

## BIPLAB SIKDAR

Room No. 6034, JEC,  
Department of ECSE,  
Rensselaer Polytechnic Institute,  
Troy, NY 12180

ph: +1 518 276 6664  
fax: +1 518 276 4403  
email: [bsikdar@ecse.rpi.edu](mailto:bsikdar@ecse.rpi.edu)  
<http://networks.ecse.rpi.edu/~bsikdar>

### EMPLOYMENT

**Associate Professor**, Rensselaer Polytechnic Institute, Troy, NY, USA 07/2007 - Present.  
**Assistant Professor**, Rensselaer Polytechnic Institute, Troy, NY, USA 08/2001 - 06/2007.

### EDUCATION

**Ph.D**, Rensselaer Polytechnic Institute, Troy, NY, USA August 2001.  
**M. Tech**, Indian Institute of Technology, Kanpur, India May 1998.  
**B. Tech**, North Eastern Hill University, Shillong, India May 1996.

### EXPERIENCE

**Associate Professor**, Rensselaer Polytechnic Institute, Troy, NY, USA 7/2007 - Present  
**Assistant Professor**, Rensselaer Polytechnic Institute, Troy, NY, USA 8/2001 - 6/2007  
**Tan Chin Tuan Fellow**, Nanyang Technological University, Singapore 7/2005 - 9/2005  
**Étudiant Visitant (Visiting Student)**, INRIA, Rocquencourt, France 5/2000 - 8/2000  
**Research Associate**, Indian Institute of Technology, Kanpur, India 12/1997 - 6/1998  
**Summer Intern**, Department of Telecommunications, Calcutta, India 5/1995 - 7/1995

### RESEARCH INTERESTS

Computer Communication Networks: Protocols and Performance  
Wireless MAC Protocols  
Body area networks and information processing in embedded systems  
Network Security

### RESEARCH GRANTS

- Title:** *Multiple-Layer Modeling and Design of Wireless AdHoc Networks*, **Agency:** National Science Foundation, **Funds:** US\$ 160,000, **Duration:** 2009-2011, **Contribution:** 100%.
- Title:** *Biologically Motivated Models for Spatio-Temporal Behavior of Computer Networks: Performance, Growth and Pathological Behavior*, **Agency:** National Science Foundation, **Funds:** US\$ 402,000, **Duration:** 2004-2010, **Contribution:** 100%, (NSF CAREER Award)
- Title:** *WiMax Application Performance and System Simulation*, **Agency:** WiMax Forum, **Funds:** US\$ 227,000, **Duration:** 2006-2010, **Contribution:** 100%.
- Title:** *Community Wireless Networks for Last-Mile Broadband Interconnectivity: An Experimental Research Program*, **Agency:** National Science Foundation, **Funds:** US\$ 350,000, **Duration:** 2004-2008, **Contribution:** 50%.
- Title:** *Infrastructure Mesh Wireless Networks*, **Agency:** Intel Corporation, **Funds:** US\$ 205,000, **Duration:** 2004-2006, **Contribution:** 50%.

6. **Title:** *Scalable Online Network Modeling and Simulation*, **Agency:** Defense Advanced Research Project Agency (DARPA), **Funds:** US\$ 950,000, **Duration:** 2001-2004, **Contribution:** 25%
7. **Title:** *High Performance Robust Network Management: Theoretical Foundations and Practical Design Tools*, **Agency:** RPI, **Funds:** US\$ 50,000, **Duration:** 2002-2002, **Contribution:** 17%

## TEACHING AND CURRICULUM DEVELOPMENT

### 1. Courses Taught:

- (a) Broadband and Optical Networking
- (b) Computer Architecture, Networks and Operating Systems
- (c) Computer Communication Networks
- (d) Introduction to Engineering Design
- (e) Probability for Engineering Applications

### 2. Courses Developed (and Taught):

- (a) Modeling and Analysis of Computer Networks (Graduate)
- (b) Experimental Networking

## STUDENTS

### 1. PhD Graduated:

- (a) **Jun Peng:** 2004, Current Employment: Assistant Professor, University of Texas, Pan American.
- (b) **Fengji Ye:** 2005, Current Employment: Cisco systems, San Jose, CA.
- (c) **Hua Yang:** 2005, Current Employment: Intel Research Laboratories, Shanghai, China.
- (d) **Shivani Deshpande:** 2007, Current Employment: Packeteer Inc., San Jose, CA.
- (e) **Rajagopal Iyengar:** 2007, Current Employment: Posdata-USA, San Jose, CA..
- (f) **Krishna Ramachandran:** 2007, Current Employment: General Motors Research Laboratory, Bangalore, India.
- (g) **Haiming Yang:** 2008, Current Employment: Cisco systems, San Jose, CA.

### 2. MS Graduated: 4

### 3. PhD Current: 3

### 4. MS Current: 1

## HONORS AND AWARDS

1. Best Paper Award, IEEE GLOBECOM, New Orleans, LA, 2008.
2. Individual Contribution Award, WiMAX Forum, San Jose, CA, USA, 2008.
3. Teaching Excellence Award, School of Engineering, RPI, Troy, NY 2006.
4. Tan Chin Tuan Fellowship, Singapore, 2005.
5. National Science Foundation (NSF) CAREER Award, 2004.
6. Charles M. Close Doctoral Prize, RPI, Troy, NY
7. ECSE Departmental Service Award, RPI, Troy, NY
8. Founder's Award of Excellence, RPI, Troy, NY
9. Master Teaching Assistant, RPI, Troy, NY
10. Verifone Fellowship, IIT, Kanpur, India
11. State Scholarship, NEHU, Shillong, India
12. Eta Kappa Nu
13. Tau Beta Pi

## PROFESSIONAL ACTIVITIES

**Associate Editor:** IEEE Transactions on Communications (2008-Present).

**TPC Co-Chair:**

- IEEE GLOBECOM, Communications Software and Services Symposium, 2009.
- IEEE BROADNETS, Wireless Track, 2009.

**Panelist:** National Science Foundation.

**TPC member:** IEEE INFOCOM (2003, 2004, 2008, 2009), IEEE GLOBECOM (2002, 2005, 2007, 2008, 2009), IEEE VTC (2007), IEEE ICC (2005, 2008), ICMU (2004-2008), IEEE WCNC (2005, 2006).

**Journal Reviews:** IEEE Transactions on Computers, IEEE/ACM Transactions on Networking, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Transactions on Mobile Computing, IEEE Transactions on Signal Processing, IEEE Transactions on Vehicular Technology, IEEE Transactions on Multimedia, IEEE Transactions on Automatic Control, ACM Transactions on Sensor Networks, Computer Networks, Performance Evaluation, IEEE Communications Magazine, IEEE Communication Letters

**Conference Reviews:** IEEE INFOCOM, IEEE ICC, IEEE GLOBECOM, IEEE/IFIP MMNS, SPECTS, ICON, TRIDENTCOM, IEEE VTC, IEEE WSN, IEEE ISCC, ACM MSWIM, WiOpt

## PATENTS

1. **Network management and control using on-line collaborative simulations**, US Patent No. 7,363,285, April 2008, (with S. Kalyanaraman et al.).

## PUBLICATIONS

### Book Chapters

4. X. Long and B. Sikdar, "MAC and Routing Protocols for Vehicle to Vehicle Networks," *Automotive Informatics and Communicative Systems: Principals in Vehicular Networks and Data Exchange*, IGI Global, 2009.
3. R. Iyengar, K. Kar, B. Sikdar and X. Luo, "Scheduling Algorithms for OFDMA based WiMAX Systems with QoS Constraints," *WiMAX: Technologies, Performance Analysis and QoS, Part I: Technologies*, CRC Press, 2007.
2. S.Kalyanaraman and B.Sikdar, "Protocol Design Concepts, TCP/IP, and the Network Layer," *IP over WDM: Building the Next-Generation Optical Internet*, Sudhir Dixit (Editor), Wiley, April 2003.
1. B. Sikdar and K. S. Vastola, "On the Contribution of TCP to the Self-Similarity of Network Traffic," *Lecture Notes in Computer Science*, vol. 2170, pp. 596-613, 2001.

### Journals (under review)

12. X. Long and B. Sikdar, "A Mechanism for Detecting Session Hijacks in Wireless Networks," under review, *IEEE Transactions on Wireless Communications*.
11. B. Sikdar, "Transmission Strategies for Broadcasting in Infrastructure to Vehicle Communications," under review, *IEEE Transactions on Mobile Computing*.
10. A. Seyedi and B. Sikdar, "Energy Efficient Transmission Strategies for Body Sensor Networks with Energy Harvesting," under review, *IEEE Transactions on Wireless Communications*.
9. K. Ramachandran and B. Sikdar, "Dynamics of Malware Spread in Decentralized Peer to Peer Networks," under review, *IEEE Transactions on Dependable and Secure Computing*.

8. R. Iyengar and B. Sikdar, "A Queueing Model for Polled Service in WiMAX/IEEE 802.16 Networks," under review, *IEEE Transactions on Communications*.
7. X. Long and B. Sikdar, "Wavelet Based Detection of Shadow Fading in Wireless Networks," under review, *IEEE Transactions on Wireless Communications*.
6. K. Ramachandran and B. Sikdar, "Malware Propagation and its Equilibrium Stability in Cell Phone Networks with Spatial Dynamics," under review, *IEEE Transactions on Parallel and distributed Systems*.
5. B. Sikdar, "Queueing Analysis of Polling Service Classes in the IEEE 802.16 MAC Protocol," under review, *IEEE Transactions on Wireless Communications*.
4. K. Ramachandran and B. Sikdar, "A Population Based Approach to Model the Lifetime and Energy Distribution in Battery Constrained Wireless Sensor Networks." under review, *IEEE Journal on Selected Areas in Communications*.
3. B. Sikdar, "Medium Access Control in Vehicle to Roadside Networks," under review, *IEEE Transactions on Wireless Communications*.
2. F. Ye and B. Sikdar, "Improving Spatial Reuse of Wireless Ad-Hoc Networks Using Distance-Aware Virtual Carrier Sensing," under review, *IEEE Transactions on Wireless Communications*.
1. X. Long and B. Sikdar, "Wavelet Based Long Range Signal Strength Prediction in Wireless Networks," under review, *IEEE Transactions on Communications*.

#### **Journals (accepted and published)**

23. K. Ramachandran and B. Sikdar, "A Queueing Model for Evaluating the Transfer Latency of Peer to Peer Systems," Accepted for publication in *IEEE Transactions on Parallel and Distributed Systems*.
22. S. Deshpande, M. Thottan, T. Ho and B. Sikdar, "An Online Mechanism for BGP Instability Detection and Analysis," Accepted for publication in *IEEE Transactions on Computers*.
21. B. Stephenson and B. Sikdar, "A Quasi-species Model for the Propagation and containment of Polymorphic Worms," Accepted for publication in *IEEE Transactions on Computers*.
20. F. Ye, H. Yang, H. Yang and B. Sikdar, "A Distributed Coordination Scheme to Improve the Performance of IEEE 802.11 in Multi-hop Networks," Accepted for publication in *IEEE Transactions on Communications*.
19. J. Peng, B. Sikdar and L. Cheng, "Multicasting With Localized Control In Wireless Ad-Hoc Networks," *IEEE Transactions on Mobile Computing*, vol. 8, no. 1, pp. 52-64, January 2009.
18. G. Nagy and B. Sikdar, "Classification and Evaluation of Examples for Teaching Probability to Electrical Engineering Students," *IEEE Transactions on Education*, vol. 51, no. 4, pp. 476-483, November 2008.
17. H. Yang, F. Ye and B. Sikdar, "A Swarm Intelligence Based Protocol for Data Acquisition in Networks with Mobile Sinks," *IEEE Transactions on Mobile Computing*, vol. 7, no. 8, pp. 932-945, August 2008.
16. O. Tickoo and B. Sikdar, "Modeling Queueing and Channel Access Delay in Unsaturated IEEE 802.11 Random Access MAC Based Wireless Networks," *IEEE/ACM Transactions on Networking*, vol. 16, no. 4, pp. 878-891, August 2008.
15. S. Deshpande, M. Thottan and B. sikdar, "An Online Scheme for the Isolation of BGP Misconfiguration Errors," *IEEE Transactions on Network and Services Management*, vol. 5, no. 2, pp. 78-90, June 2008.

14. J. Peng, L. Cheng and B. Sikdar, "A Wireless MAC Protocol with Collision Detection," *IEEE Transactions on Mobile Computing*, vol. 6, no. 12, pp. 1357-1369, December 2007.
13. H. Yang, F. Ye and B. Sikdar, "Distributed Mobility Transparent Broadcasting in Vehicle to Vehicle Networks," *IEEE Transactions on Vehicular Technology*, vol. 56, no. 6, pp. 3289-3299, November 2007.
12. F. Ye, S. Yi and B. Sikdar, "Scaling of Spatial Reuse and Saturation Throughput in a Class of MAC Protocols," *IEEE Transactions on Wireless Communications*, vol. 6, no. 10, pp. 3529-3533, October 2007.
11. B. Sikdar, "An Analytic Model for the Delay in IEEE 802.11 PCF MAC based Wireless Networks," *IEEE Transactions on Wireless Communications*, vol. 6, no. 4, pp. 1542-1550, April 2007.
10. K. Chandrayana, S. Ramakrishnan, B. Sikdar and S. Kalyanaraman, "On Randomizing the Sending Times in TCP and other Window Based Algorithms," *Computer Networks*, vol. 50, no. 3, pp. 422-447, February 2006.
9. K. Ramachandran and B. Sikdar, "A Population Based Approach to Model Network Lifetime in Wireless Sensor Networks," *ACM Performance Evaluation Review*, vol. 33, no. 2, pp. 21-23, September 2005.
8. J. Peng and B. Sikdar, "An Efficient and scalable loss recovery scheme for video multicast," *IEEE Transactions on Multimedia*, vol. 7, no. 2, pp. 356-365, April 2005.
7. J. Peng and B. Sikdar, "Multi-layer multicast congestion control in satellite environments," *IEEE Journal on Selected Areas in Communications*, vol. 22, no. 4, pp. 449-461, May 2004.
6. B. Sikdar, S. Kalyanaraman and K. S. Vastola, "Analytic Models for the Latency and Steady-State Throughput of TCP Tahoe, Reno and SACK," *IEEE/ACM Transactions on Networking*, vol. 11, no. 6, pp. 959-971, December 2003.
5. O. Tickoo and B. Sikdar, "On the impact of IEEE 802.11 MAC on traffic characteristics," *IEEE Journal on Selected Areas in Communications*, vol. 21, no. 2, pp. 189-203, February 2003.
4. D. Manjunath and B. Sikdar, "Variable length packet switches: Delay analysis of crossbar switches under Poisson and self-similar traffic," *Computer Communications*, vol. 26, no. 6, pp. 590-610, April, 2002.
3. B. Sikdar, S. Kalyanaraman and K. S. Vastola, "An integrated model for the latency and steady state throughput of TCP connections," *Performance Evaluation*, vol. 46, no. 2-3, pp. 139-154, September 2001.
2. D. Manjunath and B. Sikdar, "Integral expressions for the numerical evaluation of product form expressions over irregular multidimensional integer state spaces (extended version)," *Telecommunication Systems*, vol. 16, no. 1,2, pp. 195-215, January 2001.
1. B. Sikdar and D. Manjunath, "Queueing analysis of scheduling policies in copy networks of space based multicast packet switches," *IEEE/ACM Transactions on Networking*, vol. 8, no. 3, pp. 396-406, July 2000.

## Conferences

70. H. Yang, B. Sikdar and S. Kalyanaraman, "A Threshold Based MAC Protocol for Cooperative MIMO Transmissions," to appear in *Proceedings of IEEE INFOCOM*, minisymposium, Rio de Janeiro, Brazil, April, 2009.
69. B. Sikdar, "A Broadcasting Scheme for Infrastructure to Vehicle Communications," *Proceedings of IEEE GLOBECOM*, New Orleans, LA, December 2008.

68. H. Yang and B. Sikdar, "A Mobility Based Architecture for Underwater Acoustic Sensor Networks," *Proceedings of IEEE GLOBECOM*, New Orleans, LA, December 2008.
67. X. Long and B. Sikdar, "Wavelet Based Detection of Session Hijacking Attacks in Wireless Networks," *Proceedings of IEEE GLOBECOM*, New Orleans, LA, December 2008.
66. H.-Y. Shen, H. Yang, B. Sikdar and S. Kalyanaraman, "A Distributed System for Cooperative MIMO Transmissions," *Proceedings of IEEE GLOBECOM*, New Orleans, LA, December 2008.
65. A. Seyedi and B. Sikdar, "Modeling and Analysis of Energy Harvesting Nodes in Wireless Sensor Networks," *Proceedings of the Allerton Conference*, Urbana-Champaign, IL, September 2008.
64. A. Seyedi and B. Sikdar, "Modeling and Analysis of Energy Harvesting Nodes in Body Sensor Networks," *Proceedings of the International Workshop on Wearable and Implantable Body Sensor Networks*, Hong Kong, China, June 2008.
63. B. Sikdar, "Medium Access Control in Vehicle to Roadside Networks," *Proceedings of IEEE ICC*, Beijing, China, May 2008.
62. X. Long and B. Sikdar, "A Wavelet Based Long Range Signal Strength Prediction in Wireless Networks," *Proceedings of IEEE ICC*, Beijing, China, May 2008.
61. X. Long and B. Sikdar, "A Real-time Algorithm for Long Range Signal Strength Prediction in Wireless Networks," *Proceedings of IEEE WCNC*, Las Vegas, NV, March 2008.
60. B. Sikdar, "Design and Analysis of a MAC Protocol for Vehicle to Roadside Networks," *Proceedings of IEEE WCNC*, Las Vegas, NV, March 2008.
59. A. Seyedi and B. Sikdar, "Energy Efficient Transmission Strategies for Body Sensor Networks with Energy Harvesting," *Proceedings of CISS*, Princeton, NJ, March 2008.
58. H. Yang, H.-Y. Shen and B. Sikdar, "A MAC Protocol for Cooperative MIMO Transmissions in Sensor Networks," *Proceedings of IEEE GLOBECOM*, Washington, DC, November 2007.
57. X. Long and B. Sikdar, "Wavelet Based Detection of Shadow Fading in Wireless Networks," *Proceedings of IEEE GLOBECOM*, Washington, DC, November 2007.
56. J. Peng, L. Cheng and B. Sikdar, "Distributed Multiple Access with an Out-of-band Control Channel," *Proceedings of IEEE VTC*, Baltimore, MD, October 2007.
55. K. Ramachandran and B. Sikdar, "On the Stability of the Malware Free Equilibrium in Cell Phones Networks with Spatial Dynamics," *Proceedings of IEEE ICC*, Glasgow, Scotland, July 2007.
54. H. Yang and B. Sikdar, "Performance Analysis of Polling based TDMA MAC Protocols with Sleep and Wakeup Cycles," *Proceedings of IEEE ICC*, Glasgow, Scotland, July 2007.
53. X. Long and B. Sikdar, "Real Time Detection of Link Failures in Inter Domain Routing," *Proceedings of IEEE ICC*, Glasgow, Scotland, July 2007.
52. K. Ramachandran and B. Sikdar, "Malware Propagation in Networks of Smart Cell Phones with Spatial Dynamics," *Proceedings of IEEE INFOCOM*, minisymposium, Alaska, AK, May 2007.
51. P. Michiardi, K. Ramachandran and B. Sikdar, "Modeling and Analysis of Seed Scheduling Strategies in a BitTorrent Network," *Proceedings of IFIP Networking*, Atlanta, GA, May 2007.
50. H. Yang and B. Sikdar, "Optimal Cluster Heads Selection in LEACH Architecture," *Proceedings of IEEE IPCCC*, New Orleans, LA, April 2007.

49. J. Peng, L. Cheng and B. Sikdar, "A New MAC Protocol for Wireless Packet Networks," *Proceedings of IEEE GLOBECOM*, San Francisco, CA, November 2006.
48. F. Ye, H. Yang and B. Sikdar, "Distributed Mobility Transparent Broadcast in Mobile Ad Hoc Networks," *Proceedings of IEEE GLOBECOM*, San Francisco, CA, November 2006.
47. S. Deshpande, M. Thottan, T. Ho and B. Sikdar, "A Statistical Approach to Anomaly Detection in Interdomain Routing," *Proceedings of IEEE BROADNETS*, San Jose, CA, October 2006.
46. R. Iyengar, V. Sharma, K. Kar and B. Sikdar, "Analysis of Contention Based Multichannel MAC for Point to Multipoint Networks," *Proceedings of IEEE WOWMOM*, Niagara Falls, NY, June 2006.
45. F. Ye, H. Yang and B. Sikdar, "Enhancing MAC Coordination to Boost Spatial Reuse in IEEE 802.11 Ad Hoc Networks," *Proceedings of IEEE ICC*, Istanbul, pp. 3815-3819, Turkey, June 2006.
44. K. Ramachandran and B. Sikdar, "Modeling Malware Propagation in Gnutella Type Peer-to-Peer Networks," *Proceedings of IEEE IPDPS*, Rhodes Island, Greece, April 2006.
43. B. Stephenson and B. Sikdar, "A Quasi-species Approach for Modeling the Dynamics of Polymorphic Worms," *Proceedings of IEEE INFOCOM*, Barcelona, Spain, April 2006.
42. H. Yang, F. Ye and B. Sikdar, "SIMPLE: Using Swarm Intelligence Methodology to Design Data Acquisition Protocol in Sensor Networks with Mobile Sinks," *Proceedings of IEEE INFOCOM*, Barcelona, Spain, April 2006.
41. R. Iyengar, K. Kar and B. Sikdar, "Scheduling Algorithms for PMP operation in IEEE 802.16 Networks," *Proceedings of the Workshop on Resource Allocation in Wireless Networks*, Boston, MA, April 2006.
40. B. Sikdar "Delay Analysis of IEEE 802.11 PCF MAC based Wireless Networks," *Proceedings of IEEE GLOBECOM*, Saint Louis, MO, November 2005.
39. R. Iyengar, P. Iyer and B. Sikdar, "Delay Analysis of 802.16 based Last Mile Wireless Networks," *Proceedings of IEEE GLOBECOM*, Saint Louis, MO, November 2005.
38. B. Sikdar, "Queueing Analysis of IEEE 802.11 Point Coordination Function," *Proceedings of International Teletraffic Congress*, Beijing, China, August 2005.
37. H. Yang and B. Sikdar, "A Lightweight Target Tracking Protocol for Ad Hoc Sensor Networks," *Proceedings of IEEE VTC*, pp. 2850-2854, Stockholm, Sweden, May, 2005.
36. A. Muthukrishnan and B. Sikdar, "Power Efficiencies of Multi-hop paths for Routing in Wireless Networks," *Proceedings of IEEE VTC*, pp. 2459-2462, Stockholm, Sweden, May, 2005.
35. H. Yang, F. Ye and B. Sikdar, "Swarm Intelligence Based Surveillance Protocol in Ad Hoc Sensor Networks," *Proceedings of IEEE VTC*, pp. 2533-2537, Stockholm, Sweden, May, 2005.
34. K. Ramachandran and B. Sikdar, "An Analytic Framework for Modeling Peer to Peer Networks," *Proceedings of IEEE INFOCOM*, pp. 215-269, Miami, FL, March 2005.
33. F. Ye and B. Sikdar, "Distance-Aware Virtual Carrier Sensing for Improved Spatial Reuse in Wireless Networks," *Proceedings of IEEE GLOBECOM*, pp. 3793-3797, Dallas, TX, November 2004.
32. S. Deshpande, M. Thottan and B. Sikdar, "Early Detection of BGP Instabilities Resulting from Internet Worm Attacks," *Proceedings of IEEE GLOBECOM*, pp. 2266-2270, Dallas, TX, November 2004.

31. S. Deshpande and B. Sikdar, "On the Impact of Route Processing and MRAI Timers on BGP Convergence Times," *Proceedings of IEEE GLOBECOM*, pp. 1147-1151, Dallas, TX, November 2004.
30. F. Ye and B. Sikdar, "Evaluation of Spatial Reuse in Cooperative Multiple Access Networks," *Proceedings of IEEE VTC*, pp. 4315-4319, Los Angeles, CA, October 2004.
29. O. Tickoo and B. Sikdar, "A Queueing Model for Finite Load IEEE 802.11 Random Access MAC," *Proceedings of IEEE ICC*, pp. 175-179, Paris, France, June 2004.
28. H. Yang, F. Ye and B. Sikdar, "A Dynamic Query-Tree Energy Balancing Protocol for Sensor Networks," *Proceedings of IEEE WCNC*, pp. 1715-1720, Atlanta, GA, March 2004.
27. O. Tickoo and B. Sikdar, "Queueing Analysis and Delay Mitigation in IEEE 802.11 Random Access MAC based Wireless Networks," *Proceedings of IEEE INFOCOM*, pp. 1404-1413, Hong Kong, China, March 2004.
26. J. Peng and B. Sikdar, "A Multicast Congestion Control Scheme for Mobile Ad Hoc Networks," *Proceedings of IEEE GLOBECOM*, pp. 2860-2864, San Francisco, CA, December 2003.
25. F. Ye, S. Yi and B. Sikdar, "Improving Spatial Reuse of IEEE 802.11 Based Ad Hoc Networks," *Proceedings of IEEE GLOBECOM*, pp. 1013-1017, San Francisco, CA, December 2003.
24. J. Peng and B. Sikdar, "Multicast Loss Recovery with Active Injection," *Proceedings of IEEE ICCCN*, pp. 81-86, Dallas, TX, October 2003.
23. H. Yang and B. Sikdar, "A Protocol for Tracking Mobile Targets using Sensor Networks," *Proceedings of IEEE Workshop on Sensor Network Protocols and Applications (In conjunction with IEEE ICC)*, Anchorage, AK, May 2003.
22. R. Iyengar and B. Sikdar, "Scalable and Distributed GPS Free Positioning for Sensor Networks," *Proceedings of IEEE ICC*, pp. 338-342, Anchorage, AK, May, 2003.
21. J. Peng and B. Sikdar, "Rate Control over Repair Traffic in Multicast," *Proceedings of the 37th Conference on Information Sciences and Systems*, Baltimore, MD, March 2003.
20. O. Tickoo and B. Sikdar, "Modeling and Analysis of Traffic Characteristics in IEEE 802.11 MAC Based Networks," *Proceedings of IEEE GLOBECOM*, pp. 67-71, Taipei, Taiwan, November, 2002.
19. B. Sikdar, K. Chandrayana, K. S. Vastola and S. Kalyanaraman, "On Reducing the Degree of Second-Order Scaling in Network Traffic," *Proceedings of IEEE GLOBECOM*, pp. 2594-2598, Taipei, Taiwan, November, 2002.
18. J. Peng and B. Sikdar, "Routing-based video multicast congestion control," *Proceedings of IFIP/IEEE MMNS*, pp. 328-340, Santa Barbara, CA, October 2002.
17. B. Sikdar, K. Chandrayana, K. S. Vastola and S. Kalyanaraman, "Queue management algorithms and network traffic self-similarity," *Proceedings of IEEE HPSR*, pp. 319-323, Kobe, Japan, May 2002.
16. K. Chandrayana, B. Sikdar and S. Kalyanaraman, "Comparative study of TCP compatible binomial congestion control schemes," *Proceedings of IEEE HPSR*, pp. 224-228, Kobe, Japan, May 2002.
15. D. Manjunath and B. Sikdar, "Input queued switches for variable length packets: Finite buffer analysis," *Proceedings of the 8th International Conference on High Performance Computing*, pp. 372-384, Hyderabad, India, December 2001.

14. B. Sikdar, S. Kalyanaraman and K. S. Vastola, "Analytic models for the latency and steady-state throughput of TCP Tahoe, Reno and SACK," *Proceedings of IEEE GLOBECOM*, pp. 1781-1787, San Antonio, TX, November 2001.
13. J. Lévy-Véhel and B. Sikdar, "A multiplicative multifractal model for TCP traffic," *Proceedings of IEEE ISCC*, pp. 714-719, Hammamet, Tunisia, July 2001.
12. Y. Tao, D. Harrison, B. Sikdar, H. Tahilramani, B. Mo, L. Jiang, S. Kalyanaraman, B. Szymanski, and K. S. Vastola, "Network management and control using collaborative on-line simulation," *Proceedings of IEEE ICC*, pp. 204-209, Helsinki, Finland, June 2001.
11. K. Chandrayana, B. Sikdar and S. Kalyanaraman, "Scalable configuration of RED queue parameters," *Proceedings of IEEE HPSR*, pp. 185-189, Dallas, TX, May 2001.
10. B. Sikdar, S. Kalyanaraman and K. S. Vastola, "TCP Reno with random losses: Latency, throughput and sensitivity analysis," *Proceedings of IEEE IPCCC*, pp. 188-195, Phoenix, AZ, April 2001.
9. B. Sikdar and K. S. Vastola, "The effect of TCP on the self-similarity of network traffic," *Proceedings of the 35th Conference on Information Sciences and Systems*, Baltimore, MD, March 2001.
8. B. Sikdar, S. Kalyanaraman and K. S. Vastola, "An integrated model for the latency and steady-state throughput of TCP connections," *Proceeding of IFIP Symposium on Advanced Performance Modeling*, Orlando, FL, November 2000.
7. D. Manjunath and B. Sikdar, "Variable length packet switches: Delay analysis of crossbar switches under Poisson and self-similar traffic," *Proceedings of IEEE INFOCOM*, pp. 1055-1064, Tel-Aviv, Israel, March 2000.
6. B. Sikdar and K. S. Vastola, "On the convergence of Markovian arrival and fractional ARIMA processes with long-range dependence to fractional Brownian motion," *Proceedings of the 34th Conference on Information Sciences and Systems*, pp. TP2(7-12), Princeton, NJ, March 2000.
5. M. Yuksel, B. Sikdar, K. S. Vastola and B. Szymanski, "Workload generation in *ns* simulations of wide area networks and the Internet," *Proceedings of Communication Networks and Distributed Systems Simulation Conference*, pp. 93-98, San Diego, CA, January 2000.
4. D. Manjunath and B. Sikdar, "Integral expressions for the numerical evaluation of product form expressions over irregular multidimensional integer state spaces," *Proceedings of the Symposium on Performance Evaluation of Computer and Telecommunication Systems*, pp. 326-332, Chicago, IL, July 1999.
3. B. Sikdar and D. Manjunath, "Queueing analysis of scheduling policies in copy networks of space based multicast ATM switches," *Proceedings of 3rd IEEE International Workshop on Broadband Switching Systems*, pp 3-7, Kingston, Canada, June 1999.
2. B. Sikdar and D. Manjunath, "Input queued packets for variable length packets: A continuous time analysis," *Proceedings of the 3rd IEEE International Workshop on Broadband Switching Systems*, pp. 65-69, Kingston, Canada, June 1999.
1. B. Sikdar and D. Manjunath, "Evaluation of the exact overflow probabilities in a space based multicast switch copy network," *Proceedings of the 33rd Conference on Information Sciences and Systems*, pp. 586-587, Baltimore, MD, March 1999.

### Invited Papers

1. B. Sikdar and K. S. Vastola, "On the contribution of TCP to the self-similarity of network traffic," *Proceedings of the International Workshop on Digital Communications*, pp. 596-613, Taormina, Italy, September 2001.