George N. Rouskas

Alumni Distinguished Graduate Professor
Department of Computer Science
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Education

Ph.D.	1994	Georgia Institute of Technology	Computer Science
M.S.	1991	Georgia Institute of Technology	Computer Science
B.S.	1989	National Technical University of Athens	Computer Engineering

Employment History

Alumni Distinguished Graduate Professor (Professor 2002-2018 Associate Professor 1999-2002 Assistant Professor 1994-1999)	Department of Computer Science North Carolina State University Raleigh, NC	1994-present
Director of Graduate Programs	Department of Computer Science	January 2014-present

Visiting Positions

Distinguished Scientist	King Abdulaziz University, Saudi Arabia	2013-2021
Visiting Professor	Laboratoire d'Informatique University of Paris 6, France	October 2012
Visiting Professor	Universidad Tecnica Federico Santa Maria, Chile	December 2008
Visiting Professor	Laboratoire de Méthodes Informatiques University of Evry, France	July 2006 December 2002 June 2000
Network Architect (**Sabbatical**)	Vitesse Semiconductor	August 2000-May 2001

Honors and Awards

Outstanding Service Award, Optical Networking Tech. Cmte (ONTC), IEEE Commun. Society, 2019

Alumni Distinguished Graduate Professor, NC State, 2018

Joyce Hatch Service Award, NC State Chapter of ACM/AITP, 2015

Most Receptive Graduate Professor Award, NC State Chapter of ACM/AITP, 2014

Fellow, Institute of Electrical and Electronic Engineers (IEEE), 2012

Carol Miller Graduate Lecturer Award, NC State Chapter of ACM/AITP, 2012

IEEE Distinguished Lecturer, 2010-2011

Outstanding Service Award, IEEE GLOBECOM, 2010

IBM Faculty Award, 2007

Best Paper Award, *EVGM Workshop*, 2007 (with C. Castillo and K. Harfoush)

Best Paper Award, *CSNDSP Symposium*, 2006 (with B. Chen and R. Dutta)

ALCOA Foundation Engineering Research Achievement Award, CoE, NC State, 2004

Academy of Outstanding Teachers, NC State, 2004

Alumni Outstanding Research Award, NC State, 2003

Best Paper Award, *SPIE Conference on All-Optical Networking*, 1998 (with I. Baldine)

CAREER Award, National Science Foundation (NSF), 1997

Outstanding New Teacher Award, Department of Computer Science, NC State, 1995

Graduate Research Award, College of Computing, Georgia Institute of Technology, 1994

I. Teaching and Mentoring

Courses Taught

CSC 316 – Data Structures (undergraduate)

CSC 401 – Computer Networks (undergraduate)

CSC/ECE 573 – Internet Protocols (graduate)

CSC/ECE 579 – Introduction to Computer Performance Evaluation (graduate)

CSC/ECE 772 – Survivable Networks (graduate)

CSC/ECE 778 – Optical Networks (graduate)

Visiting Scholars

4. Dr. Kamal Jambi, 2018-19 (King Abdulaziz University, Jeddah, Saudi Arabia)
   Research: *Machine Learning Applications to Network Control Plane*

3. Dr. Yu Xiong, 2016-2017 (Chongqing University of Posts and Telecommunications (CUPT), China)
   Research: *Optical and Datacenter Networks*

2. Dr. Omar Batarfi, 2014-2015 (King Abdulaziz University, Jeddah, Saudi Arabia)
   Research: *Visible Light Communications*

1. Dr. Evripidis Bampis, 2005-2006 (Paris VI University, France)
   Research: *Packet Scheduling*

Post Doctoral Fellows

3. Dr. Emre Yetginer, 2008-2009
   Research: *Traffic Grooming for Green Optical Networking*

2. Dr. A. Halim Zaim, 2001-2002
   Research: *Implementation of Signaling Protocols for Optical Burst-Switched Networks*

1. Dr. Sridhar Ramesh, 1999-2000
   Research: *Performance Analysis of Wavelength Routed Networks*

Ph.D. Students Supervised – Graduated

25. Lingnan Gao, 2019
    Dissertation: *Resource Allocation in Virtual Network Environments*
    Outstanding Research Award, 2019
    Outstanding Teaching Assistant Award, 2016

24. Shireesh Bhat, 2017
    Dissertation: *Network Service Orchestration within the ChoiceNet Architecture*

23. Ramesh Krishnamurthy, 2016
    Dissertation: *A Framework for Evaluating Server Performance: Application to SIP Proxy Servers*

22. SAHAR TALEBI, 2015
    Dissertation: *On Routing and Spectrum Assignment in Elastic Optical Networks*

21. AHMET CAN BABAOGLU, 2014
    Dissertation: *Verification Services for the Choice-Based Internet of the Future*

20. HUI WANG, 2013
    Dissertation: *Efficient Decomposition Techniques for Traffic Grooming Problems in Optical Networks*

19. ZEYU LIU, 2012
    Dissertation: *On Routing and Wavelength Assignment in WDM Networks*

18. MOHAN IYER, 2010
    Dissertation: *Providing Bandwidth on Demand Services Using Optical Network Design and the SILO Network Architecture*
    Outstanding Teaching Assistant Award, 2009

17. QIAN LV (2010)
    Dissertation: *Economic Models for Internet Tiered Services*

16. ANJING WANG, 2010
    Dissertation: *Optimization of Silo Services for the Future* Internet
    Outstanding Teaching Assistant Award, 2009

15. ZYAD DWEKAT 2009
    Dissertation: *Practical Fair Queueing Schedulers: Simplification Through Quantization*

14. CLARIS CASTILLO, 2008
    Dissertation: *Scheduling and Resource Management in Grids*
    College of Engineering Nancy G. Pollock PhD Dissertation Award, 2008
    Google Anita Borg Scholarship, 2007
    Outstanding Teaching Assistant Award, 2006

13. LI YANG, 2006
    Dissertation: *Congestion Control and Quality of Service (QoS) Provisions for Optical Burst Switched Networks*

12. BENSONG CHEN, 2005
    Dissertation: *Hierarchical Traffic Grooming in Large-Scale WDM Networks*
    Outstanding Teaching Assistant Award, 2004

11. JING TENG, 2004
    Dissertation: *A Study of Optical Burst Switched Networks with the Jumpstart Just-In-Time Signaling Protocol*

10. LAURA E. JACKSON, 2003
    Dissertation: *The Directional p-Median Problem with Applications to Traffic Quantization and Multiprocessor Scheduling*
    GAANN Fellow, 2000-2003
    College of Engineering Nancy G. Pollock PhD Dissertation Award, 2004

 9. YUFENG XIN, 2002
    Dissertation: *Topology Design of Large-Scale Optical Networks*

 8. LISONG XU, 2002
    Dissertation: *Performance Analysis of Optical Burst Switched Networks*
    NSF CAREER Award, 2007

7. RUDRA DUTTA, 2001
   Dissertation: *Virtual Topology Design for Traffic Grooming in Optical WDM Networks*

6. A. HALIM ZAIM, 2001
   Dissertation: *Computing Call Blocking Probabilities in LEO Satellite Networks*

5. YUHONG ZHU, 1999
   Dissertation: *Computation of Blocking Probabilities in Wavelength Routing Networks*

4. ILYA BALDIN, 1998
   Dissertation: *Dynamic Reconfiguration in Broadcast WDM Networks*

3. ZEYDY ORTIZ-LAUREANO, 1998
   Dissertation: *Techniques to Support Multicast Traffic in Single-Hop WDM Optical Networks*
   NSA Fellow, 1994-1998

2. M. WILLIAM (BILL) MCKINNON, 1997
   Dissertation: *Performance Analysis of a Class of Photonic Interconnection Architectures*

1. SUPRIYA S. SHARMA, 1997
   Dissertation: *Optimal Buffer Management for Shared Buffer ATM Switches*

Visiting Ph.D. Students

5. FENGXIAN TANG, 2019-2020 (Soochow University, China)
   Research: *Optical Network Optimization*

4. WENZHE LI, 2017-2018 (Beijing University of Posts and Telecommunications, China)
   Research: *Optical Networks on a Chip (ONoC)*

3. XIAOMIN LIU, 2011-2012 (Beihang University, China)
   Research: *Ethernet Passive Optical Networks*

2. CHANG CAO, 2010-2011 (Beijing University of Posts and Telecommunications, China)
   Research: *p-Cycle Protection in MPLS Networks*

1. ARUN VISWANATH, 2007-2008 (University of New South Wales, Australia)
   Research: *Buffer Sizing in High-Speed Routers*

M.S. Students Supervised – Graduated

12. MANOJ VELLALA, 2008
    Thesis: *Stack Composition for SILO Architecture*

11. SRIKRISHNA GIRISH KHARE, 2008
    Thesis: *Linux Implementation of Tiered Service Fair Queueing (TSFQ) Scheduling Disciplines*

10. AJAY BABU AMUDALA BHASKER, 2006
    Thesis: *Tiered-Service Fair Queueing (TSFQ): A Practical and Efficient Fair Queueing Algorithm*

9. NIKHIL BARADWAJ, 2005
   Thesis: *Traffic Quantization and its Application to QoS Routing*
   Graduate School Nancy G. Pollock MS Thesis Award, 2006

8. VIJAY IYER, 2002
   Thesis: *A Simulation Study of Wavelength Assignment and Reservation Policies with Signaling Delays*

7. MRUGENDRA SINGHAI, 2002
   Thesis: *Helios 2: An All-Optical Broadcast Local Area Network*

6. SUDHIN BENGERI, 2001
   Thesis: *Differentiated Services Support for the Helios Optical WDM Testbed*

5. DHAVAL THAKER, 2001
   Thesis: *Multicasting in a Partially Tunable Broadcast WDM Network*

4. JEFFREY J. STUCKEY, 1998
   Thesis: *Worst-Case Cell Delay in an ATM Switch Using EDF Scheduling*

3. BRIAN K. HABERMAN, 1997
   Thesis: *Cost, Delay, and Delay Variation Conscious Multicast Routing*

2. ILYA BALDIN, 1995
   Thesis: *Multicast Routing With End-to-End Delay and Delay Variation Constraints*

1. VIJAY SIVARAMAN, 1995
   Thesis: *TDM Schedules For Broadcast WDM Networks With Arbitrary Tuning Latencies*

II. Research and Scholarship

Books

3. ROUSKAS, G.N., RAMAMURTHY, B., SIVALINGAM, K.M. (editors). Next-Generation Internet Architectures and Protocols. Cambridge University Press, 2011.

2. ROUSKAS, G.N. Internet Tiered Services: Theory, Economics, and Quality of Service. Springer, 2009.

1. DUTTA, R., KAMAL, A., ROUSKAS, G.N. (editors). Traffic Grooming for Optical Networks: Foundations, Techniques, and Frontiers. Springer, 2008.

Book Chapters

10. SIMMONS, J., ROUSKAS, G.N., "Routing and Wavelength (Spectrum) Allocation." In Biswanath Mukherjee, Ioannis Tomkos, Massimo Tornatore, Peter Winzer, and Yongli Zhao (editors), *Springer Handbook of Optical Networks*, Springer, 2020.

9. FAYEZ, M., KATIB, I., ROUSKAS, G.N., FAHEEM, H.M., "Scheduling-Inspired Spectrum Assignment Algorithms for Mesh Elastic Optical Networks." In Aaron Striegel, Min Song and Kewei Sha (editors), *Advances in Computer Communications and Networks - From Green, Mobile, Pervasive Networking to Big Data Computing*, River Publishers, 2016.

8. ROUSKAS, G.N., DUTTA, R., "Hierarchical Traffic Grooming." In Rudra Dutta, Ahmed E. Kamal, and George N. Rouskas (editors), *Traffic Grooming for Optical Networks: Foundations, Techniques, and Frontiers*, Springer, 2008.

7. DUTTA, R., KAMAL, A.E., ROUSKAS, G.N., "Grooming Mechanisms in SONET/SDH and Next-Generation SONET/SDH." In Rudra Dutta, Ahmed E. Kamal, and George N. Rouskas (editors), *Traffic Grooming for Optical Networks: Foundations, Techniques, and Frontiers*, Springer, 2008.

6. DUTTA, R., KAMAL, A.E., ROUSKAS, G.N., "Introduction to Traffic Grooming." In Rudra Dutta, Ahmed E. Kamal, and George N. Rouskas (editors), *Traffic Grooming for Optical Networks: Foundations, Techniques, and Frontiers*, Springer, 2008.

5. ROUSKAS, G.N., XU, L., "Optical Packet Switching." In Krishna Sivalingam and Suresh Subramanian (editors), *Optical WDM Networks: Past Lessons and Path Ahead*, Kluwer, Norwell, Massachusetts, 2004.

4. ROUSKAS, G.N., "Optical Network Engineering." In Sudhir Dixit (editor), *IP over DWDM: Building the Next Generation Optical Internet*, John Wiley & Sons, Hoboken, New Jersey, pp. 299-327, 2003.

3. ROUSKAS, G.N., "Routing and Wavelength Assignment in Optical WDM Networks." In John Proakis (editor), *Wiley Encyclopedia of Telecommunications*, 2002.

2. ROUSKAS, G.N., DUTTA, R., "Design of Logical Topologies for Wavelength Routed Networks." In Krishna Sivalingam and Suresh Subramanian (editors), *Optical WDM Networks: Principles and Practice*, Kluwer, Norwell, Massachusetts, pp. 79-102, 2000.

1. ROUSKAS, G.N., "Scheduling Algorithms for Unicast, Multicast, and Broadcast." In Krishna Sivalingam and Suresh Subramanian (editors), *Optical WDM Networks: Principles and Practice*, Kluwer, Norwell, Massachusetts, pp. 171-188, 2000.

Journal Articles

87. LI, W., YUAN, G., WANG, Z., TAN, G., ZHANG, P, ROUSKAS, G.N., "Fast and Scalable All-Optical Network Architecture for Distributed Deep Learning." *IEEE/Optica Journal of Optical Communications and Networking*, 2024 (in press).

86. ROUSKAS, G.N., GUPTA, S., SHARMA, P. "Symmetry-Free Algorithm for Spectrum Allocation: Parallel Implementations and Evaluation [Invited]." *IEEE/Optica Journal of Optical Communications and Networking*, vol. 15, no. 10, pp. E40-E50, October 2023.

85. ROUSKAS, G.N. "A Symmetry-Free Spectrum Allocation Heuristic for Elastic Optical Networks." *Optical Switching and Networking*, vol. 49, May 2023.

84. ROUSKAS, G.N., BANDIKATLA, C., "Recursive First Fit: A Highly Parallel Optimal Solution to Spectrum Allocation." *IEEE/Optica Journal of Optical Communications and Networking*, vol. 14, no. 4, pp. 165-176, April 2022.

83. TANG, F., SHEN, G., ROUSKAS, G.N., "Crosstalk-Aware Shared Backup Path Protection in Multi-Core Fiber Elastic Optical Networks." *IEEE/OSA Journal of Lightwave Technology*, vol. 39, no. 10, pp. 3025-3036, May 15, 2021.

82. GAO, L., ROUSKAS, G.N., "Congestion Minimization for Service Chain Routing Problems with Path Length Considerations." *IEEE/ACM Transactions on Networking*, vol. 28, no. 6, pp. 2643-2656, December 2020.

81. TANG, F., LI, Y., SHEN, G., ROUSKAS, G.N., "Minimizing Inter-Core Crosstalk Jointly in Spatial, Frequency, and Time Domains for Scheduled Lightpath Demands in Multi-Core Fiber-based Elastic Optical Network." *IEEE/OSA Journal of Lightwave Technology*, vol. 38, no. 20, pp. 5695-5607, October 15, 2020.

80. FAYEZ, M., KATIB, I., ROUSKAS, G.N., GHARIB, T.F., KHALEED, H., FAHEEM, H.M., "Recursive Algorithm for Selecting Optimum Routing Tables to Solve Offline Routing and Spectrum Assignment Problem." *Ain Shams Engineering Journal*, vol. 11, no. 2, pp. 273-280, June 2020.

79. XIONG, Y., YAYA, Y., YE, Y., ROUSKAS, G.N., "A Machine Learning Approach to Mitigating Fragmentation and Crosstalk in Space Division Multiplexing Elastic Optical Networks." *Optical Fiber Technology*, vol. 50, pp. 99-107, July 2019.

78. LI, W., GUO, B., LI, X., ZHOU, Y, HUANG, S., ROUSKAS, G.N. "A Large-Scale Nesting Ring Multi-Chip Architecture for Manycore Processor Systems." *Optical Switching and Networking*, vol. 31, pp. 183-192, January 2019.

77. GAO, L., ROUSKAS, G.N., "A Spectral Clustering Approach to Network-Aware Virtual Request Partitioning." *Computer Networks*, vol. 139, pp. 70-80, July 2018.

76. BHAT, S., ROUSKAS, G.N., KATIB, I., "On Time Dependent Routing Algorithms for Open Marketplaces of Path Services with Support for In-Advance Path Reservation." *Computer Networks*, vol. 138, pp. 201-212, June 2018.

75. XIONG, Y., SHI, J., YAYA, Y., LV, Y., ROUSKAS, G.N., "Lightpath Management on SDN-Based Elastic Optical Networks with Power Consumption Considerations." *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 9, pp. 1650-1660, May 2018.

74. XIONG, Y., LI, Y., ZHOU, B., WANG, R., ROUSKAS, G.N., "SDN Enabled Restoration with Triggered Precomputation in Elastic Optical Inter-Datacenter Networks." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 10, no. 1, pp. 24-34, January 2018.

73. BHAT, S., UDECHUKWU, R., DUTTA, R., ROUSKAS, G.N., "Network Service Orchestration in Heterogeneous 5G Networks using an Open Marketplace." *IET Networks*, 2017.

72. TALEBI, S., ROUSKAS, G.N., "On Distance-Adaptive Routing and Spectrum Assignment in Mesh Elastic Optical Networks." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 9, no. 5, pp. 456-465, May 2017.

71. TALEBI, S., KATIB, I., ROUSKAS, G.N., "Distance-Adaptive Routing and Spectrum Assignment in Rings." *IET Networks*, vol. 5, no. 3, pp. 64-70, May 2016.

70. TALEBI, S., BAMPIS, E., LUCARELLI, G., KATIB, I., ROUSKAS, G.N., "On Routing and Spectrum Assignment in Rings." *IEEE/OSA Journal of Lightwave Technology*, vol. 33, no. 1, pp. 151-160, January 1, 2015.

69. COULIBALY, ROUSKAS, G.N., ABD LATIF, M.S., RAZZAQUE, M.A., MANDALA, S., "QoS-Aware Ant-Based Route, Wavelength and Timeslot Assignment Algorithm for Optical Burst Switched Networks." *Transactions on Emerging Telecommunications Technologies*, 2015.

68. TALEBI, S., BAMPIS, E., LUCARELLI, G., KATIB, I., ROUSKAS, G.N., "Spectrum Assignment in Optical Networks: A Multiprocessor Scheduling Perspective." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 6, no. 8, pp. 754-763, August 2014.

67. WANG, H., ROUSKAS, G.N., "Hierarchical Traffic Grooming: A Tutorial." *Computer Networks*, vol. 69, pp. 147-156, August 2014.

66. YAYAH, A. A., COULIBALY, Y., ISMAIL, A. S., ROUSKAS, G.N., "Hybrid Offset-Time and Burst Assembly Algorithm (H-OTBA) for Delay Sensitive Applications Over Optical Burst Switching Networks." *International Journal of Communication Systems*, 2014.

65. WOLF, T., GRIFFIOEN, J., CALVERT, K., DUTTA, R., ROUSKAS, G.N., BALDINE, I., NAGURNEY, A., "ChoiceNet: Toward an Economy Plane for the Internet." *ACM Computer Communications Review*, vol. 44, no. 3, pp. 58-65, July 2014.

64. TALEBI, S., ALAM, F., KATIB, I., KHAMIS, M., KHALIFAH, R., ROUSKAS, G.N., "Spectrum Management Techniques for Elastic Optical Networks: A Survey." *Optical Switching and Networking*, vol. 13, no. 1, pp. 34-48, July 2014.

63. LIU, X., ROUSKAS, G.N., HE, F., XIONG, H., "MPCP with Look-Ahead for WDM EPON." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 6, no. 2, pp. 104-113, February 2014.

62. WANG, H., ROUSKAS, G.N., "Traffic Grooming in Optical Networks: Decomposition and Partial LP Relaxation." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 5, no. 8, pp. 825-835, August 2013.

61. CAO, C., ROUSKAS, G.N., WANG, J., TANG, X., "Hybrid FRR/p-Cycle Design for Link and Node Protection in MPLS Networks." *International Journal of Electronics and Communications*, vol. 67, no. 6, pp. 470-478, June 2013.

60. WANG, A., IYER, M., DUTTA, R., ROUSKAS, G.N., BALDINE, I., "Network Virtualization: Technologies, Perspectives, and Frontiers." *IEEE/OSA Journal of Lightwave Technology*, vol. 31, no. 4, pp. 523-537, February 15, 2013.

59. EL-BAWAB, T.S, ESFANDIARI, M., ROUSKAS, G.N., JAYASUMANA, A., EFFENBERGER, F., KAZOVSKY, L., KINCAID, M., MEDARD, M., FROST, V., BANIEWICZ, P., "Toward Specialized Undergraduate Telecommunication Engineering Education in the US." *IEEE Communications Magazine*, vol. 50, no. 9, pp. 3-4, September 2012.

58. VISWANATH, A., SIVARAMAN, V., ROUSKAS, G.N., "Anomalous Loss Performance for Mixed Real-Time and TCP Traffic in Routers with Very Small Buffers." *IEEE/ACM Transactions on Networking*, vol. 19, no. 4, pp. 933-946, August 2011.

57. YETGINER, E., ZEYU, L., ROUSKAS, G.N., "Fast Exact ILP Decompositions for Ring RWA." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 3, no. 7, pp. 577-586, July 2011. **OSA Spotlight on Optics, September 2011**.

56. DWEKAT, Z., ROUSKAS, G.N., "A Practical Fair Queueing Scheduler: Simplification Through Quantization." *Computer Networks*, vol. 55, no. 10, pp. 2392-2406, July 2011.

55. CASTILLO, C., ROUSKAS, G.N., HARFOUSH, K., "Online Algorithms for Advance Resource Reservations." *Journal of Parallel and Distributed Computing*, vol. 71, no. 7, pp. 963-973, July 2011.

54. TOUCH, J., BALDINE, I., DAY, J., DUTTA, R., FINN, G.F., FORD, B., JORDAN, S., MASSEY, D., MATTA, A., PAPADOPOULOS, C., REIHER, P., ROUSKAS, G.N., "A Dynamic Recursive Unified Internet Design (DRUID)." *Computer Networks*, vol. 55, no. 4, pp. 919-935, 10 March 2011.

53. KARMOUS-EDWARDS, G., POLITO, S.G., JUKAN, A., ROUSKAS, G.N., "A New Framework for GLIF Interdomain Resource Resrvation Architecture (GIRRA)." *Annals of Telecommunications*, vol. 65, no. 11-12, pp. 1000-1001, November-December 2010.

52. CHEN, B., DUTTA, R., ROUSKAS, G.N., "Clustering for Hierarchical Traffic Grooming in Large Scale Mesh WDM Networks." *IEEE/OSA Journal of Optical Communications and Networking*, vol. 2, no. 8, pp. 502-514, August 2010.

51. LV, Q., ROUSKAS, G.N., "An Economic Model for Pricing Tiered Network Services." *Annals of Telecommunications*, vol. 65, no. 3-4, pp. 147-161, April 2010.

50. ROUSKAS, G.N., BARADWAJ, N., "On Bandwidth Tiered Service." *IEEE/ACM Transactions on Networking*, vol. 17, no. 6, pp. 1780-1793, December 2009.

49. KARMOUS-EDWARDS, G., VISWANATH, A., REEVES, D.S., BATTESTILLI, L., VEGESNA, P., ROUSKAS, G.N. "Edge-Reconfigurable Optical Networks (ERONs): Rationale, Network Design, and Evaluation." *IEEE/OSA Journal of Lightwave Technology*, vol. 27, no. 12, pp. 1837-1845, June 15, 2009.

48. CHEN, B., ROUSKAS, G.N., DUTTA, R., "On Hierarchical Traffic Grooming in WDM Networks." *IEEE/ACM Transactions on Networking*, vol. 16, no. 6, pp. 1226-1238, October 2008.

47. YANG, L., ROUSKAS, G.N., "Optimal Wavelength Sharing Policies in OBS Networks Subject to QoS Constraints." *IEEE Journal on Selected Areas in Communications*, supplement on *Optical Communications & Networking*, vol. 25, no. 9, pp. 40-49, December 2007.

46. JACKSON, L.E., ROUSKAS, G.N., STALLMAN, M.F., "The Directional p-Median Problem with Applications to Traffic Quantization and Multiprocessor Scheduling." *European Journal of Operational Research*, vol. 179, no. 3, pp. 1097-1108, June 2007.

45. YANG, L., ROUSKAS, G.N., "Generalized Wavelength Sharing Policies for Absolute QoS Guarantees in OBS Networks." *IEEE Journal on Selected Areas in Communications*, supplement on *Optical Communications & Networking*, vol. 25, no. 4, pp. 93-104, April 2007.

44. YANG, L., ROUSKAS, G.N., "Adaptive Path Selection in Optical Burst Switched Networks." *IEEE/OSA Journal of Lightwave Technology*, vol. 24, no. 8, pp. 3002-3011, August 2006.

43. HUANG, S., DUTTA, R., ROUSKAS, G.N., "Traffic Grooming in Path, Star, and Tree Networks: Complexity, Bounds, and Algorithms." *IEEE Journal on Selected Areas in Communications*, vol. 24, no. 4, pp. 66-82, April 2006.

42. TENG, J., ROUSKAS, G.N., "A Traffic Engineering Approach to Path Selection in OBS Networks." *OSA Journal of Optical Networking*, vol. 4, no. 11, pp. 759-777, November 2005.

41. TENG, J., ROUSKAS, G.N., "Wavelength Selection in OBS Networks Using Traffic Engineering and Priority-Based Concepts." *IEEE Journal on Selected Areas in Communications*, vol. 23, no. 8, pp. 1658-1669, August 2005.

40. CHEN, B., ROUSKAS, G.N., DUTTA, R., "Traffic Grooming in WDM Ring Networks To Minimize the Maximum Electronic Port Cost." *Optical Switching and Networking*, vol. 1, no. 2, pp. 1-18, May 2005.

39. TENG, J., ROUSKAS, G.N., "A Detailed Analysis and Performance Comparison of Wavelength Reservation Schemes for Optical Burst Switched Networks." *Photonic Network Communications*, vol. 9, no. 3, pp. 311-335, May 2005.

38. XIN, Y., ROUSKAS, G.N., "Light-Tree Routing Under Optical Power Budget Constraints." *OSA Journal of Optical Networking*, vol. 3, no. 5, pp. 282-302, May 2004.

37. XIN, Y., ROUSKAS, G.N., "A Study of Path Protection in Large-Scale Optical Networks." *Photonic Network Communications*, vol. 7, no. 3, pp. 267-278, May 2004.

36. BALDINE, I., ROUSKAS, G.N., PERROS, H.G., STEVENSON, D., "Multicast and QoS in the Jumpstart Architecture for WDM Burst-Switched Networks." *Optical Networks*, vol. 4, no. 6, pp. 68-80, November/December 2003.

35. JACKSON, L.E., ROUSKAS, G.N., "Optimal Quantization of Periodic Task Requests on Multiple Identical Processors." *IEEE Transactions on Parallel and Distributed Systems*, vol. 14, no. 8, pp. 795-806, August 2003.

34. ZAIM, A.H., PERROS, H.G., ROUSKAS, G.N., "Performance Analysis of LEO Satellite Networks." *IEEE Transactions on Vehicular Technology*, vol. 52, no. 3, pp. 622-636, May 2003.

33. XIN, Y., ROUSKAS, G.N., PERROS, H.G., "On the Physical and Logical Topology Design of Large-Scale Optical Networks." *IEEE/OSA Journal of Lightwave Technology*, vol. 21, no. 4, pp. 904-915, April 2003.

32. ZAIM, A.H., BALDINE, I., CASSADA, M., ROUSKAS, G.N., PERROS, H.G., STEVENSON, D., "The Jumpstart Just-In-Time Signaling Protocol: A Formal Description Using Extended Finite State Machines." *Optical Engineering*, vol. 42, no. 2, pp. 568-585, February 2003.

31. XU, L., ROUSKAS, G.N., PERROS, H.G., "A Simulation Study of Optical Burst Switching and Access Protocols for WDM Ring Networks." *Computer Networks*, vol. 41, no. 2, pp. 143-160, January 2003.

30. ROUSKAS, G.N., "Optical Layer Multicast: Rationale, Building Blocks, and Challenges." *IEEE Network*, vol. 17, no. 1, pp. 60-65, January/February 2003.

29. XU, L., PERROS, H.G., ROUSKAS, G.N., "Access Protocols for Optical Burst-Switched Ring Networks." *Information Sciences*, vol. 149, no. 1-2, pp. 75-81, January 2003.

28. DUTTA, R., ROUSKAS, G.N., "A Survey of Traffic Grooming Techniques for Optical WDM Networks." *IEEE Network*, vol. 16, no. 6, pp. 46-56, November/December 2002.

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24. BALDINE, I., ROUSKAS, G.N., PERROS, H.G., STEVENSON, D. "`Jumpstart`: A Just-In-Time Signaling Architecture for WDM Burst-Switched Networks." In *Proceedings of NETWORKING 2002*, LNCS 2345, pp. 1081-1086, Pisa, Italy, May 19-24, 2002.

23. ZAIM, A.H., ROUSKAS, G.N., PERROS, H.G., "Computing Call Blocking Probabilities in LEO Satellite Networks: The Single Orbit Case." In *Proceedings of the 17th International Teletraffic Congress (ITC 17)*, pp. 505-516, December 3-7, 2001, Salvador da Bahia, Brazil.

22. BAMPIS, E., ROUSKAS, G.N., "On Scheduling Problems with Applications to Packet-Switched Optical WDM Networks." In *Proceedings of OPTICOMM 2001*, pp. 163-172, August 19-24, Denver, Colorado.

21. DUTTA, R., ROUSKAS, G.N., "On Optimal Traffic Grooming in WDM Rings." In *Proceedings of ACM SIGMETRICS/PERFORMANCE 2001*, pp. 164-174, June 16-20, 2001, Cambridge, MA.

20. ZHU, Y., ROUSKAS, G.N., PERROS, H.G., "A Comparison of Allocation Policies in Wavelength Routing Networks." In *Proceedings of the SPIE conference on Terabit Optical Networking: Architecture, Control and Management Issues,*, vol. 4123, pp. 64-72, November 6-7, 2000, Boston, MA.

19. RAMESH, S., ROUSKAS, G.N., PERROS, H.G., "Computing Blocking Probabilities in Multi-Class Wavelength Routing Networks." In *Proceedings of NETWORKING 2000*, LNCS 1815, pp. 176-188, May 14-19, 2000, Paris, France.

18. ZHU, Y., ROUSKAS, G.N., PERROS, H.G., "Blocking in Wavelength Routing Networks, Part II: Mesh Topologies." In *Proceedings of the 16th International Teletraffic Congress (ITC 16)*, pp. 1321-1330, June 7-11, 1999, Edinburgh, UK.

17. BALDINE, I., ROUSKAS, G.N., "Dynamic Reconfiguration Policies for Broadcast WDM Networks." In *Proceedings of IEEE INFOCOM '99*, pp. 313-320, March 21-25, 1999, New York.

16. ZHU, Y., ROUSKAS, G.N., PERROS, H.G., "Blocking in Wavelength Routing Networks, Part I: The Single Path Case." In *Proceedings of IEEE INFOCOM '99*, pp. 321-328, March 21-25, 1999, New York.

15. RHEE, I., BALAGURU, N., ROUSKAS, G.N., "MTCP: Scalable TCP-like Congestion Control for Reliable Multicast." In *Proceedings of IEEE INFOCOM '99*, pp. 1265-1273, March 21-25, 1999, New York.

14. BALDINE, I., ROUSKAS, G.N., "On the Design of Dynamic Reconfiguration Policies for Broadcast WDM Networks." In *Proceedings of the SPIE conference on All-Optical Networking: Architecture, Control and Management Issues,*, vol. 3531, pp. 146-157, November 3-5, 1998, Boston, MA. **Best Paper Award.**

13. MCKINNON, M.W., ROUSKAS, G.N., PERROS, H.G., "Queueing-Based Analysis of Broadcast Optical Networks." In *Proceedings of ACM SIGMETRICS/PERFORMANCE '98*, pp. 121-130, June 22-26, 1998, Madison, Wisconsin.

12. BALDINE, I., ROUSKAS, G.N., "Dynamic Load Balancing in Broadcast WDM Networks with Tuning Latencies." In *Proceedings of IEEE INFOCOM '98*, pp. 78-85, March 29-April 1, 1998, San Francisco, California.

11. ORTIZ-LAUREANO, Z., ROUSKAS, G.N. PERROS, H.G., "Scheduling Combined Unicast and Multicast Traffic in Broadcast WDM Networks." In *Proceedings of the 1998 IFIP Conference on Performance of Information and Communications Systems (PICS '98)*, pp. 137–150, May 25-28, 1998, Lund, Sweden.

10. ORTIZ-LAUREANO, Z., ROUSKAS, G.N., PERROS, H.G., "Scheduling of Multicast Traffic in Tunable-Receiver WDM Networks with Non-Negligible Tuning Latencies." In *Proceedings of ACM SIGCOMM '97*, pp. 301-310, September 16-18, 1997, Cannes, France.

9. SIVARAMAN, V., ROUSKAS, G.N., "HiPeR-ℓ: A High Performance Reservation Protocol with ℓook-ahead for Broadcast WDM Networks." In *Proceedings of IEEE INFOCOM '97*, pp. 1272-1279, April 7-11, 1997, Kobe, Japan.

8. ROUSKAS, G.N., SIVARAMAN, V., "On the Design of Optimal TDM Schedules for Broadcast WDM Networks with Arbitrary Tuning Latencies." In *Proceedings of IEEE INFOCOM '96*, pp. 1217-1224, March 24-28, 1996, San Francisco, California.

7. ROUSKAS, G.N., BALDINE, I., "Multicast Routing with End-to-End Delay and Delay Variation Constraints." In *Proceedings of IEEE INFOCOM '96*, pp. 353-360, March 24-28, 1996, San Francisco, California.

6. ROUSKAS, G.N., AMMAR, M.H., "Minimizing Delay and Packet Loss in Single-Hop Lightwave WDM Networks Using TDM Schedules." In *Proceedings of IEEE ICC '95*, pp. 1267-1271, June 19-21, 1995, Seattle, Washington.

5. ROUSKAS, G.N., AMMAR, M.H., "Multi-Destination Communication Over Single-Hop Lightwave WDM Networks." In *Proceedings of IEEE INFOCOM '94*, pp. 1520-1527, June 14-16, 1994, Toronto, Ontario, Canada.

4. ROUSKAS, G.N., AMMAR, M.H., "Dynamic Reconfiguration in Multihop WDM Networks." In *Proceedings of ICCCN '94*, pp. 391-395, September 11-14, 1994, San Francisco, California.

3. ROUSKAS, G.N., AMMAR, M.H., "Analysis and Optimization of Transmission Schedules for Single-Hop WDM Networks." In *Proceedings of IEEE INFOCOM '93*, pp. 1342-1349, March 30 - April 1, 1993, San Francisco, California.

2. ROUSKAS, G.N., AMMAR, M.H., "On the Design of Dynamic Configuration Policies for Multihop WDM Networks." In *Proceedings of Photonics '93*, September 1993, Atlanta, GA.

1. AMMAR, M.H., ROUSKAS, G.N., "On the Design of Protocols for Collecting Responses over a Multiple-Access Channel." In *Proceedings of IEEE INFOCOM '91*, pp. 1490-1499, March 1991, Miami, Florida.

Conference Proceedings (invited)

18. ROUSKAS, G.N., BANDIKATLA, C., "Scalable Recursive First Fit: An Optimal Solution to the Spectrum Allocation Problem." *Proceedings of the 25th Conference on Optical Network Design and Modeling (ONDM 2018)*, June 28-July 1, 2021, Gothenburg, Sweden.

17. BHAT, S., ROUSKAS, G.N., "Open Marketplace and Service Orchestration for Virtual Optical Networks." *Proceedings of the 22nd Conference on Optical Network Design and Modeling (ONDM 2018)*, May 14-17, 2018, Dublin, Ireland.

16. TALEBI, S., FURQAN, A., KATIB, I., ROUSKAS, G.N., "Spectrum Assignment in Rings With Shortest Path Routing: Complexity and Approximation Algorithms." *Proceedings of the International Conference on Computing, Networking and Communications (ICNC 2015)*, February 16-19, 2015, Anaheim, California.

15. DUTTA, R., ROUSKAS, G.N., BALDIN, I., "Traffic Grooming: Balancing Choice and Service in Optical Networks." *Proceedings of Advanced Photonics for Communications*, July 13-17, 2014, San Diego, California.

14. DUTTA, R., ROUSKAS, G.N., BALDINE, I., "Converging Choice and Service in Future Commodity Optical Networks Using Traffic Grooming." *Proceedings of 15th International Conference on Transparent Optical Networks (ICTON 2013)*, June 23-27, 2013, Cartagena, Spain.

13. ROUSKAS, G.N., BALDINE, I., CALVERT, K., DUTTA, R., GRIFFIOEN, J., NAGURNEY, A., WOLF, T., "ChoiceNet: Network Innovation Through Choice." *Proceedings of the 17th Conference on Optical Network Design and Modeling (ONDM 2013)*, April 16-19, 2013, Brest, France.

12. WANG, H., LIU, Z., ROUSKAS, G.N., "Scalable Traffic Grooming in Optical Networks." *Proceedings of Asia Communications and Photonics Conference (ACP 2012)*, November 7-10, 2012, Guangzhou, China.

11. DUTTA, R., BALDINE, I., WANG, A., IYER, M., ROUSKAS, G.N., "Architectural Support for Internet Evolution and Innovation." *Proceedings of IEEE ANTS 2010*, December 16-18, 2010, Mumbai, India.

10. KARMOUS-EDWARDS, G., VISWANATH, A., REEVES, D.S., BATTESTILLI, L., VEGESNA, P., ROUSKAS, G.N. "ERONs: Dynamic Lightpath Networking via Overlay Control of Static Optical Connections." *Proceedings of the 11th Conference on Optical Network Design and Modeling (ONDM 2009)*, February 18-20, 2009, Braunschweig, Germany.

9. ROUSKAS, G.N., DUTTA, R., BALDINE, I. "A New Internet Architecture to Enable Software Defined Optics and Evolving Optical Switching Models." *Proceedings of the 8th Workshop on Optical Burst/Packet Switching (WOBS 2008)*, September 8, 2008, London, UK.

8. IYER, M., ROUSKAS, G.N., DUTTA, R., "Hierarchical Grooming in Multigranular Networks." *Proceedings of the Advanced Networks and Telecommunications Systems Conference (ANTS 2007)*, December 17-18, Mumbai, India.

7. ROUSKAS, G.N., "Tiered Service in Packet-Switched Networks." In *Proceedings of the IEEE Computer Communications Workshop*, February 5-7, 2006, Pittsburgh, PA.

6. ROUSKAS, G.N., "Multicast Routing Under Optical Layer Constraints." In *Proceedings of the IEEE Computer Communications Workshop*, October 13-16, 2002, Santa Fe, New Mexico.

5. ROUSKAS, G.N., "`Jumpstart`: A Just-in-Time Signaling Architecture for WDM Burst-Switched Networks." In *Proceedings of the IEEE LEOS Summer Topicals*, July 15-17, 2002, Mont Tremblant, Quebec, Canada.

4. Xu, L., Perros, H.G., Rouskas, G.N., "Access Protocols for Optical Burst-Switched Ring Networks." In *Proceedings of the 6th Joint Conference on Information Sciences (JCIS 2002)*, pp. 1287-1290, March 8-13, 2002, RTP, North Carolina.

3. Dutta, R., Rouskas, G.N., "Bounds on Traffic Grooming in Star and Tree Networks." In *Proceedings of the 39th Allerton Conference on Communication, Control, and Computing*, October 3-5, Monticello, Illinois, 2001.

2. Dutta, R., Rouskas, G.N., "Topology Design in WDM Rings to Minimize Electronic Routing: Efficient Computation of Tight Bounds." In *Proceedings of the 38th Allerton Conference on Communication, Control, and Computing*, pp. 1284-1293, October 4-6, Monticello, Illinois, 2000.

1. Rouskas, G.N., "A Comparison of Allocation Policies in Wavelength Routing Networks." In *Proceedings of the 37th Allerton Conference on Communication, Control, and Computing*, pp. 669-678, September 22-24, Monticello, Illinois, 1999.

Tutorials

4. Rouskas, G.N., "Tutorial on Network Virtualization." Presented at the *OFC 2012* Conference, March 2012, Los Angeles, California.

3. Rouskas, G.N., "Tutorial on Traffic Grooming and Multigranular Switching in Optical WDM Networks." Presented at the *NETWORKING 2004* Conference, May 9, 2004, Athens, Greece.

2. Rouskas, G.N., "Tutorial on Traffic Grooming and Multigranular Switching in Optical WDM Networks." Presented at the *IEEE INFOCOM 2004* Conference, March 7, 2004, Hong Kong.

1. Rouskas, G.N., Perros, H.G., "Tutorial on Optical Networks." In E. Gregori *et al.*, (editors), *Advanced Lectures on Networking: Networking 2002 Tutorials*, Springer-Verlag LNCS 2497, pp. 155-193, 2002. Presented at the *NETWORKING 2002* Conference, May 19, 2002, Pisa, Italy.

Keynotes, Distinguished Lectures, and Panels

- Distinguished Lecture (virtual), Institute of Broadband Research and Innovation, Soochow University, China, October 2021.

- Distinguished Lecture (virtual), Istanbul Commerce University, Turkey, May 2021.

- Distinguished Lecture (virtual), Department of Computer and Information Sciences, Temple University, February 2021.

- Distinguished Lecture (virtual), School of Science, Beijing University of Posts and Telecommunications, Beijing, China, September 2020.

- Distinguished Lecture, CE Department, National Technical University of Athens, June 2019

- Distinguished Lecture, CSE Department, University at Buffalo, April 2019

- Panel on "Innovation Opportunities in Transport Networks from Network Analytics and Machine Learning." OFC 2019, March 2019.

- Panel on "Future Directions for IoT." IEEE MASS 2018, October 2018.

- Distinguished Lecture, East Carolina University, April 2017

- Distinguished Lecture, National Conference for Colleges of Computing (NC3), Jeddah, Saudi Arabia, February 2016

- Distinguished Lecture, King Abdulaziz University, Saudi Arabia, April 2015

- Distinguished Lecture, King Abdulaziz University, Saudi Arabia, February 2014

- Distinguished Lecture, King Abdulaziz University, Saudi Arabia, May 2013

- CS Distinguished Lecture, Iowa State University, April 2012

- Panel on "Future Internet: Do We Need Fundamentally New Designs?." IEEE LANMAN workshop, Chapel Hill, NC, October 2011

- Keynote, ICIIS Conference, Kandy, Sri Lanka, August 2011

- IEEE Distinguished Lecture, University of Colombo, Sri Lanka, August 2011

- IEEE Distinguished Lecture, University of Moratuwa, Sri Lanka, August 2011

- IEEE Distinguished Lecture, The University of West Indies, Kingston, Jamaica, May 2011

- IEEE Distinguished Lecture, IEEE Communications Society Chapter, Orlando, FL, May 2011

- IEEE Distinguished Lecture, University of Alabama at Huntsville, Huntsville, AL, May 2011

- IEEE Distinguished Lecture, University of Alabama at Birminham, Birmingham, AL, October 2010

- IEEE Distinguished Lecture, Verizon, Temple Terrace, FL, October 2010

- IEEE Distinguished Lecture, IEEE Communications Society Chapter, Orlando, FL, October 2010

- IEEE Distinguished Lecture, AT&T Research, Middletown, NJ, August 2010

- IEEE Distinguished Lecture, DRS Technologies, Gaithersburg, MD, August 2010

- IEEE Distinguished Lecture, IEEE Communications Society Chapter, Baltimore, MD, August 2010

- Keynote, INFORMS Telecom, Montreal, Canada, May 2010

- Panel, OFC Conference, San Diego, CA, March 2010

- Keynote, Euro-NGI Conference, Aveiro, Portugal, July 2009

- Distinguished Lecture, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile, November 2008

- Distinguished Presentation, IEEE ICCCN Conference, Saint Thomas, August 2008

- Keynote, 5th Workshop on Optimization of Optical Networks, Montreal, Canada, May 2008

- Panel, ONDM Conference, Vilanova i la Geltru, Spain, March 2008

- Panel, BROADNETS conference, San Jose, CA, October 2006

- Distinguished Lecture, University of Evry, France, July 2006

- Panel, UNC Teaching and Learning with Technology (TLT) conference, Chapel Hill, NC, March 2006

- Distinguished Lecture, Carleton University, Canada, December 2005

- Distiguished Lecture, National Technical University of Athens, Greece, June 2004

- Distiguished Lecture, Athens Institute of Technology, Greece, June 2004

- Distiguished Lecture, University of Patras, Greece, May 2004

Funded Research Proposals and Grants

CNS Core:Small:On Parallelizing Optical Network Design Problems:Towards Network Optimization as a Service (PI: Rouskas)
National Science Foundation
Amount: $440,000, October 2019-September 2022

Graduate Industrial Traineeships (PI: Rouskas)
SAS, Genworth, RENCI
Amount: $460,000, June 2014-May 2020

Cisco Internship Program (PIs: Rouskas, Ning)
Cisco
Amount: $160,000, May 2011-December 2012

NeTS: Large: Collaborative Research: ChoiceNet: Network Innovation Through Choice (NC State PIs: Rouskas, Dutta)
National Science Foundation
Amount: $643,917 (total budget: $2.732M), September 2011-December 2015

NeTS: Small: Computationally Scalable Aware Optical Network design (PI: Rouskas)
National Science Foundation
Amount: $430,000, August 2011-July 2016

SURFnet GigaPort3 Research Plan (PIs: Rouskas, Karmous-Edwards)
SURFnet
Amount: $280,000, July 2009-May 2012

GENI IMF: Integrated Measurement Framework and Tools for Cross Layer Experimentation (PIs: Dutta, Rouskas)
GENI Program Office
Amount: $420,000, October 2009-September 2012

Edge Reconfigurable Optical Networks (ERONs) for High-Performance Applications (PIs: Rouskas, Reeves)
DARPA
Amount: $250,000, July 2008- December 2009

CPATH-CB: Computing Across Curricula
National Science Foundation
Amount: $275,000, July 2007-June 2010

An Intelligent Second-Life VCL-Based Computing Lab (PIs: Rouskas, Young)
IBM Faculty Award
$30,000, July 2007

Lambda Scheduling for Grid Applications
NC State Center for Advanced Computing and Communication (CACC)
Amount: $40,000, July 2007-June 2008

Learning with In-class Technology (LIT): The 15-Minute Learning Module Approach
NC State LITRE
Amount: $8,000, June 2006-May 2007

Collaborative Research: NeTS-FIND: The SILO Architecture for Services Integration, controL, and Optimization for the Future Internet (PIs: Rouskas, Dutta)
National Science Foundation
Amount: $228,000 (total budget: $408,000), September 2006-May 2010

Integration of Network Survivability Concepts in an MS in Computer Networking Curriculum (PIs: Dutta, Rouskas)
Microsoft Trustworthy Computing Curriculum
Amount: $50,000, January 2006-December 2006

Traffic Quantization: A Formal Approach To Scalability in Packet-Switched Networks
National Science Foundation
Amount: $357,000, September 2004-August 2009

A Formal Approach to Traffic Grooming in Optical Networks with General Topologies (PIs: Rouskas, Dutta)
National Science Foundation
Amount: $405,000, September 2003-August 2006

Transparent Optical Network Management and Routing with Just In Time Signaling (PIs: Rouskas, Perros)
NSA LTS
Amount: $327,000 (total budget: $1,350,000), January 2003-December 2004

Optical Network Lab Equipment
MCNC-RDI
Amount: $640,000 (six Optera WDM switches with SONET and Gigabit Ethernet interfaces), August 2003

Engineering Online Student Access to Internet Lab
NC State DELTA
Amount: $10,000, January 2003-June 2003

Access Protocols for Multicasting in an Optical Burst Switching Metro Ring (PIs: Perros, Rouskas)
Alcatel
Amount: $45,000, January 2002-September 2003

Performance Analysis and Alternate Routing for Just In Time Optical Burst Switching Networks (PIs: Rouskas, Perros, Franzon)
NSA LTS
Amount: $437,000 (total budget: $1,500,000), January 2002-June 2003

Performance Evaluation of IPv6 Tunneling
IBM Faculty Award (PIs: Devetsikiotis, Rouskas)
Amount: $40,000, July 2001

Research in Optical Burst Switching (PIs: Perros, Rouskas)
NC State Center for Advanced Computing and Communications (CACC)
Amount: $43,000, July 2001-June 2002

Multicast Support for Just In Time Optical Burst Switching Networks (PIs: Rouskas, Perros)
NSA LTS
Amount: $70,000 (total budget: $500,000), October 2000-March 2001

Project: Optical Burst-Switched Ring Networks (PIs: Perros, Rouskas)
NC State Center for Advanced Computing and Communications (CACC)
Amount: $35,000, July 2000-June 2001

Regional Testbed Optical Access Network for IP, Multicast, and Differentiated Services
DARPA Next Generation Internet (NGI) Program
Amount: $214,000 (total budget: $1,800,000), March 2000-March 2002

Networking Lab Equipment
  HP U.S. University Equipment Grants
  Amount: $159,190 (50 HP Kayak workstations and 3 laser printers), December 1999

Internet Teaching Lab
  CAIDA Internet Teaching Laboratories (ITL) Initiative
  Amount: $100,000 (4 Cisco Routers)i, October 1999

Performance Analysis of Wavelength Routed Wide Area Networks (PIs: Rouskas, Perros)
  National Science Foundation
  Amount: $255,000, September 1998-August 2002

MTCP: TCP-like Congestion Control for Reliable Multicast (PIs: Rhee, Rouskas)
  NC State Center for Advanced Computing and Communications (CACC)
  Amount: $78,000, July 1998-June 2000

Towards an All-Optical Network Infrastructure: Interconnection of Photonic WDM Broadcast-and-Select
  Local Area Networks
  National Science Foundation (CAREER)
  Amount: $200,000, September 1997-August 2002

All-Optical Solutions to ATM Switching
  NC State Center for Advanced Computing and Communications (CACC)
  Amount: $40,000, July 1995-June 1996

Multicasting for Multimedia Applications
  NC State Faculty Development and Research Support
  Amount: $5,000, January 1995-June 1995

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III. Leadership and Service

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Society Memberships

Fellow, Institute of Electrical and Electronics Engineers, Communications Society

Member, Association for Computing Machinery, also Special Interest Group on Computer Communications

IEEE Leadership

Chair, IEEE Communications Society Distinguished Lecturer Selection Committee, 2016-2017

Vice Chair, IEEE Communications Society Technical and Educational Activities Council, 2016-2017

Vice Chair, IEEE Communications Society TCs Recertification Committee, 2016-2017

Chair, IEEE Communications Society Optical Networking Technical Committee (ONTC), 2016-2017

Vice Chair, IEEE Communications Society Optical Networking Technical Committee (ONTC), 2014-2015

Secretary, IEEE Communications Society Optical Networking Technical Committee (ONTC), 2012-2013

Technical Journal Leadership

Founding Editor-in-Chief, *IEEE Networking Letters,* 2018-2021

Founding Editor-in-Chief, *Optical Switching and Networking,* Elsevier, 2004-2017

Conference Committee Leadership

Awards Chair, *IEEE GLOBECOM 2023*, Kuala Lumpur, Malaysia, December 4-8, 2024.

Executive Chair, *ICCCN 2023*, Honolulu, Hawaii, July 24-26, 2023.

Member, Steering Committee, *OFC Conference*, 2018-2023

Executive Chair, *ICCCN 2022*, Honolulu, Hawaii (virtual conference), July 25-27, 2022.

TPC Co-Chair, *DRCN 2022*, Vilanova, Spain, March 28-31, 2022.

TPC Co-Chair, *IEEE MeditCom 2021*, Athens, Greece, September 7-10, 2021.

General Chair, *ICCCN 2021*, Athens, Greece (virtual conference), July 19-22, 2021.

Chair, Steering Committee, *IEEE LANMAN*, 2015-2018

General Co-Chair, *IEEE MASS 2018*, Chengdu, China, October 9-12, 2018.

Program Co-Chair, *IEEE ICC 2017, Optical Networks and Systems (ONS) Symposium*, Paris, France, May 21-25, 2017.

General Co-Chair, *IEEE ICNP 2014*, Raleigh, NC, October 21-24, 2014.

GENERAL CHAIR, *ICCCN 2013*, Nassau, Bahamas, July 30-August 2, 2013.

PROGRAM CO-CHAIR, *ICCCN 2011*, Maui, Hawaii, August 1-4, 2011.

PROGRAM CO-CHAIR, *IEEE Globecom 2010, Optical Networks and Systems (ONS) Symposium*, Miami, FL, November 28-December 3, 2010.

PROGRAM CO-CHAIR, *ICCCN 2009, Internet Services, Systems and Applications (ISSA) Track*, San Francisco, CA, August 2-6, 2009.

GENERAL CO-CHAIR, *International Conference on Broadband Communications, Networks, and Systems (BROADNETS 2007)*, Raleigh, NC, September 10-13, 2007

GENERAL CO-CHAIR, *14th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN 2005)*, Chania, Crete, Greece, September 18-21, 2005.

PROGRAM CO-CHAIR, *Workshop on Traffic Grooming (WTG 2004)*, October 29, 2004, San Jose, CA

TECHNICAL PROGRAM CHAIR, *13th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN 2004)*, April 25-28, 2004, San Francisco, CA

TECHNICAL PROGRAM CO-CHAIR, *IFIP Networking 2004*, May 9-14, 2004, Athens, Greece

Editorial and Review Work for Technical Journals and Publishers

ASSOCIATE EDITOR, *IEEE/OSA Journal of Communications and Networking,* 2010-2012

CO-GUEST EDITOR, *JCM Journal of Communications,* Special Issue on the "Advances in Communications and Networking," vol. 6, no. 9, December 2011.

ASSOCIATE EDITOR, *IEEE/ACM Transactions on Networking,* 2000-2004

ASSOCIATE EDITOR, *Computer Networks,* 2001-2004

ASSOCIATE EDITOR, *Optical Networks,* 2000-2004

CO-GUEST EDITOR, *IEEE Journal on Selected Areas in Communications,* Special Issue on "Protocols for Next Generation Optical WDM Networks," vol. 18, no. 10, October 2000.

REVIEWER, Morgan Kaufmann, John Wiley and Sons, Cambridge University Press, Springer, IEEE Transactions on Networking, IEEE Transactions on Computers, IEEE Transactions on Communications, IEEE/OSA Journal of Lightwave Technology, IEEE/OSA Journal of Optical Communications and Networking, IEEE Journal on Selected Areas in Communications, Computer Networks Journal, International Journal of Performance Evaluation, European Transactions on Telecommunications, Photonic Network Communications Journal, IEEE Computer Magazine, IEEE Communications Magazine, IEEE Network Magazine, and numerous conferences

PROPOSAL REVIEW PANELIST, National Science Foundation – on numerous occasions

Conference Program Committees

IEEE GLOBECOM: 2003-2023

IEEE ICC: 2003-2023

IEEE LANMAN: 2007-2023

IEEE INFOCOM: 2007-2013, 2004, 1996-1998

ONDM: 2014-2023, 2009, 2005

IFIP NETWORKING: 2023, 2019, 2005-2012

OSA NETWORKS: 2017-2019

OFC/NFOEC: 2008-2010

Euro NGI: 2008-2011

EuCNC: 2015-2017

ACM CoNEXT Cloud Assisted Networking: 2016-2017

TEMU: 2012-2016

Networks: 2008-2016

DRCN: 2019-2021, 2015, 2011

NOC: 2014-2015

IEEE NFV-SDN: 2015

ITC: 2013

IEEE ICNP: 2013, 2008, 1997

ICCCN: 2012, 2006

ICNC: 2020, 2012

IEEE ANTS: 2011, 2009, 2008

RNDM: 2010-2011

ACP: 2010

ReArch Workshop: 2009-2010

INFORMS Telecom: 2010

WOBS: 2009, 2003-2005

BROADNETS: 2004-2006

IEEE HPSR Workshop: 2019, 2003-2005

OPTiCOMM: 2000-2003

SPIE Conference on All-Optical Networking: 1998-1999

NC State: University Committees

MEMBER, Administrative Board of the Graduate School (ABGS), 2016-2018

JUDGE, Graduate Student Research Symposium, 2018, 2014

MEMBER, Microsoft Research Faculty Fellowship Review Commitee, 2012-2013

MEMBER, DELTA IDEA grant review committee, 2004-2005

MEMBER, DELTA Advisory Committee, 2003-2005

CHAIR, DELTA Subcommittee on Intellectual Property, 2003-2005

MEMBER, Alumni Outstanding Research Awards Selection Committee, 2004

NC State: College of Engineering Committees

MEMBER, University Faculty Scholar Selection Committee, 2012-2014

MEMBER, ALCOA Awards Committee, 2012-2013

MEMBER, College Reappointment, Promotion, and Tenure (RPT) Committee, 2008-2011

textscMember, College Research Committee, 2007-2008

MEMBER, CSC Head Search Committee, 2004-2006

MEMBER, Engineering Online Advisory Committee, 2003-2005

MEMBER, CSC Review Survey Committee, 1998-1999

MEMBER, Admissions Standards Committee, MS in Computer Networking, 1998-1999

NC State: Department of Computer Science Committees

CHAIR, Networking faculty search committee, 2021-2022

MEMBER, Reappointment, Promotion, and Tenure (RPT) Committee, 2017-present

CHAIR, Strategic Planning Committee, 2009-2012

MEMBER, Graduate Student Admissions Committee, 2011-2012

MEMBER, Awards Committee, 2009-2012

MEMBER, Faculty Recruiting Committee, 2008-2009

COURSE COORDINATOR, CSC 316 (Data Structures), 2005-2017

MEMBER, Computing Infrastructure Committee, 2006-2010

CHAIR, Minority Recruiting Committee, 2006-2007

MEMBER, Committee for External Evaluation Visit, Fall 2004

MEMBER, Strategic Planning Committee, 2003-2004

MEMBER, Research Productivity Committee, 2003-2004

MEMBER, Strategic Planning Committee, 2002-2005

CHAIR, Faculty Recruiting Committee, 2001-2002

CHAIR, Faculty Recruiting Committee, 2000-2001

PEER EVALUATOR, 23 teaching evaluations, 1999-present

MEMBER, Graduate Student Admissions Committee, 1996-1998

MEMBER, PhD Qualifying Exam Committee, 1994-1996

NC State: Operations Research and ECE Committees

MEMBER, OR Graduate Student Admissions Committee, 2012-2013, 2005-2007

MEMBER, ECE Faculty Recruiting Committee, 1999-2000

Other National and International Activities

MEMBER, International Advisory Committee, Scuola Superiore Sant'Anna, Pisa, Italy, 2013-2014

MEMBER, Committee of Visitors (CoV), DoE Networking Research Program, 2011

MEMBER, Best Paper Award Committees

IEEE ICC, 2021
IEEE/OSA Journal of Optical Communications and Networking, Charles Kao Award, 2015-2017
IEEE ICC, 2016
ICNC, 2015
ACP, 2012, 2009
IEEE INFOCOM, 2011
IEEE ANTS, 2010

IEEE FELLOW NOMINATOR, four cases, 2018-present

IEEE FELLOW REFERENCE, 19 cases, 2012-present

EXTERNAL REVIEWER for the promotion to Full Professor, 26 cases, 2004-present

EXTERNAL REVIEWER for the promotion to Associate Professor with tenure, 29 cases, 2000-present