (co)Advisor for Brandon Burke ’19

Class of ’26 Frosh Advisor

- Joshua Dantus
- Ann-Taneshia Frater
- Z Jian Nava Chen
- Patrick O’Neill
- Jesus Rodriguez
- Everett Skillern
- Qizhi Sun

Class of ’25 Frosh Advisor

- Yuilianna Cruz-Trinidad
- Brian Delgado
- Nancy Gramajo-Reyes
- Nazaril Koval
- Jameson Peckham
- Angel Quinares

Class of ’24 Frosh Advisor

- Natalee Amhaz
- Shailyn Castro
- Jaiden Ditimus
- Edrick Guerrero
- Omar Orozco
- Stephen Rosa

Class of ’23 Frosh Advisor

- Ricky Cabanillas

- Michael Chung
- Dhiraj Khanal
- Atabong Khumbah
- Harriet Muutu
- Arius Thomas
- Nondi Walters

Class of ’22 Frosh Advisor

- David Boles
- Aidan Cassel-Mace
- Michael Chen
- Mark Lavrentyev
- Elliot Laidlaw
- Stephen Sun

Class of ’21 Frosh Advisor

- Zayn Biviji
- Nathan Brown
- Desmond Cambridge
- Griffin Kupshaw
- Pongphol Harrinsuit
- Tomi Madarikan
- Laxman Soni
- Mert Tavukcuoglu

Class of ’20 Frosh Advisor

- Monica Alves
- Jarod Boone
- Jocelyn Cervantes
- Victor Loolo
- Varun Mathur
- Jillian Turner

Professional Activities

Presidential Colloquium Series Chair: *Thinking Out Loud*, Brown University, 2014–
`http://brown.edu/thinking-out-loud`

Policy Advisement: *Army Science Board*, Member 2012–2014

Policy Advisement: *Interference Avoidance, Infostations and Economics*, C. Rose, FCC Technological Advisory Council II, September 2002.

Seminar Series Co-Chair: *DIMACS Focus on Computational Information Theory And Coding*, S. Verdu & C. Rose, Rutgers University Center for Discrete Mathematics, 2002-2003.

Keynote Address: *In Wireless Data Networks, Patience Has Its Rewards*, IEEE MWCN 2001, Recife, Brazil, August 2001

Tutorial Instructor:

- *Molecular Communication: System Models, Fundamental Limits, and Experimental Implementations*, N. Farsad and C. Rose, WCNC'17, San Francisco, March 2017.
- *Wireless Communications 100 + New Paradigms*, IEEE MWCN 2001, Recife, Brazil, August 2001
- *A Theoretical Tour of Wireless Communications* C. Rose, Center for Discrete Mathematics, Rutgers University, July 2000.

Conference Activities:

- **Co-Chair Molecular Computing:** NSF Workshop on Biologically-Enabled Wireless Networks. Arlington, July 2011
- **Panelist:** OZMA at 50 Workshop, Greenbank, West Virginia, September 2010
- **Plenary Panel:** IEEE Communications Theory Workshop, Cancun, May 2010
- **Invited Speaker:** A World of Bits? communications theory as a lens on everything, Ozyegin University, Istanbul, October 2009.
- **Invited Speaker:** NSF Workshop on Molecular Communication: Biological Communications Technology, Arlington, February 2008
- **Organizer:** WINLAB Workshop on Unlicensed Spectrum, Piscataway, November 2003
- **General Chair:** ACM MobiCom 2001, Rome, July 2001
- **Co-Chair:** Berkeley/WINLAB Focus 2000 on PicoRadio Networks, Berkeley (June, 2000)
- **Co-Chair:** WINLAB/Berkeley Focus'99 on Radio Networks for Everything, New Brunswick, NJ (May, 1999)
- **Co-Chair:** WINLAB Focus'98 on the U-NII, Long Branch, NJ (June, 1998).

- **Technical Program Committee Co-Chair:** ACM MobiCom'97, Budapest, September, 1997.
- **Technical Committee Memberships:**
  - IEEE Globecom MBMSC 2021
  - IEEE ICC SAC-7 MBMC 2020
  - IEEE Globecom MBMSC 2019
  - ACM NanoCom 2019
  - IEEE ICC SAC-8 MBMSC 2019
  - IEEE Globecom-SAC-MBMSC 2018
  - IEEE Globecom-SAC-MBMSC 2017
  - IEEE ICC SAC-8 MBMSC 2017
  - IEEE Globecom-SAC-MBMSC 2016
  - ACM Nanocomm 2016
  - ACM Nanocomm 2015
  - ACM Nanocomm 2014
  - IEEE Infocom MoNaComm 2011
  - IEEE VTC Fall 2005
  - ACM VANET 2004
  - IEEE MWCN 2003
  - ACM MobiCom 2003
  - IEEE Infocom 2003
  - IEEE Globecom 2002: Internet Performance Symposium
  - ACM MobiCom 2002: Wireless Sensor Networks Workshop
  - IEEE MWCN 2002
  - IEEE MWCN 2001
  - ACM MobiCom 2000
  - IEEE MMT'98
  - ACM MobiCom'98
  - IEEE Infocom'98
  - IEEE MMT'97
  - ACM MobiCom'96

International Visiting Committee: Portuguese Foundation on Science and Technology nation-wide engineering program assessment, (December, 1999, 2003).

New Jersey Commission on Science and Technology: Scientific Fields Committee Advisory Group.

Consultant: Wireless Communications (industry/venture capital/legal)

Executive Committee: ACM SIGMobile (1997-2000)

Conference Steering Committee: ACM MobiCom, ACM SIGMobile WoWMoM

Editorial Activities

- **Editorial Board Member:** Entropy 2023 –
- **Senior Editor:** IEEE Journal on Selected Areas in Communication 2016-2022
  - **Shepherd:** IEEE JSAC Special Issue on Edge-Based Wireless Communications Technologies to Counter Communicable Infectious Diseases (2021/22)
  - **Shepherd:** IEEE JSAC Special Issue on Integrated Sensing and Communication (2020/21)
  - **Shepherd:** IEEE JSAC Special Issue on Wireless Networks Empowered by Reconfigurable Intelligent Surfaces (2019/20)
  - **Shepherd:** IEEE JSAC Special Issue on Human-In-The-Loop Mobile Networks (2017)
  - **Shepherd:** IEEE JSAC Special Issue on Localization Awareness (2015)
- **Steering Committee:** IEEE Journal Molecular, Biological, and Multi-Scale Communications Series
- **Editor:** IEEE JSAC Molecular, Biological, and Multi-Scale Communications Series
- **Editor:** IEEE Transactions on Vehicular Technology
- **Editor:** ACM Wireless Networks
- **Editor:** Elsevier Pervasive and Mobile Computing
- **Guest Editor:** ACM MONET, Special issue on mobility, November, 1996, ACM WINET, Selected Papers from Mobicom'97, December, 1999).

Panelist

- National Science Foundation, Arlington, Va.
- NRI/Ford Foundation Fellowship Selection Committee

Member: Institute of Electrical and Electronics Engineers (2007 Fellow)
Association for Computing Machinery