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

2003–: *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

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

AT&T Bell Laboratories Cooperative Research Fellowship, 1979–1985

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)

Current Research

Interference Avoidance, Mobility Management, Non-standard Communications Models, Biological Communication

Books

1. **Interference Avoidance Methods for Wireless Systems**, D. Popescu & C. Rose, Kluwer Academic Publishers (2004).

Journal Articles and Book Chapters

1. *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.

2. *Interference Avoidance and Multiaccess Vector Channels*, D. Popescu, O. Popescu & C. Rose, IEEE Transactions on Communications, 55(8), pp. 1466-1471, August 2007.

3. *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.

4. *Codeword Optimization for Uplink CDMA Dispersive Channels*, D. Popescu & C. Rose, IEEE Transactions on Wireless Communications, vol. 4(4), pp. 1563 - 1574, July 2005.

5. *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.

6. *Greedy SINR Maximization in Collaborative Multi-Base Wireless Systems*, O. Popescu & C. Rose, EURASIP Journal on Wireless Communications Networking (2) pp.201–209 (2004)

7. *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)

8. *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.

9. *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).

10. *Interference Avoidance and Multiuser MIMO Systems*, D. Popescu & C. Rose, International Journal of Satellite Communications, 21(1), pp.143–161, January (2003).

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

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

13. *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**

14. *CDMA Codeword Optimization: interference avoidance and convergence via class warfare*, IEEE Trans. Information Theory, 47(6), pp. 2368–2382, September (2001).

15. *Infostations: New Perspectives On Wireless Data Networks*, in **Next Generation Wireless Networks**, Editor: S. Tekinay, Kluwer Academic Publishers, May 2000.

16. *One Dimensional Location Area Design*, C.U. Saraydar, O.E. Kelly & C. Rose, IEEE Trans. Vehic. Tech 49(5) pp.1626–1632, September (2000).

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

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

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

20. *Ensemble Polling Strategies for Increased Paging Capacity in Mobile Communication Networks*, C. Rose & R. Yates, ACM Wireless Networks, 3(2), pp.159–167 (1997).

21. *Genetic Algorithms Applied to the Cellular Call Admission Problem: Local Policies*, A. Yener & C. Rose, IEEE Transactions on Vehicular Technology, 46(1), February (1997)

22. *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)

23. *Minimizing the Average Cost of Paging and Registration: a timer-based method*, C. Rose, ACM Wireless Networks, 2(2) pp.109–116, June (1996).

24. *Genetic Algorithms and Call Admission to Telecommunications Networks*, C. Rose & R. Yates, Computers and Operations Research, 23(5), pp.485–499, May (1996).

25. *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).

26. *Minimizing the Average Cost of Paging Under Delay Constraints*, C. Rose & R. Yates, ACM Wireless Networks, 1(2) pp.211–219, (1995).

27. *Mean Internodal Distance in Multihop Store & Forward Networks*, C. Rose, IEEE Transactions on Communications, 40(8), pp.1310-1318, (1992).

28. *Low Mean Internodal Network Topologies and Simulated Annealing*, C. Rose, IEEE Transactions on Communications, 40(8), pp.1319-1326, (1992).

29. *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).

30. *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).

31. *Rapid Optimal Scheduling for Time-Multiplex Switches Using a Cellular Automaton*, C. Rose, IEEE Transactions on Communications, 37(5), pp.500-509, (1989).

32. *Minimum Distance Automata in Parallel Networks for Optimum Classification*, J.H. Winters & C. Rose, Neural Networks, v.2, pp.127-132, (1989).

33. *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).

34. *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).

35. *A Comparison of Synchronization Filters in Different Auditory Receptor Organs*, T.F. Weiss & C. Rose, Hearing Research, 33, pp.175-179, (1988).

36. *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).

Refereed Conference Publications

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

2. *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.

3. *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.

4. *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.

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

6. *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.

7. *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

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

9. *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.

10. *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.

11. *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.

12. *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

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

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

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

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

17. *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.

18. *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

19. *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.

20. *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.

21. *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.

22. *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.

23. *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.

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

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

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

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

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

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

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

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

32. *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.

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

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

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

36. *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

37. *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

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

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

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

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

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

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

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

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

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

47. *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.

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

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

50. *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.

51. *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.

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

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

Invited

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

2. **Invited Speaker:** NSF Workshop on Molecular Communication: Biological Communications Technology, Arlington, February 2008

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

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

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

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

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

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

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

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

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

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

13. *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.

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

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

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

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

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

19. **Invited Tutorials:**

    - *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.

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

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

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

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

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

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

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

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

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

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

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

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

32. *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

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

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

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

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

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

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

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

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

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

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

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

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

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

46. *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

($20,342) National Academy of Sciences Keck Futures Initiative *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*, currently a founder and VP of Engineering, PacketStorm Communications, Inc.
- Ana-Lucia Iacono (2000) *Information Delivery in an Infostation Network*, currently a Senior Engineer at Interdigital, Inc.
- Dimitrie Popescu (2002) *Interference Avoidance for Wireless Systems*, currently an Assistant Professor at Old Dominion University
- Otilia Popescu (2004) *Interference Avoidance for Wireless Systems with Multiple Receivers*, currently lecturer at Old Dominion University and raising two absolutely brilliant boys
- Jasvinder Singh (2007) *Resource Allocation in Coordinated and Uncoordinated Wireless Systems with Greedy or Non-Greedy Users*, currently with Qualcomm Flarion Technologies

Completed Masters Students

- Aylin Yener (1994) *Genetic Algorithms and Call Admission in Cellular Systems*, currently an Assistant Professor at Penn. State Univ.
- Zhuyu Lei (1996) *Wireless Subscriber Location Tracking for Adaptive Mobility Management*,
- Kenyon Wells (1997) *A Hardware Testbed for Genetic Algorithms*, currently with AT&T
- Cem Saraydar (1997) *Deriving Optimal Location Areas from Measured Vehicular Traffic*
- Kabir Kasargod (1999) *Routing in Simple Packet Radio Networks*, currently with Qualcomm, Inc.

- David Tabora (2001) *Covariance Estimation, Feedback Channel Analysis and Multiple Base Performance of Interference Avoidance*, currently at Goldman Sach, Inc.
- Furuzan Atay (2003) *Exploiting Mobility in Mobile Ad-Hoc Networks: a packet-eye view*.
- Neville Clemens (2006) *Intelligent Power Allocation Strategies in an Unlicensed Spectrum*

University Activities

Presidents Council on Institutional Diversity and Equity

Departmental Committee on Teaching

University Committee on Recruitment Policy

ECE Scholastic Standing Committee

ECE Fund Raising Committee

Professional Activities

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:

- *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:

- **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 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)

Steering Committee: ACM MobiCom, ACM SIGMobile WoWMoM

Editorial Activities

- **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

Session Chairman

- 3G Wireless and Beyond, IEEE VTC Fall '03, Orlando, October 2003
- Modeling and Identification of Fading Channels, CISS 2000, Princeton, March 2000
- QoS in Wireless Networks, ACM WoWMoM'99, San Francisco, August 1999
- Mobility Management, Infocom'98, San Francisco, April 1998
- Mobile Paging and Tracking, ICUPC'96, Boston MA, October 1996
- Mobile Data, IEEE VTC, Stockholm, Sweden, June 1994

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