

# Curriculum Vitae

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## 1 Education

1998	Ph.D. (CS)	University of California, Davis, CA.
<i>Dissertation: Efficient Design of Wavelength Division Multiplexing (WDM) Based Optical Networks.</i>		
<i>Advisor: Prof. Biswanath Mukherjee.</i>		
1995	M.S. (CS)	University of California, Davis, CA.
1993	B.Tech (CS)	Indian Institute of Technology, Madras, India.

## 2 Employment

2003 – present	Associate Professor	University of Nebraska–Lincoln, Lincoln, NE.
2009	Visiting Researcher	AT&T Labs-Research, NJ.
2009	Visiting Faculty	Indian Institute of Technology-Madras, Chennai, India.
1998- 2003	Assistant Professor	University of Nebraska–Lincoln, Lincoln, NE.
1995	Summer Intern	Silicon Graphics Inc, Mountainview, CA.
1994–1998	Research Assistant	Networks Laboratory, UC Davis, CA.
1993–1994	Teaching Assistant	Dept. of Computer Science, UC Davis, CA.

## 3 Honors and Awards

2008	Invited to serve as TPC Co-Chair for IEEE INFOCOM 2011 conference, Shanghai, P.R. China, April 2011 (the top conference in computer networking).
2007	Elected by the Optical Networking Technical Committee (ONTC) of IEEE Communications Society (ComSoc) to be ONTC Vice Chair (2007-2009) and ONTC Chair (2009-2011).
2007	The UNL CSE Dept. Students Choice Award for Outstanding Teaching of Graduate-level Courses.
2003	The UNL CSE Dept. Students Choice Award for Outstanding Teaching of Graduate-level Courses.
2000-2001	Outstanding Researcher Award (Assistant professor rank), College of Engineering & Technology, University of Nebraska-Lincoln.
1995–1996	Fellow, Professors for the Future Program, UC Davis.
1993–1998	Non-Resident Tuition Fellowship, UC Davis.
1989–1993	National Talent Search Scholarship awarded by the Government of India.

## 4 Funding Record

### Highlights

- Dr. Ramamurthy is/was PI/Co-PI on external grants totaling over \$5.5M and on internal grants totaling over \$1.8M since 1998.
- External funding sources include federal agencies such as NSF, USDA, DOE as well as industry such as AT&T Corp. and Agilent Technologies Inc.
- Has had continuous federal funding for his research projects since 2000.
- Served as the PI of a large NSF Research Infrastructure Improvement (RII) grant (with a budget close to \$2M).
- His grants have been used to support graduate students and to build the computing, networking, storage and visualization infrastructure at UNL.
- Has been successful in obtaining funds for supporting scholarships (from NSF) and recruiting programs at UNL.

### 4.1 External Funding

1. Dynamic optimized advance scheduling of bandwidth demands for large-scale science applications; Sponsor: U.S. Department of Energy (DOE); Investigators: Ramamurthy, B. (Sole PI); External Funds: \$449,976; Internal Funds: \$45,331; Start: 10/01/2009; End: 09/30/2012; Status: Award in process; Received technical approval from DOE Office of Science.

2. Multi-layer survivability in telecommunication networks; Sponsor: AT&T (Virtual University Research Initiative); Investigators: Ramamurthy, B. (Sole PI); External Funds: \$20,000; Start: 03/01/2009; End: 02/28/2010; Status: Funded. Funds faculty salary, travel and equipment purchase at UNL.
3. GpENI: Great Plains Environment for Network Innovation; Sponsor: **NSF** (through GENI Project Office at BBN); Investigators: Ramamurthy, B. (Co-PI and UNL Campus PI) with Sterbenz, James (University of Kansas) (PI) and others; External Funds: \$460,000 (UNL Share: \$110,832); UNL Internal Funds: \$35,000; Start: 10/01/2008; End: 09/30/2011; Status: Funded. Funds faculty salary, graduate student, travel and high-end switching equipment purchase at UNL.
4. Integrated Real-Time Groundwater-Level Monitoring Network to Support Drought Impact Assessment and Mitigation Programs; Sponsor: **U.S. Department of Agriculture (USDA) - RMA**; Investigators: Ramamurthy, B. (Co-PI) with Burbach, Mark (PI) and others; External Funds: \$403,293; Start: 09/21/2005; End: 05/31/2009; Status: Funded. Supports Ms. Yuyan Xue, Ph.D. student at UNL CSE as well as sensor equipment purchased by Dr. Ramamurthy (over \$200K).
5. Increasing participation in computer science, engineering and mathematics through scholarships; Sponsor: **NSF**; Investigators: Ramamurthy, B. (Co-PI) with Woodward, G. (PI) and Ballard, J., Goddard, S.M., Lee, K. (Co-PIs); External Funds: 400,000; Start: 09/01/2004; End: 08/31/2008; Status: Funded. Provides scholarships of around \$3000 per year to around 30 UNL CSE, Math and Engg. undergrad students.
6. Building the Regional Middleware Infrastructure across the Great Plains; Sponsor: Educause Extending the Reach Program; Investigators: Ramamurthy, B. (Co-PI) with Apon, Amy (University of Arkansas) (PI) and others; External Funds: \$75,000; Start: 06/01/2004; End: 05/31/2006; Status: Funded. Supported the work of Mr. Garhan Attebury, UNL CSE MS Student.
7. Secure Group Communications (SGC) over Wired and Wireless Networks Sponsor: **NSF**; Investigators: Ramamurthy, B. (PI) with X. Zou (Co-PI) and V. Variyam (Co-PI); External Funds: \$349,990; Start: 08/01/2003; End: 06/30/2007; Status: Funded. Supported several UNL CSE graduate students including Dr. Yong Wang (Ph.D.), Geng Hao, Sarang Deshpande and Ravi Balachandran (MS).
8. MRI: Acquisition of High Performance Computing and Data Visualization for Scientists and Engineers; Sponsor: **NSF**; Investigators: Ramamurthy, B. (Co-PI) with Sincovec, R.F. (PI) and others; External Funds: \$500,000; Internal Funds (Match): \$225,000; Start: 08/01/2003; End: 07/31/2006; Status: Funded. Supported the upgrade of Research Computing Facility computing equipment including SGI Origin 300 machine as well as Access Grid equipment.
9. Increasing Participation in Computer Science, Engineering and Mathematics through Scholarship; Sponsor: **NSF**; Investigators: Ramamurthy, B. (Co-PI) with Scofield, S. (PI) and Goddard, S.M. (Co-PI); External Funds: \$270,000; Start: 08/01/2001; End: 07/31/2003; Status: Funded. Provided scholarships of around \$3000 per year to around 30 UNL CSE, Math and Engg. undergrad students.
10. Secure Distributed Information (SDI) Infrastructure at the University of Nebraska (part of the Nebraska EPSCoR Infrastructure Improvement Grant: Dr. Royce E. Ballinger (PI) and Dr. F. Fred Choobineh (Co-PI)); Sponsor: **NSF**; Investigators: Ramamurthy, B. (Lead PI and Co-PD) with Jiang, H. (Co-PD), Swanson, D., Finkelson, D., and Hendrickson, K.; External Funds: \$1,937,478; Internal Funds: \$1,126,575; Start: 03/01/2001; End: 02/01/2004; Status: Funded. Supported 2 Post-docs, over 35 graduate students, around 5 undergraduate students at UNL and provided research facilities for their work such as the PrairieFire Supercomputer (ranked 8th fastest among US academic institutions), Access Grid facility and storage resources.
11. Next Generation Enterprise Resource Planning (ERP) Systems (part of the Nebraska EPSCoR Infrastructure Improvement Grant: Dr. Royce E. Ballinger (PI) and Dr. F. Fred Choobineh (Co-PI)); Sponsor: **NSF**; Investigators: Ramamurthy, B. (Co-PI) with Choobineh, F.F. (PI) and others. External Funds: \$1,214,937; Internal Funds: \$1,360,743; Start: 03/01/2001; End: 02/01/2004; Status: Funded. Supported several projects including one led by Dr. Ramamurthy and Dr. Variyam (CSE) on Secure E-Services.
12. Routing and Wavelength Assignment Tool for Optical WDM Networks; Sponsor: **Agilent Technologies Inc.**; Investigators: Ramamurthy, B. (PI-UNL) and Mukherjee, B. (PI-UC Davis); Sponsor Funds: \$43,241 (at UNL); Start: 06/01/2000; End: 07/31/2001 Status: Funded. Supported a graduate student, Mr. Sree Rama Nomula (MS).
13. REU Supplement to NSF project entitled "Design of Translucent WDM Optical Networks"; Sponsor: **NSF**; Investigators: Ramamurthy, B. (Sole PI); External Funds: \$15,000; Start: 08/01/2003; End: 05/31/2004; Status: Funded. Supported undergraduate students, Francis Ridder and Jeremiah Wessels (both CSE).

14. Design of Translucent WDM Optical Networks; Sponsor: **NSF**; Investigators: Ramamurthy, B. (Sole PI); External Funds: \$271,023; Start: 01/01/2000; End: 05/31/2004; Status: Funded. Supported several graduate students including Xi Yang (PhD), Srinath Yaragorla (MS) and Ling Zhong (MS).

## 4.2 Internal Funding

1. Developing a regional climate modeling facility at UNL; Sponsor: UNL Office of Research - Strategic Research Clusters program; Investigators: Oglesby, R.J. (PI), Ramamurthy, B. (Co-PI) and others; External Funds: \$50,000; Start: 07/01/2008; End: 06/30/2009; Status: Funded.
2. Bio-Inspired Peer-to-Peer Network Symbiosis: From Competition to Cooperation; Sponsor: UNL Office of Research - Layman program; Investigators: Xu, L. (PI) and Ramamurthy, B. (Co-PI); External Funds: \$10,000; Start: 05/01/2008; End: 04/30/2009; Status: Funded.
3. Nebraska Rural Broadband project; Sponsor: State of Nebraska/UNL; Investigators: Ramamurthy, B. (PI); Sponsor Funds: \$40,870; Start: 2/1/2007; End: 06/30/2007; Status: Funded.
4. Adaptive Decision Support System for Water Management; Sponsor: UNL PoE on Water Resources Research Initiative Seed Grant; Investigators: Ramamurthy, B. (Co-PI) with Woldt, W. (PI) and others; Sponsor Funds: \$19,900 (no indirect costs); Start: 07/1/2006; End: 06/30/2007; Status: Funded.
5. High-Performance Arts Applications over Internet2; Sponsor: UNL Office of Research; Investigators: Ramamurthy, B. (Co-PI) with Richmond, John (PI) and others; External Funds: \$20,000; Internal Funds: 0; Start: 08/31/2005; End: 05/31/2006; Status: Funded.
6. Integrated Wireless Systems for Assistive Technology; Sponsor: UNL Strategic Clusters Grant Program; Investigators: Ramamurthy, B. (Co-PI) with L. Perez (PI) and others; Sponsor Funds: \$50,000; Matching Funds: \$30,000; Start: 07/01/2004; End: 06/30/2006; Status: Funded.
7. Program checking infrastructure for cybersecurity applications; Sponsor: UNL Layman program; Investigators: Ramamurthy, B. (Co-PI) with V. Variyam (PI); Sponsor Funds: \$10,000; Start: 08/01/2004; End: 07/31/2005; Status: Funded.
8. A Phenological Network for Ecological Viticulture Sponsor: ARD Interdisciplinary Research Program, UNL; Investigators: Ramamurthy, B. (Co-PI) with P.E. Read (PI) and others; Sponsor Funds: \$39,000; Start: 07/01/2004; End: 06/30/2006; Status: Funded.
9. Academic Program Priorities Programs of Excellence (PoE) in the areas of Simulation and Computing Engineering (SCE) and Information Technology and Telecommunications (ITT); Sponsor: University of Nebraska-Lincoln; Investigators: Ramamurthy, B. (Coordinator and Co-Director) with Sincovec, R.F. (Director) and others; Internal Funds: \$260,000 (year one), approx. \$1.6M over five years and continuing funds for faculty lines in CSE and staff support for RCF; Start: Fall 2002; End: Ongoing; Status: Funded.
10. Control and Management Framework for Next-Generation Optical WDM Networks; Sponsor: Layman Awards (UNL); Investigators: Ramamurthy, B. (PI); Sponsor Funds: \$7,500; Internal Funds: 0; Status: Funded.
11. Architectures and Protocols for the Next-Generation Optical Networks; Sponsor: UNL Research Council (Grant-In-Aid Award); Investigators: Ramamurthy, B. (PI); Sponsor Funds: \$4,000; Start: 01/01/1999; End: 12/31/1999; Status: Funded.

## 4.3 Other Funding

In addition, Dr. Ramamurthy has participated in the preparation of the following proposal and project activities. The list also includes funded proposals to industry for software licenses and equipment donation.

1. Great Plains Software Initiative; Sponsor: Federal Congressional Earmark funds; Investigators: Reichenbach, S.M. (PI) and others; External Funds: \$800,000; Start: 2002 (Est.); Status: Funded.
2. The Water Resources Research Initiative (WRRI); Sponsor: UNL Program of Excellence (PoE) Priority funds; Investigators: Hoagland, K. (PI) and others; Role: Member, WRRI Steering Committee (appointed by VCR Dr. Prem Paul, UNL) Sponsor Funds: \$1,600,000 (approx.); Duration: 2003-current; Status: Funded.
3. OPNET Software Licenses (for research and teaching); Sponsor: OPNET Inc.; Investigators: Ramamurthy, B. (PI); Duration: 2003-current (30 OPNET Modeler and WDMGuru licenses renewed annually); Status: Funded.
4. HP computers for Planetlab (for research and teaching); Sponsor: Hewlett-Packard Corp. ; Investigators: Ramamurthy, B. (PI); Duration: 2008-current (2 high-end computers for UNL site); Status: Funded.

## 5 Publication Record

### Highlights

- Author/co-author of two books published by Kluwer/Springer in the areas of Optical networks and Network security.
- Published in prestigious **IEEE/ACM** journals such as **Proceedings of the IEEE**, **IEEE/ACM Transactions on Networking**, **IEEE/OSA Journal of Lightwave Technology** and **IEEE Journal on Selected Areas in Communications**.
- Published in other top networking journals such as **Computer Networks** and **IEEE Communications Surveys and Tutorials** and magazines such as **IEEE Network** and in the top optical networking-specific journals such as **OSA Journal of Optical Networking** (now IEEE Journal of Optical Communications and Networking) and **Elsevier Optical Switching and Networking**.
- Published papers at prestigious IEEE conferences such as **IEEE INFOCOM**, **IEEE P2P**, **IEEE/OSA Optical Fiber Communications (OFC)**, **IEEE GLOBECOM** and **IEEE ICC** and IEEE/ACM workshops such as **IEEE LANMAN**, **IEEE High Performance Switching and Routing (HPSR)** and **ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)**.
- Author/co-author of **2** books, **9** book chapters, **3** journal editorials, **3** edited conference/workshop proceedings, **35** peer-reviewed journal articles, **87** peer-reviewed conference/workshop papers and **4** peer-reviewed conference/workshop poster papers.
- Has **1** edited book under preparation, **5** journal articles currently under review or in preparation and **3** conference papers under review.
- Has delivered **2** invited tutorials, **5** invited conference/workshop presentations and several invited talks.
- Has been widely cited by researchers around the world. According to the ISI Web of Knowledge maintained by Thomson Reuters, 21 journal articles (indexed by ISI) authored by Dr. Ramamurthy) have been cited 284 times (by other journal articles indexed by ISI) with an average citation per article of 13.52 since 1998. (source: <http://www.researcherid.com/rid/B-3430-2008>).

### About the List

- The list of publications can also be found online at <http://cse.unl.edu/~byrav/Publications-DATE.html>.
- All refereed (peer-reviewed) work are indicated and in general, in my field, all journal articles, conference and workshop regular papers and conference and workshop poster/short papers are rigorously reviewed by 3 independent reviewers.
- Note: Student authors are listed in *italics*. IEEE and ACM journals, conferences and workshops are listed in **bold**.
- In an electronic PDF version of this document, the digital object identifier (DOI) corresponding to each publication (where available) is listed at the end (e.g., [doi:10.1109/TNET.2005.852879](https://doi.org/10.1109/TNET.2005.852879)) and is clickable. The publication details may be viewed and the document downloaded (if the reader has the necessary subscription) from the publisher's database (e.g. IEEE Xplore). Otherwise, to resolve the DOI, please enter it at the website: <http://dx.doi.org>).

### 5.1 Books

1. B. Ramamurthy, G. Rouskas, and K. Sivalingam, eds., *Next-Generation Internet Architectures and Protocols*. Cambridge University Press, October 2010. (under preparation).
2. X. Zou, B. Ramamurthy, and S. S. Magliveras, *Secure Group Communications Over Data Networks*. Springer, October 2004. ISBN: 0387229701. [doi:10.1007/b100182](https://doi.org/10.1007/b100182).
3. B. Ramamurthy, *Design of Optical WDM Networks - LAN, MAN and WAN Architectures*. Boston, MA: Springer, January 2001. ISBN: 0792372816. (Reviews of this book have appeared in *IEEE Communications magazine* (Sep. 2001) and *Optical Networks magazine* (July 2001).).

## 5.2 Book Chapters

### Published/Accepted

1. C. Cavdar, S. Rai, A. Gencata, B. Ramamurthy, and B. Mukherjee, "Logical-topology design and optimization," in *The Handbook of Graph Algorithms and Applications, Volume II: Applications* (K. Thulasiraman, A. K. Somani, and S. Vrudhula, eds.), New York, NY: Chapman & Hall/CRC Computer & Information Science Series, 2010. ISBN: 9780849382505 (to appear).
2. J. Feng, K. Kothamachu, L. Xu, and B. Ramamurthy, "Overlay construction in mobile peer-to-peer networks," in *Mobile Peer-to-Peer Computing for Next Generation Distributed Environments: Advancing Conceptual and Algorithmic Applications* (B.-C. Seet, ed.), ch. 3, IGI Global, May 2009. ISBN: 9781605667157.
3. Y. Wang, G. Attebury, and B. Ramamurthy, "Security in wireless sensor networks," in *Security in Wireless Mesh Networks* (Y. Zhang, J. Zheng, and H. Hu, eds.), Auerbach Publications, CRC Press, 2008. ISBN: 9780849382505.
4. B. Ramamurthy, "Dynamic grooming algorithms," in *Traffic Grooming for Optical Networks: Foundations, Techniques and Frontiers (Optical Networks)* (R. Dutta, A. E. Kamal, and G. N. Rouskas, eds.), Springer, August 2008. ISBN:0387745173.
5. K. Potharlanka, T. Antani, B. Ramamurthy, L. Sahasrabudhe, and B. Mukherjee, "Design aspects of optical communication networks," in *The Handbook of Optical Communication Networks (Electrical Engineering Handbook)* (M. Ilyas and H. Mouftah, eds.), ch. 3, pp. 45–66, CRC, April 2003. ISBN: 0849313333.
6. B. Ramamurthy, "Electro-optic and wavelength conversion," in *IP over WDM: Building the Next Generation Optical Internet* (S. Dixit, ed.), ch. 4, Wiley-Interscience, March 2003. ISBN: 0471212482.
7. B. Ramamurthy and J. Jue, "Fiber, lasers, receivers, and amplifiers," in *Optical WDM Networks: Principles and Practice* (K. M. Sivalingam and S. Subramaniam, eds.), pp. 27–50, Boston, MA: Kluwer Academic Publishers, 2000. ISBN: 0792378253. doi:10.1007/0-306-47021-7\_2.
8. B. Ramamurthy, "Switches, wavelength routers, and wavelength converters," in *Optical WDM Networks: Principles and Practice* (K. M. Sivalingam and S. Subramaniam, eds.), ch. 3, pp. 51–75, Boston, MA: Kluwer Academic Publishers, 2000. ISBN: 0792378253. doi:10.1007/0-306-47021-7\_3.
9. B. Ramamurthy, L. Shen, and E. Sawma, "Connection management for wavelength-routed optical WDM networks," in *Optical Networks: Recent Advances (Network Theory and Applications)* (L. Ruan and D.-Z. Du, eds.), pp. 187–204, Springer, September 2001. ISBN: 0792371666.

## 5.3 Journal Editorials

1. A. K. Somani and B. Ramamurthy, "Guest editorial - Optical communication networks for the next-generation Internet," **IEEE Network**, vol. 14, no. 6, pp. 6–7, 2000. doi:10.1109/MNET.2000.885664.
2. B. Ramamurthy, S. Subramaniam, and A. K. Somani, "Guest editorial - Special issue on wavelength conversion," *Optical Networks Magazine*, vol. 3, no. 2, p. 13, March 2002. doi:10.1023/A:1017404026744.
3. C. V. Saradhi, B. Ramamurthy, D. A. Schupke, and E. Oki, "Guest editorial - multidomain optical networks: issues and challenges," **IEEE Communications Magazine**, vol. 46, no. 6, pp. 76–77, June 2008. doi:10.1109/MCOM.2008.4539469.

## 5.4 Edited Proceedings

1. K. K. Ramakrishnan and B. Ramamurthy, "Proceedings of the mini-conference program," in **INFOCOM 2008. The 27th IEEE Conference on Computer Communications**, p. vi, April 2008. doi:10.1109/INFOCOM.2008.5.
2. N. Ghani and B. Ramamurthy, "Message from the Chairs," in **IEEE INFOCOM High-Speed Networks (HSN) Workshop**, (Piscataway, N.J.), IEEE, April 2007. doi:10.1109/HSNW.2007.4290533.
3. B. Ramamurthy, "Proceedings of the ICCCN 2008 conference program," in *ICCCN 2008. The 17th International Conference on Computer Communications and Networks*, August 2008.

## 5.5 Dissertation

1. B. Ramamurthy, *Efficient Design of Wavelength-Division Multiplexing (WDM)-Based Optical Networks*. Ph.D. Dissertation, Dept. of Computer Science, University of California, Davis, July 1998. UMI Publication No. AAT 0599745.

## 5.6 Journal Articles (Peer-Reviewed)

### Papers Under Review and In Preparation

1. *Z. Ouyang*, L. Xu, B. Ramamurthy, and *N. Yossef*, “Partial forwarding vs. partial participation for dynamic window resizing in P2P streaming,” July 2009. (under review).
2. *Y. Xue*, B. Ramamurthy, and *M.C. Vuran*, “SDRCS: A service-differentiated real-time communication scheme for event sensing in wireless sensor networks,” September 2009. (in preparation).
3. *Y. Xue*, B. Ramamurthy, and *J. Hodges*, “Security issues in wireless mesh networks: Challenges and approaches,” September 2009. (in preparation).
4. *X. Yang*, *A. Todimala*, *L. Shen*, and B. Ramamurthy, “Dynamic and deterministic lightpath scheduling in next-generation WDM optical network,” September 2009. (in preparation).
5. *A. Todimala*, B. Ramamurthy, and *N. V. Vinodchandran*, “A dependent cost structure based heuristic for static fault-tolerant routing under shared protection in optical networks,” September 2009. (in preparation).

### Accepted for Publication

1. *Y. Wang*, B. Ramamurthy, *X. Zou*, and *Y. Xue*, “An efficient scheme for removing compromised sensor nodes from wireless sensor networks,” *Journal of Security and Communication Networks*, 2009.

### Published in 2009

1. *Y. Xue*, B. Ramamurthy, and *Y. Wang*, “LTRES: A loss-tolerant reliable event sensing protocol for wireless sensor networks,” *Computer Communications*, vol. 32, pp. 1666–1676, September 2009. doi:10.1016/j.comcom.2009.06.006.
2. *W. Yao*, G. Sahin, *M. Li*, and B. Ramamurthy, “Analysis of multi-hop traffic grooming in WDM mesh networks,” *Optical Switching and Networking*, vol. 6, no. 1, pp. 64–75, January 2009. doi:10.1016/j.osn.2008.09.001.
3. *J. Feng*, *Z. Ouyang*, L. Xu, and B. Ramamurthy, “Packet reordering in high-speed networks and its impact on high-speed TCP variants,” *Computer Communications*, vol. 32, no. 1, pp. 62–68, January 2009. doi:10.1016/j.comcom.2008.09.022.

### Published in 2008

1. *L. Shen*, *X. Yang*, and B. Ramamurthy, “A load-balancing spare capacity reallocation approach in the next-generation SONET metro networks,” *Optical Switching and Networking*, vol. 5, no. 1, pp. 38–50, March 2008. doi:10.1016/j.osn.2007.11.002.
2. *W. Yao* and B. Ramamurthy, “Rerouting schemes for dynamic traffic grooming in optical WDM networks,” *Computer Networks*, vol. 52, no. 10, pp. 1891–1904, July 2008. doi:10.1016/j.comnet.2008.02.027.

### Published in 2007

1. *A. Todimala* and B. Ramamurthy, “A scalable approach for survivable virtual topology routing in optical WDM networks,” **IEEE Journal on Selected Areas in Communications**, vol. 25, no. 6, pp. 63–69, August 2007. doi:10.1109/JSAC-OCN.2007.020605.
2. *R. K. Balachandran*, *X. Zou*, B. Ramamurthy, *A. Thukral*, and *V. N. Variyam*, “An efficient and attack-resistant key agreement scheme for secure group communications in mobile ad-hoc networks,” *Wireless Communications and Mobile Computing (WCMC)*, December 2007. doi:10.1002/wcm.575.

### Published in 2006

1. *M. Li* and B. Ramamurthy, “Heterogeneous waveband switching in wavelength division multiplexed networks based on autonomous clustering architecture [invited],” *OSA Journal of Optical Networking (JON)*, vol. 5, no. 9, pp. 667–680, September 2006. doi:10.1364/JON.5.000667.
2. *Y. Wang*, *G. Attebury*, and B. Ramamurthy, “A survey of security issues in wireless sensor networks,” **IEEE Communications Surveys & Tutorials**, vol. 8, no. 2, pp. 2–23, Second Quarter 2006. doi:10.1109/COMST.2006.315852.

**Published in 2005**

1. *L. Shen, X. Yang, and B. Ramamurthy*, “Shared risk link group (SRLG)-diverse path provisioning under hybrid service level agreements in wavelength-routed optical mesh networks,” **IEEE/ACM Transactions on Networking**, vol. 13, no. 4, pp. 918–931, 2005. doi:10.1109/TNET.2005.852879.
2. *X. Yang and B. Ramamurthy*, “Dynamic routing in translucent WDM optical networks: The intradomain case,” **IEEE/OSA Journal of Lightwave Technology**, vol. 23, no. 3, pp. 955–957, March 2005. doi:10.1109/JLT.2004.841446.
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1. B. Ramamurthy and A. Ramakrishnan, "Virtual topology reconfiguration of wavelength-routed optical WDM networks," in **GLOBECOM '00. IEEE Global Telecommunications Conference**, vol. 2, pp. 1269–1275, November/December 2000. doi:10.1109/GLOCOM.2000.891340.
2. X. Gan, T. Schroeder, S. Goddard, and B. Ramamurthy, "LSMAC and LSNAT: Two approaches for cluster-based scalable web servers," in **ICC 2000. IEEE International Conference on Communications**, vol. 2, pp. 1164–1168, June 2000. doi:10.1109/ICC.2000.853680.

3. B. Ramamurthy and A. Ramakrishnan, “Design of virtual private networks (VPNs) over optical wavelength-division-multiplexed (WDM) networks,” in *SPIE Opticomm 2000: Optical Networking and Communications Conference*, vol. 4233, (Richardson, TX, USA), pp. 76–86, SPIE-Int. Soc. Opt. Eng, January 2000.

#### Published in 1999

1. M. Ali, B. Ramamurthy, and J. S. Deogun, “Routing and wavelength assignment (RWA) with power considerations in all-optical wavelength-routed networks,” in **GLOBECOM 1999. IEEE Global Telecommunications Conference**, vol. 2, pp. 1433–1437, December 1999. doi:10.1109/GLOCOM.1999.830014.
2. M. Ali, B. Ramamurthy, and J. S. Deogun, “Routing algorithms for all-optical networks with power considerations: the unicast case,” in *ICCCN 1999. Eighth International Conference on Computer Communications and Networks*, pp. 237–241, October 1999. doi:10.1109/ICCCN.1999.805525.
3. B. Ramamurthy, D. Datta, H. Feng, J. P. Heritage, and B. Mukherjee, “Simon: a simulator for optical networks,” in *Proceedings of the SPIE - All Optical Networking 1999: Architecture, Control and Management Issues*, vol. 3843, (Country of Publication: USA), pp. 130–135, SPIE-Int. Soc. Opt. Eng SPIE., September 1999.
4. B. Ramamurthy, H. Feng, D. Datta, J. P. Heritage, and B. Mukherjee, “Transparent vs. opaque vs. translucent wavelength-routed optical networks,” in *Optical Fiber Communication Conference, 1999, and the International Conference on Integrated Optics and Optical Fiber Communication. OFC/IOOC '99. Technical Digest*, vol. 1, pp. 59–61 vol.1, February 1999. doi:10.1109/OFC.1999.767791.

#### Published in 1998

1. D. Datta, B. Ramamurthy, H. Feng, J. P. Heritage, and B. Mukherjee, “BER-based call admission in wavelength-routed optical networks,” in *Optical Fiber Communication Conference*, vol. 2 of *1998 OSA Technical Digest Series*, pp. 1–3, Optical Society of America, February 1998. doi:10.1109/OFC.1998.657234.

#### Published in 1997

1. B. Ramamurthy, J. Iness, and B. Mukherjee, “Minimizing the number of optical amplifiers needed to support a multi-wavelength optical LAN/MAN,” in **INFOCOM '97. The 16th Conference on Computer Communications**, vol. 1, pp. 261–268, 1997. doi:10.1109/INFCOM.1997.635138.

#### Published in 1996

1. B. Ramamurthy, J. Iness, and B. Mukherjee, “Optical amplifier optimization in a multi-wavelength passive-star-based optical metropolitan area network,” in *Proceedings, Institute for Operations Research and the Management Sciences – INFORMS*, (Atlanta, GA), Nov. 1996. (invited paper).

### 5.8 Conference and Workshop *Poster and Short Papers*

1. C. Rowe, R. Oglesby, B. Ramamurthy, and D. Swanson, “Regional climate change and its impacts in the Great Plains region: An end-to-end approach (poster paper),” in *Nebraska State EPSCoR Conference*, (Lincoln, NE), October 2008.
2. J. Ghoshal, M. Wang, B. Ramamurthy, and L. Xu, “Variable neighbor selection in live peer-to-peer multimedia streaming networks (poster paper),” in *Broadnets 2008: Fifth International Conference on Broadband Communications, Networks and Systems*, (London, U.K.), September 2008.
3. Y. Xue, B. Ramamurthy, M. Burbach, and C. Knutson, “A real-time groundwater monitoring network for drought impact assessment (poster paper),” in *Nebraska Water Colloquium*, (Lincoln, NE), September 2007.
4. Y. Wang, B. Ramamurthy, Y. Xue, and X. Zou, “A key management protocol for hybrid wireless sensor networks (poster paper),” in *Broadnets 2007: Fourth International Conference on Broadband Communications, Networks and Systems*, (Raleigh, NC, USA), September 2007. doi:10.1109/BROADNETS.2007.4550443.
5. Y. Xue, B. Ramamurthy, and Y. Lu, “A distributed reliable data transport strategy for event based wireless sensor networks,” in *SenSys '06: 4th ACM International conference on Embedded networked sensor systems*, (New York, NY, USA), pp. 407–408, ACM, November 2006. ISBN: 1595933433. doi:10.1145/1182807.1182879.

6. Y. Wang and B. Ramamurthy, "A centralized group rekeying scheme for secure group communication in wireless sensor networks (poster)," in *SecureComm 2006, Second International Conference on Security and Privacy in Communication Networks*, (Baltimore, MD), August 2006.

## 5.9 Magazine Columns

Dr. Ramamurthy has authored several articles for his "Feature on Theses" column in the *Optical Networks* magazine (2000-2004).

1. B. Ramamurthy, "Review of Laxman Sahasrabudde's thesis," *Optical Networks Magazine*, vol. 2, no. 1, pp. 23–25, January 2001. doi:10.1023/A:1017267230889.
2. B. Ramamurthy, "Review of Jonathan P. Lang's thesis," *Optical Networks Magazine*, vol. 2, no. 2, pp. 16–17, March 2001. doi:10.1023/A:1017288014960.
3. B. Ramamurthy, "Review of Hui Zang's thesis," *Optical Networks Magazine*, vol. 3, no. 3, p. 109, May 2002. doi:10.1023/A:1017413816330.

## 5.10 Tutorials

1. Biswanath Mukherjee and Byrav Ramamurthy. Wavelength-routed optical networks - a tutorial. In *Proceedings, Photonics 2000 Conference*, Calcutta, India, December 2000.
2. Byrav Ramamurthy. Wavelength-routed optical WDM networks. In *Proceedings, Opticomm 2001 Conference*, Denver, Colorado, August 2001.

## 5.11 Invited Conference and Workshop Presentations

1. M. Li and B. Ramamurthy, "Dedicated path protection for waveband switching in WDM networks (invited paper)," in *Broadnets 2007. Fourth International Conference on Broadband Communications, Networks and Systems*, pp. 584–593, September 2007.
2. Byrav Ramamurthy. "Security for High-Confidence Software Platforms for Cyber-Physical Systems," at the "National Workshop on High Confidence Software Platforms for Cyber-Physical Systems: Research Needs and Roadmap" organized by The High Confidence Software and Systems Coordinating Group Federal Networking and Information Technology Research & Development – National Science and Technology Council, Alexandria, VA, November/December 2006.
3. Byrav Ramamurthy and Xukai Zou. Secure Group Communications," In *Third Annual Regional Workshop in the Mathematical Sciences*, University of Nebraska-Lincoln, Lincoln NE, October 2000.
4. Byrav Ramamurthy. Virtual private networks (VPNs) over optical WDM wavelength-routed networks. In *IEEE Computer Communications Workshop (CCW) 2000*, Captiva Island, FL, October 2000.
5. Byrav Ramamurthy, Debasish Datta, Helena Feng, Jonathan P. Heritage, and Biswanath Mukherjee. SIMON: A Simulator for Optical Networks. In *IEEE Computer Communications Workshop (CCW) 1999*, (Estes Park, CO), October 1999.

## 5.12 Other Invited Talks

1. Seminar on "Redesigning the Carrier Backbone" at AT&T Labs-Research, Florham Park, New Jersey, May 2009.
2. Seminar on "Application-driven Networking" at Indian Institute of Technology-Madras, Chennai, India, February 2009.
3. Seminar on "Security in Wireless Sensor Networks" at Defence Research Development Organization (DRDO), Bangalore, India, February 2009.
4. Seminar on "Dynamic Lightpath Scheduling in Optical WDM Grid Networks" at Beijing University of Posts and Telecommunications, Beijing, China, May 2008.
5. Seminar on "Optical Grid Networks" at Dept. of Computer Science and Technology, Tsinghua University, Beijing, China, May 2008.
6. Seminar on "Security in Wireless Sensor Networks (WSNs): Attacks and countermeasures" to the NSF-CSEMS Scholarship Recipients, UNL, Fall 2006.

7. Seminar on “Security in Wireless Sensor Networks,” Lucent Bell Labs, Bangalore, India, July 2006.
8. Seminar on “Security in Wireless Sensor Networks,” Indian Institute of Technology-Madras, Chennai, India, July 2006.
9. Talk on “WLAN Security,” Special presentation to NSF-CSEMS Scholarship Recipients, Lincoln, NE, 2005.
10. Seminar on “Wireless Local Area Networks (WLANs): Security Concerns and Solutions” at the Lincoln Downtown Tech Fair, April 2004.
11. Seminar on “Secure Group Communications” at the Nebraska Information Technology Security Day, Lincoln, Nebraska, November 2004.
12. “Wireless Local Area Networks (WLAN) Security,” UNL-CSE Graduate recruiting talk at Nebraska Wesleyan University, Lincoln NE, March 2004.
13. Talk on “CSE Graduate Program and Facilities,” Special presentation to NSF-CSEMS Scholarship Recipients, Lincoln, NE, October 2003.
14. Talk on “UNL Access Grid Node Facilities,” UNL PRISM Priority Initiative sponsored CSE Research Facility Open House, September 2003.
15. Talk on “CSE Graduate Program and Facilities,” Special presentation to Dr. Zlatuska, President, Masaryk University, Brno, The Czech Republic, Lincoln, NE, September 2003.
16. Talk on “Grid Computing at UNL,” Lincoln MENSA club meeting, September, 2002.
17. “Scalable enterprise systems,” J.D. Edwards Co., Denver, CO, August 2001.
18. “Simulation and Modeling of Optical WDM Networks”, OPNET Technologies Inc., Washington, DC, August 2000.
19. “Design of wavelength-routed optical WDM networks,” Department of Computer Science & Engineering, Indian Institute of Technology (IIT-M), Chennai, India, January 2001.
20. “Design of Optical WDM Networks with Power Considerations”, Nokia Research Lab, Boston, MA, Oct. 1999.
21. “On the scalability of the Interactive TV System,” Interactive Digital Solutions Unit, Silicon Graphics Inc., Mountain View, CA, Sept. 1995.
22. “On the amplifier placement problem in optical networks using WDM,” Department of Computer Science & Engineering, Indian Institute of Technology, Madras, India, April 1997.
23. “Wavelength conversion in WDM networking,” Pacific Bell, San Ramon, CA, 1997.
24. “Impact of transmission impairments on teletraffic performance of wavelength-routed optical networks,” Lawrence Livermore National Laboratory, Livermore, CA, 1997.
25. “Helping TA’s in enabling computer usage for classes — Information dissemination/retrieval,” *Professors for the Future* ceremony, Davis, CA, 1996.
26. “Efficient design of Wavelength Division Multiplexed Optical Networks,” University of Nebraska-Lincoln (Lincoln, NE), University of Pennsylvania (Philadelphia, PA), University of Arizona (Tucson, AZ), Case Western Reserve University (Cleveland, OH), University of Delaware (Newark, DE), 1998.

## 6 Teaching Record

### Highlights

- **Teaching Awards:** Dr. Ramamurthy has twice won the UNL CSE Dept. Students Choice Award for Outstanding Teaching of Graduate-level Courses (for 2006-2007 and 2002-2003).
- Dr. Ramamurthy has graduated **7** Ph.D. students and **34** M.S. students (11 Thesis and 23 Project).
- Supervised the research of 2 post-doctoral scholars.
- Has supervised research by **5** undergraduate students (2 supported by NSF REU) and **2** undergraduate honors project students.
- Currently supervising 6 Ph.D. students and 1 M.S. student.
- Currently leading an active research group (“UNL Netgroup: Computer Networks group”).
- Former graduate advisees have been employed by prestigious companies such as Microsoft, Sprint Nextel, Juniper, EMC, Cisco and Intel Corp. and prestigious research units such as AT&T Labs-Research and the University of Southern California’s Information Sciences Institute (East).
- One of his former Ph.D. students (Dr. Xukai Zou) is an Associate Professor in the Department of Computer Science at Purdue University-Indianapolis. Another former Ph.D. student (Dr. Xi Yang) is a Research Scientist at the University of Southern California’s Information Sciences Institute (USC/ISI East).
- External Ph.D. examiner of students worldwide: National University of Singapore (2), IIT-Kanpur, India (1), IIT-Madras, India (1), Iowa State University (1) and University of Ghent, Belgium (1).
- Developed two new courses on Optical Communication Networks (CSCE953) and Data and Network Security (CSCE496/896).

## 6.1 Students

### 6.1.1 Current Students

Student Name	Topic	Degree
Yuyan Xue	Sensor Networks	Ph.D. (with Dr. Vuran, co-advisor)
Miao Wang	Peer-to-peer Networks	Ph.D. (co-advisor with Dr. Xu)
Zhipeng Ouyang	Peer-to-peer Networks	Ph.D. (co-advisor with Dr. Xu)
Pragatheeswaran Angu	Optical networks	Ph.D.
Mukesh Subedee	Optical networks	Ph.D.
Lin Liu	Multimedia networks	Ph.D.
Song Yang	Sensor networks	Ph.D.
Anusha Ravula	Optical networks	M.S.

### 6.1.2 Ph.D. Dissertations Supervised

Student Name & affln.	Title	Degree	Term
Xukai Zou (Assoc. Prof., IUPUI)	Secure Group Communications and Hierarchical Access Control (co-advisor with Prof. Spyros Magliveras, FAU)	Ph.D.	Fall 2000
Xi Yang (USC/ISI East)	Efficient Design and Operation of Translucent Optical WDM Networks	Ph.D.	Summer 2004
Wang Yao (Blade Networks)	Traffic Grooming in Next-Generation Optical WDM Mesh Networks	Ph.D.	Summer 2005
Mengke Li (Microsoft)	Cost-Efficient Design of Waveband Switching in Optical Wavelength Division Multiplexed Networks	Ph.D.	December 2005
Lu Shen (Juniper)	Resource Allocation in Wavelength-Routed WDM Mesh Networks	Ph.D.	May 2006
Ajay Kumar Todimala (AT&T Labs)	Fault-tolerance using Shared Path Protection in WDM Optical Transport Networks	Ph.D.	December 2006
Yong Wang (Calient Networks)	Key management protocols for Hybrid Wireless Sensor Networks	Ph.D.	December 2007

### 6.1.3 M.S. Theses Supervised

Student Name	Abbreviated Title	Term
Jong-Tae Lee	Wavelength Converter Placement in Optical Networks	Spring 1999
Ashok Ramakrishnan	Virtual Topology Reconfiguration in Optical Networks	Spring 2000
Srinath Yaragorla	Sparse Regeneration in a Translucent Network	Summer 2000
Ling Zhong	Optimizing of Amplifier Placements in Switched Optical Networks	Spring 2000
Shu Zhang	Dynamic traffic grooming for reconfigurable WDM networks	Spring 2001
Lu Shen	Signaling Schemes for in GMPLS-based WDM Mesh Networks	Spring 2002
Kalpana Ganesan	P-Lambda Scheduler for WDM Optical Packet Switching	Spring 2003
Ajay Kumar Todimala	Fault-Tolerance in Optical WDM Mesh Networks	Spring 2003
Siva Sunkavalli	Scatternet Formation in Bluetooth Networks	Summer 2003
Ravi Balachandran	Secure Group Communication over Wireless Ad Hoc Networks	Fall 2004
Garhan Attebury	Federated Network Management through Attribute Access Control	Summer 2006

**6.1.4 M.S. Projects Supervised**

Student Name	Abbreviated Title	Term
Xuehong Gan	A Prototype of a Web Server Clustering System	Spring 1999
Qingyuan Lou	Sparse Multicasting Simulator for Optical Networks	Fall 1999
Xingchun Chen	IP Multicast Experiments in a Campus Network	Spring 2000
Chandrakant Yemparala	Integrated Simulation Environment for SIMON	Summer 2000
Gautam Rao	Application Level Differentiated Services for Web Servers	Spring 2000
Elie Sawma	Connection Management in Optical Networks	Fall 2000
Sree Rama Nomula	ARTHUR: An RWA Tool for Optical Networks	Fall 2000
Mir Hussain Ali	Static vs. Dynamic Routing in WDM Networks	Fall 2001
Aditya Srinivasa Ivaturi	Transcoding Proxy for Wireless Web	Summer 2002
Lai Lim	Challenges in deploying Access Grid at UNL	Summer 2002
Mohan Krishna Chirumamilla	An Intrusion Detection System for Wireless LANs	Fall 2002
Jun Li	Integrated Distributed Simulation using Visual SIMON	Spring 2003
Daneal Tesse Fekersillassie	Design of a Sensor Network for Irrigation Management	Spring 2003
Vaidehi Ajit Kasarekar	Distributed Intrusion Detection for Wireless LANs	Fall 2003
Sarang Deshpande	A Scalable Scheme for Secure Dynamic Conferencing	Spring 2004
Mukesh Babu Raghuraman	Implementation of a system for the visually impaired	Summer 2004
Bhavana Lekkala	Waveband Routing with Non-uniform Wavebands	Summer 2004
Ashok Janardhanan	Implementation of a Secure Group Communication Protocol	Summer 2004
Srikanth Anumalla	Groundwater Monitoring using Smart Sensors	Summer 2004
John Hodges	Wireless Mesh Networking: A Solution for Broadband Access	Fall 2007
Jagannath Ghoshal (Co-advisor: Prof. L. Xu)	Neighbor-Selection in Live Peer-to-Peer Multimedia Streaming Networks	Fall 2007
Srikanth Mallu (Co-advisor: Prof. Vuran)	A Secure Group Key Management (SGKM) Scheme for Wireless Sensor Networks	Spring 2008
Vaidhehi Lakshmiraman	Joint Scheduling in a Lambda Grid Network	Summer 2008

**6.1.5 Supervisory Committee Activities**

Student	Assignment	Level	Term
Bhagat, Deepankar	Member	MS	Spring 1999
Liu, Fang	Member	MS	Spring 1999
Tang, Xiaolin	Member	MS	Spring 1999
Wang, Yili	Member	MS	Summer 1999
Xu, Hui	Member	MS	Summer 1999
Dang, Hui	Member	MS	Fall 1999
Dondeti, Lakshminath	Reader	PhD	Fall 1999
Fan, Hanchang	Member	MS	Fall 1999
Kulkarni, Amit	Member	MS	Fall 1999
Sarkar, Amartya	Member	MS	Fall 1999
Thiruchendur, Sankar	Member	MS	Fall 1999
Yalavarthi, Seshu	Member	MS	Fall 1999
Ali, Maher	Member	PhD	Fall 1999
Malladi, Sada	Member	MS	Fall 1999
Kong, Yan	Reader	PhD (EE)	Fall 1999
Ci, Song	Member	PhD (EE)	Spring 2000
Wang, Yang	Reader	PhD (EE)	Spring 2000
Cusack, Charles	Reader	PhD	Fall 2000
Subramani, Kavitha	Member	MS	Fall 2000
Wei, Caina	Member	MS	Fall 2000
Narla, Smita	Member	MS	Spring 2001
Gable, David	Member	MS	Spring 2001
Yang, Guangsheng	Member	MS	Fall 2001
Li, Lin	Member	PhD	Spring 2002
Liu, Xin	Member	MS	Spring 2002
Fu, Jing	Member	MS	Summer 2002
Wu, Tao	Member	PhD reading committee (Iowa State Univ-ECE)	Summer 2003
Newbold, Stefan	Member	MS	Summer 2003
Qin, Xiao	Member	PhD	Summer 2003
Gao, Jun	Member	PhD	Summer 2003
Ramanathan, Visu	Member	MS	Fall 2003
Anderson, Scot	Member	MS	Fall 2003
Liu, Xin	Member	PhD	Spring 2004
Nkwocha, Fidel	Member	MS	Spring 2004
Lueninghoener, Cory	Member	MS	Spring 2004
Krishnapura, Rohini	Member	MS	Fall 2004
Nathan, Ahalya	Member	MS	Spring 2005
Al-Nahas, Huzaifa	Member	PhD	Fall 2005-present
Gerard, Jeffrey	Member	BS	Spring 2006
Jayanavula, Sumanth	Member	PhD	2005-2007
Feng, Jie	Member	PhD	Fall 2006-present
Sunkara, Vandana	Member	MS	Fall 2008
William, Peter	Reader	PhD (EE)	Fall 2007-present
Anonymous	Member	PhD external examiner (IIT Kanpur, IIT Madras, NUS Singapore)	2006-2008
De Leenheer, Marc	Member	PhD Jury (University of Ghent, Belgium)	Fall 2008

### 6.1.6 Independent Study Supervisor

Students: Chin-Kiat Chim, Chon Ming Lee, Srinu Utpala, Xin Liu

(Note: This list does not include students currently doing M.S. work under my supervision.)

### 6.1.7 Undergraduate Honors Project Supervisor

Students: Ryan Shuck, Roger Perry

### 6.1.8 Undergraduate Thesis Committee Member

Student: Mark Smith

### 6.1.9 REU and UCARE Students

Madeline Hardojo (UCARE), Francis Ridder (REU), Jeremiah Wessels (REU), Ray Perry (UCARE), Zachary Berns (UCARE).

### 6.1.10 Internship Supervisor

Students: Kenson Goo (Fall 2004)

## 6.2 Courses and Curriculum Development

- **Teaching Awards:** Dr. Ramamurthy has twice won the UNL CSE Dept. Students Choice Award for Outstanding Teaching of Graduate-level Courses (for 2006-2007 and 2002-2003).
- Dr. Ramamurthy's courses at the Computer Science and Engineering Department at UNL provide a good mix of the theoretical and practical aspects of computer networks. He has taught at both the graduate and undergraduate levels and on topics such as computer networks, network security and optical networks.
- Taught the undergraduate graduate course in Networking (CSCE 462/862) for 7 years.
- NEW COURSE: Optical Communication Networks (CSCE953) Designed a new graduate-level course on Optical Communication Networks (Spring 1999).
- NEW COURSE: Data and Network Security (CSCE496/896) Designed a new undergraduate/graduate-level course on Data and network security (Spring 2006).
- Networks Systems Seminar (CSCE990) Co-developed this graduate-level seminar course (1 credit) that brings together graduate student and faculty researchers in the areas of Computer Networks and Distributed Systems (jointly run with Prof. S. Goddard). Has run for 20 consecutive semesters.
- ABET Review: Responsible for CSCE462 course: description, goals, sample work, evaluation.
- Since his arrival at UNL in 1998, he has taught the following courses:

Course Number	Name	Credit Hours	Approx. Enrollment	Term
CSCE 952	Advanced Computer Networks	3 credits	9-44	Fall 1998-2008
CSCE 462/862	Communication Networks	3 credits	34-50	Spring 1999-2005
CSCE 496/896	Data and Network Security	3 credits	10-22	Spring 2006-2008
CSCE 953	Optical Communication Networks	3 credits	8-31	Spring 1999-2008
CSCE 990	Networks Systems Seminar	1 credit	3-8	Spring 1999-2008
CSCE 310	Data Structures and Algorithms	3 credits	25	Fall 2008

## 7 Service Record

### Highlights

- Dr. Ramamurthy has held a variety of technical leadership positions in the professional community.
- Elected as the **Vice Chair** (2007-2009) and **Chair-Elect** (2009-2011) for the IEEE Communication Society's (Comsoc) Optical Networking Technical Committee (ONTC) in its biennial elections in December 2007. ONTC's charter includes the championing of optical networking within IEEE ComSoc through IEEE journals, magazines and by organization of optical networking symposia at IEEE ICC, GLOBECOM and OFC conferences.
- Serving as an **Editor** on the board of *IEEE/OSA Journal of Optical Communications and Networking (JOCN)* and *IEEE Communications Surveys and Tutorials* journals.
- Served as **Guest Editor** of special issues for *IEEE Network* and *IEEE Communications* magazines and as an **Editor** for the *SPIE Optical Networks* magazine.
- Will serve as **TPC Co-Chair for IEEE INFOCOM 2011**, Shanghai, P.R. China, April 2011. IEEE INFOCOM is the top conference in the field of computer networks and attracts over 1200 paper submissions each year.
- **General Co-Chair** for Broadnets 2008 conference and ICCCN 2009 conference.
- **TPC Chair** for ICCCN 2008 conference (with 16 tracks), IEEE ICC 2006 Optical Networks and Systems Symposium and Broadnets 2006 Optical Track.
- Served as the **TPC Vice Chair** for the **IEEE INFOCOM 2008** Conference (the top conference in Computer Networks) as well as its **Mini-Conference TPC Co-Chair**.
- Served as Organizing Committee member for over 10 conferences/workshops.
- Served as Technical Program Committee member for over 25 conferences/workshops.
- Served as reviewer for over 10 journals.
- Served as a reviewer/panelist for the US National Science Foundation (NSF), US Department of Defense (DoD), Canada's National Research Council (NSERC), and Chilean Research Fund Council (FONDECYT). He has served as a professional reference for evaluation of tenure and promotion cases for junior faculty at US academic institutions (4 in the last 4 years).
- Served in various Departmental, College and University committees, including chairing the CSE Graduate Recruitment Committee (2006-2009), serving as the CSE Graduate Admissions Chair (2007-2009), chairing the CSE Faculty Search Committee (2004) and coordinating the UNL Program of Excellence (PoE) Academic priority initiatives on Simulation and Computing Engineering and Information Technology and Telecommunications (2002-present).

### 7.1 External Service

#### 1. Community Leadership

- **Vice Chair and Chair-Elect**, IEEE Communications Society Optical Networks Technical Committee (ONTC) (2007-2011).
- **Online Content Chair**, IEEE Communications Society Optical Networks Technical Committee (2004-present).
- **Secretary**, IEEE Communications Society Optical Networks Technical Committee (2005-2007).
- **Founding Secretary**, IEEE Communications Society Optical Networks Technical Committee (2002-2004).

#### 2. Editorships

- **Editor**, IEEE/OSA Journal of Optical Communications and Networking (JOCN), May 2009-present.
- **Editor**, IEEE Communications Surveys and Tutorials (2002-present).
- **Editor**, OSA Journal of Optical Networking (JON), Feb. 2008-May 2009.
- **Editor**, *IEEE Communications Magazine: Optical Communications Supplement (OCS)*, 2004-2007.
- **Editor**, SPIE/Kluwer Optical Networks magazine (2002-2004).
- **Guest Co-editor**, IEEE Communications - Feature topic on Multi-domain optical networks, April 2008.
- **Guest Co-editor**, *IEEE Network* magazine – Special issue on “Optical Communication Networks,” November/December 2000.
- **Guest Co-editor**, *Optical Networks* magazine – Special issue on “Wavelength Conversion,” March/April 2002.
- **Feature Editor on Theses**, *Optical Network Magazine* (2000 - 2004).

#### 3. Conference/Workshop Chair

- **TPC Co-Chair**, IEEE INFOCOM 2011 conference, Shanghai, P.R. China, April 2011.
  - **General Co-Chair**, ICCCN 2009 conference, San Francisco, USA, August 2009.
  - **General Co-Chair**, Broadnets 2008 conference, London, UK, September 2008.
  - **General Co-Chair**, INFOCOM 2008 High Speed Networks (HSN) workshop, Phoenix, AZ, USA, April 2008.
  - **TPC Chair**, ICCCN 2008 conference, US Virgin Islands, USA, August 2008.
  - **TPC Vice Chair for Information Systems (EDAS) and Mini-Conference Co-Chair**, IEEE INFOCOM 2008, Phoenix, Arizona, April 2008, 2007-2008.
  - **TPC Vice Chair**, ICCCN 2007 conference, Hawaii, USA, October 2007.
  - **Technical Program Committee Co-chair**, The Third International Conference on Broadband Networks (BroadNets): Symposium on Optical Networks, Communications and Systems, (San Jose, CA), 2006.
  - **Technical Program Committee Co-Chair**, IEEE International Conference on Communications (ICC) - Symposium on Optical Systems and Networks, (Istanbul, Turkey), 2006.
  - **Workshops Co-Chair**, ICST/IEEE BroadNets Conference, (Boston, MA), 2005.
4. Conference/Workshop Organizing Committee
- **Panels and Invited Speakers Co-chair**, Broadnets Conference, 2004.
  - **Panels Chair**, Optical Networks and Communications Conference (OptiCom 2000), Dallas, TX, October 2000.
  - **Panels Chair**, Optical Networks and Communications Conference (OptiCom 2001), Denver, CO, October 2001.
  - **Co-organizer, Optical networks session** for the IEEE 14th Annual Computer Communications Workshop (CCW), Estes Park, Colorado, October 17-20, 1999.
5. Proposal/Dissertation Reviewer/Panelist
- **Proposal Reviewer**, US Department of Energy, 2008.
  - **Proposal Reviewer**, National Science Foundation (NSF), 2007.
  - **Proposal Reviewer**, Chilean Research Fund Council (FONDECYT), 2007.
  - **External Dissertation Committee member**, PhD Committee, National University of Singapore, 2007.
  - **External Dissertation Committee member**, PhD Committee, Indian Institute of Technology-Kanpur (IIT-K), 2007.
  - **Proposal Reviewer**, NSERC, Canada, 2006-2007, 2008.
  - **External Dissertation Committee member**, PhD Committee, National University of Singapore, 2006.
  - **Proposal Review Panelist**, National Science Foundation, 2004.
  - **Proposal Review Panelist**, National Science Foundation, 2002.
  - **Proposal Reviewer**, National Science Foundation, 2001.
6. Technical Program Committee Member
- **Member, Technical Program Committee**, "IEEE INFOCOM 2009 Conference", Rio de Janeiro, Brazil, April 2009.
  - **Member, Technical Program Committee**, "IEEE INFOCOM 2007 Conference", Alaska, USA, May 2007.
  - **Member, Technical Program Committee**, International Conference on Communication, Convergence and Broadband Networking (ICCBN), Bangalore, India, June 2008.
  - **Member, Technical Program Committee**, "IEEE GLOBECOM 2005 (General Conference)", November 2005.
  - **Member, Technical Program Committee**, "IEEE GLOBECOM 2005 (Symposium on Photonics Systems and Technologies)", November 2005.
  - **Member, Technical Program Committee**, "IEEE High Performance Switching and Routing 2005 (HPSR 2005)", Hong Kong, May 2005.
  - **Member, Technical Program Committee** for the Optical Networks Symposium (part of the IEEE ICC 2005 Conference), Seoul, Korea, May 2005.
  - **Member, Technical Program Committee**, ICST/IEEE BroadNets Conference: Optical Symposium, (Boston, MA), 2005.
  - **Member, Technical Program Committee**, "IEEE INFOCOM 2004 Conference", Hong Kong, March 2004.
  - **IEEE ComSoc TCCC representative** to the IEEE GLOBECOM conference (with Drs. S. Kota and E. Al-Shaer) (2002-present).
  - **Member, Technical Program Committee**, "The 23rd IEEE International Conference on Distributed Computing Systems (ICDCS 2003)", Providence, Rhode Island, May 19-22, 2003.

- **Member, Technical Program Committee**, “IEEE INFOCOM 2003 Conference”, San Francisco, CA (USA), April 1-3 2003.
- **Member, Technical Program Committee** for the Optical Networks Symposium (part of the IEEE ICC 2003 Conference), Anchorage, Alaska (USA), May 11 – 15, 2003.
- **Member, Technical Program Committee**, Optical Networks and Communications Conference (OptiComm 2002), Boston, MA (USA), July 29 – August 1, 2002.
- **Member, Technical Program Committee**, “IEEE INFOCOM 2001 Conference”, Anchorage, Alaska (USA), April 22-26 2001.
- **Member, Technical Program Committee** for the Symposium on High Speed Networks (part of the IEEE GLOBECOM 2000 Conference), San Francisco, CA, November 27 – December 1, 2000.
- **Member, Technical Program Committee** for the Optical Networks Workshop (ONW), Richardson, TX, 2000.
- **Member, Technical Program Committee** for the IEEE GLOBECOM’99 Symposium on High Speed Networks, Rio de Janeiro, Brazil, 1999.
- **Member, Technical Program Committee** for the IEEE International Conference On Networks (ICON’99) Conference, Brisbane, Australia, 1999.
- **Member, Technical Program Committee** for the Eighth IEEE International Conference on Computer Communications and Networks (ICCCN), Boston-Natick, Massachusetts, U.S.A., October 11-13, 1999.

## 7. Other External Service

- Served as Reviewer for leading journals such as IEEE/ACM Transactions on Networking, IEEE Transactions on Computers, Computer Networks and ISDN Systems, IEEE/OSA Journal of Lightwave Technology, IEEE Communications Surveys, IEEE Communications Letters, IEEE Network, Photonic Network Communications and conferences such as INFOCOM ’97-’99, ICC ’99, Singapore International Conference on Networks (SICON ’97), ICC 2003, INFOCOM 2003.
- Was **interviewed** as a Wireless networks security expert for a local TV segment on “Wardriving” (*KLKN TV, Lincoln, NE*), July 14-15, 2004.
- Was **interviewed** as an Optical networks expert for an *IEEE Computer* article (March 2000).
- Was **interviewed** as an Optical networks expert for an online industry magazine (*LightReading*) article (2000).

## 7.2 University Level Service

- **Member**, UNL Telecommunications Advisory Committee, 2007-present.
- **Judge**, SigmaXi Student Poster Competition, Computer Science, Engineering, Math & Statistics area, UNL Research Fair, April 2007.
- **Co-organizer and Fundraising Chair**, “The 2007 ACM North Central North America Regional Programming Contest (Lincoln site),” November 2007.
- **Co-organizer and Chief Judge**, “The 2006 ACM North Central North America Regional Programming Contest (Lincoln site),” November 2006.
- **Member**, UNL Water Resources Research Initiative (WRRI) Faculty Search Committee on Hydrological Information Systems, 2006-2007.
- **Member**, UNL Water Resources Research Initiative (WRRI) Steering Committee, 2003-present.
- **Co-organizer and Chief Judge**, “The 2005 ACM North Central North America Regional Programming Contest (Lincoln site),” November 2005.
- **Co-organizer and Chief Judge**, “The 2003 ACM North Central North America Regional Programming Contest (Lincoln site),” November, 2003.
- **Co-organizer and Chief Judge**, “The 2002 ACM North Central North America Regional Programming Contest (Lincoln site),” November, 2002.
- **Co-organizer**, “The 2004 ACM North Central North America Regional Programming Contest (Lincoln site),” November, 2004.
- **Co-organizer and Track co-chair**, NSF-EPSCoR conference on “Diversity of Informatics,” April 4-5, 2002, Lincoln, NE.
- **Co-organizer and Computer Science Track Chair**, “Fourth Annual Regional Workshop in the Mathematical Sciences”, University of Nebraska-Lincoln, November 2-3, 2001.

- **Co-organizer and Chief Judge**, “The 2001 ACM North Central North America Regional Programming Contest (Lincoln site),” November 10, 2001.
- **Co-organizer**, “The NSF-EPSCoR funded workshop on Secure Distributed Information (SDI) and Bioinformatics Research Laboratories (UNL),” November 11, 2001.
- **Co-organizer and Computer Science Track Chair**, “Third Annual Regional Workshop in the Mathematical Sciences”, University of Nebraska-Lincoln, October 27-28, 2000.
- **Co-organizer and Chief Judge**, “The 2000 ACM North Central North America Regional Programming Contest (Lincoln site),” November 11, 2000.
- **Judge**, “The 1999 ACM North Central North America Regional Programming Contest,” Lincoln, NE, 1999.
- **Speaker**, **UNL Red Letter Day**, Student Union, UNL City Campus, Lincoln, NE, 1999.

### 7.3 College Level Service

- **Principal Coordinator**, College of Engineering and Technology, Priority program on Information Technology and Telecommunications (Director: Prof. R.F. Sincovec), University of Nebraska-Lincoln, 2002.
- **Principal Coordinator**, College of Engineering and Technology, Priority program on Simulation and Computing Engineering (Director: Prof. R.F. Sincovec), University of Nebraska-Lincoln, 2002.
- **Member**, “New Equipment Grants Committee,” College of Engineering and Technology, University of Nebraska-Lincoln, 2000.

### 7.4 Department Level Service

#### 1. Committee Chair

- **Graduate Admissions Chair**, Department of Computer Science and Engineering, University of Nebraska-Lincoln, Fall 2007 - 2009.
- **Chair**, “CSE Graduate Recruiting Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, Fall 2006 - 2009.
- **Chair**, “CSE Faculty Search Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, Spring 2004. Helped hire Dr. Lisong Xu and Dr. Myra Cohen, both NSF CAREER awardees at UNL.
- **Chair**, “Priority Area Faculty Search Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2003-2004.

#### 2. Committee Member

- **Member**, “CSE Faculty Search Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, Fall 2006 - Fall 2007.
- **Member**, “CSE Facilities and Space Planning Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2006 - 2008.
- **Member**, “Industry Advisory Panel Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2003-2004.
- **Member**, “CSE Department Advisory Committee,” 2003-2005.
- **Member**, “Graduate Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2003-04.
- Designed (with Ms. Melissa Dunne, Publications & Photography) the CSE Graduate recruitment poster for 2004 and mailed it to 260 CS departments in U.S. and Canada.
- **Member**, “PhD Qualifying Exams Committee (CS) – Systems Track,” 1998-present.
- **Member**, “PhD Qualifying Exams Committee (CS) – Applications Track: Communications and Networking,” 1998-present.
- **Member**, “PhD Qualifying Exams Committee (CE) – Telecommunications and Networking,” 2003-present.
- **Member**, “Industry Advisory Panel Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2003-2004.
- **Member**, “Ad Hoc committee for Contests and special events,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2002.

- **Member**, “Services Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2002-2003.
- **Member**, “Graduate Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2000,2001,2002.
- **Member**, “Undergraduate Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2000-2001.
- **Member**, “ACM Programming Contest Committee,” Department of Computer Science and Engineering, University of Nebraska-Lincoln, 2000-present.

## 7.5 Professional Memberships and Affiliations

Member, Institute of Electrical and Electronics Engineers (IEEE).

Member, IEEE Communications Society (IEEE ComSoc).

Vice Chair (and Chair-Elect), Optical Networking Technical Committee (ONTC) of IEEE ComSoc.

Member, Technical Committee on Computer Communications (TCCC) of IEEE Communications Society (IEEE ComSoc).

Member, Technical Committee on High Speed Networks (TCHSN) of IEEE Communications Society (IEEE ComSoc).

Member, IEEE Technical Committee on Scalable Computing (TCSC).

Member, Discrete, Experimental and Applied Mathematics (DEAM), UNL.

Founding Co-director, Advanced Networking and Distributed Experimental Systems (ANDES) Laboratory, UNL.