Teresa A. Dahlberg, Ph.D.

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EDUCATION

Ph.D.	1993	North Carolina State University	Computer Engineering
M.S.	1990	North Carolina State University	Computer Engineering
B.S.	1984	University of Pittsburgh	Electrical Engineering

ACADEMIC EXPERIENCE

University of North Carolina at Charlotte

Associate Dean, Undergraduate Programs and Administration, College of Computing and Informatics	Since July 2011
Professor, Computer Science	Since July 2009
Provost's Faculty Fellow, Academic Affairs, (50% appointment / 12 months)	2005
Founding Director, Diversity in Information Technology Institute	Since 2004
Associate Professor, Computer Science, College of Information Technology (later renamed College of Computing and Informatics)	2003-2009
Assistant Professor, Computer Science, College of Information Technology	2000-2003
Assistant Professor, Electrical Engineering (later renamed Electrical & Computer Engineering), College of Engineering	1995-2000

Winthrop University, South Carolina

Visiting Assistant Professor, Computer Science	1994-1995

GOVERNMENT and INDUSTRY EXPERIENCE

National Science Foundation

Expert, Computer Information Science and Engineering (CISE) Directorate, Arlington, Va. (Employed by NSF for 6 months while on sabbatical)	2011
Member, CISE Advisory Committee, Arlington, Va.	2011-2013

IBM Corporation

Staff Engineer, Banking Systems Division, Charlotte, N.C. — 1987-1994
- Hardware and software development. *Received Outstanding Technical Achievement Award*, for work on checking solutions products.

Engineer, Display Products Division, Research Triangle Park, N.C. — 1984-1987
- Hardware and software development of communications algorithms.

ACADEMIC ADMINISTRATION AND LEADERSHIP

Professor and Associate Dean, College of Computing and Informatics (CCI)

Leading faculty member and administrator in high growth college formed in 2000: three departments (Computer Science, Software and Information Systems, Bioinformatics and Genomics); six research centers; BA, BS, MS, PSM, and PhD programs; 100+ faculty and staff; 1,000+ undergraduates; 360+ graduate students; $30 million active research awards; 230 peer-reviewed pubs; Top 100 programs by U.S. News and World Report.

Assumed role of associate dean in July 2011; had many of the responsibilities since joining the CCI Leadership Council in 2009. Key administrative responsibilities include:

- Strategic planning and oversight for college **undergraduate programs**
- Integration and oversight of college initiatives for student recruitment, **student success**, advising, experiential learning, and placement
- Assessment and **accreditation** of all college educational programs
- Leader of CCI Partners program - subscription based **corporate partnership** program
- **Industry liaison** for student internships, including 17-month Bank of America Advanced Technology Program; work with External industry Advisory Board
- Oversee **Technology Solutions Office** – college tech support and R&D consultancy
- Oversee college **administrative processes**, policy, procedures and information management
- Work closely with college Department Chairs, Director of Development, Director of Communications, Executive in Residence, Research Services Office
- Work closely with college Business Manager to manage **$10 million operating** budget
- Supervise **five direct reports**, 5 indirect report, with 3 additional open positions

Researcher, Scholar, Center Director

- Leading UNC Charlotte researcher with over **$20 million in external grants** (as PI or co-PI)
- Founder and Director of Diversity in Information Technology Institute, **research center**, (2004). Awarded over $15 million; created cohesive set of K-20 pipeline programs, producing significant outcomes in student recruitment, graduation, quality and diversity
- Employed as an **Expert to the National Science Foundation**, Computer Information Science and Engineering (CISE) Directorate during a reassignment of duties in Spring 2011
- Appointed to a two-year term as a member of the **NSF CISE Advisory Committee**, 2011-2013, a committee of leading researchers and industry professionals who provide input to NSF on their programs
- Graduated **six PhD students**. Published **47 peer-reviewed papers**. Research focus: wireless networking and broadening participation in computing

Innovative Program Developer and Leader, campus-wide, nationwide

- Founder and Director of STARS Alliance (2005) a **national consortium** of diverse colleges and universities with a mission to broaden participation through student-led regional engagement. Created innovative co-curricular **service learning** program called the STARS Leadership Corps, which has been implemented in 49 colleges and universities nationwide
- Established the STARS Computing Corps **501c3** for corporate fund-raising

- Served one-year term as **Provosts Faculty Fellow** spending 50% time working for Academic Affairs (2005). Partnered with Provost to win NSF ADVANCE Institutional Transformation grant to advance women faculty in Science, Technology, Engineering, and Math (STEM) and into leadership positions. Served on leadership team that developed: UNC Charlotte Leaders Institute (professional development for chairs and emerging leaders); Future of the Faculty Committee (for policy review); Bonnie Cone Fellows program (internal awards); and the Women's Academy (research spotlight program).
- Created and piloted a college-wide engagement initiative to interweave co-curricular engagement throughout the undergraduate experience; College initiative has been adopted as **UNC Charlotte Quality Enhancement Plan** (QEP) for ten-year accreditation by the Southern Association of Colleges and Schools (SACS). Serving on Executive Steering Committee to implement campus-wide QEP Engagement program.

University Leader

Leading faculty member in UNC Charlotte's growth and transformation from an undergraduate institution, 1995 (~16,000 students) to a research university, today (>26,000 students).

- Joined Electrical Engineering department in College of Engineering (1995) when University began first three doctoral programs. Contributed to new programs: undergrad Electrical & Computer Engineering (ECE), PhD in ECE, and PhD in Optics and Optical Communications
- Recruited into Computer Science department (2000) with formation of new College of Information Technology (later renamed College of Computing and Informatics). Contributed to growth and new programs: College doubled student body size; tripled faculty/staff size. New: Software & Information Systems Dept., Bioinformatics & Genomics Dept, PhD Computing & Information Systems, PhD Bioinformatics & Computational Biology
- Substantial leadership towards capacity building, securing external research grants, and raising the national visibility of UNC Charlotte.
- 2007 annual review by Dr. Larry Hodges, former Computer Science Department Chair (now Head of the School of Computing at Clemson University) noted, "*By any measure you are one of the most productive faculty members at this University*."

PROFESSIONAL

Industry Professional

- Hardware and software development engineer for IBM (1984-1994)
- Awarded prestigious IBM Resident Study Award (for doctoral studies), IBM Outstanding Technical Achievement Award (for development work on banking systems products), and several smaller achievement awards.

Technology Consultant

- Technology consultant and expert (2000 – 2012) – software and hardware analysis related to intellectual property. Clients have included Netflix, LG Electronics, HTC, Toshiba, Nokia
- Wireless communications consultant to the National Security Agency (1996-1998) - wireless reconfigurable networks project

RESEARCH - GRANTS

Principle Investigator (PI) or Co-PI for over $20 million in funding since joining the UNC Charlotte faculty. PI for over $12 million and co-PI for over $7 million in external funding. Projects are listed below.

The STARS Alliance

The following grants have supported the establishment and national scaling of the Students and Technology in Academia, Research, and Service (*STARS*) Alliance, www.starsalliance.org. The *STARS Alliance* is a national resource for broadening participation in computing through student-led regional engagement. Over 40 STARS colleges and universities implement a co-curricular program called the *STARS Leadership Corps*. The Corps catalyzes regional partnerships among higher education, K-12, businesses, and community organizations through the tiered participation of students, educators and professionals in computing-based outreach and research. The STARS Alliance fosters national community through the *STARS Celebration*, an annual student leadership conference (www.starsalliance.org/celebration), and through *STARS Online*, a social network and digital library for collaboration and dissemination of STARS practices. The *STARS Computing Corps* is a 501c3 for sustained support of the alliance mission.

Contract	Sponsor	Description
Jan 2011 – Dec 2016	NSF $3,750,000	*BPC-AE: Scaling the STARS Alliance: A National Community for Broadening Participation through Regional Partnerships* PI: Teresa Dahlberg, Co-PI: Tiffany Barnes, Heather Lipford
Jan 2008 – Jan 2011	NSF $2,600,000	*BPC-AE: Extending the STARS Alliance: A Southeastern Partnership for Broadening Participation in Computing* PI: Teresa Dahlberg; Co-PI: Tiffany Barnes
Mar 2006-Feb 2009	NSF $2,000,000	*BPC-A: The STARS Alliance: A Southeastern Partnership for Diverse Participation in Computing* PI: Teresa Dahlberg; Co-PI: Tiffany Barnes
Sep 2007 – Sept 2013	NSF >$700,000	*Supplemental Funding for The STARS Alliance*, includes STARS Haiti Project PI: Teresa Dahlberg
May 2006-Sep 2007	TIAA CREF $10,000	*ITSTARS Celebration: A Student Leadership Conference for the STARS Alliance,* PI: Teresa Dahlberg

STARS Scholars: Pathways from Community College to Graduate School

The NSF Scholarships for Science, Technology, Engineering and Math (S-STEM) grant provides three-year scholarships for 20 undergraduate students, many of whom transferred from community college to the university, www.cci.uncc.edu/diti/compscholars.html. These students, called *STARS Scholars*, are provided academic and social support through participation in the STARS Leadership Corps to enable completion of bachelors and masters degrees within three years of transfer. The STARS Scholars program has also fostered the creation of a college-level 2+2 articulation agreement with Central Piedmont Community College and enhanced advising for transfer students.

Contract	Sponsor	Description
Sept 2009 – Aug 2013	NSF $600,000	*S-STEM: STARS Leadership Corps Computing Scholars: Pathways from Community College to Graduate School through Technical Excellence, Leadership, Service-learning and Community* PI: Teresa Dahlberg Co-PI: Bill Ribarsky (Chair, CS), Bill Chu (Chair, Software & Information Systems), Ken Chen (CS)

Forming an ACM SIGBP

This NSF grant is supporting the creation of an Association of Computing Machinery Special Interest Group in Broadening Participation (ACM SIGBP). ACM SIGs represent major areas of computing, http://www.acm.org/sigs. The ACM SIGBP will form an international community for broadening participation in computing.

Contract	Sponsor	Description
Sept 2010 – Aug 2013	NSF $144,648	*BPC-LSA: ACM SIGBP: Forming an ACM Special Interest Group to Scale the Impact of BPC Activities* PI: Teresa Dahlberg

Socially Relevant Computing Research for Undergraduates: Visualization, Virtual Environments, Gaming and Networking

I led formation of a Research Experiences for Undergraduates (REU) Site among four research labs (Visualization, Virtual environments, Gaming and Networking) and won two rounds of three-year funding from NSF (www.cs.uncc.edu/reu). I also led the effort to provide common assessment tools for all of the 60+ NSF CISE-funded REU Sites, www.cs.uncc.edu/reu/toolkit. In 2011, I passed leadership of our REU Site to Assistant Professor, Dr. Jamie Payton. She has since won another three-year NSF grant (not shown here) to continue our site.

Contract	Sponsor	Description
Feb. 2009 - June 2011	NSF $112,061	*CISE REU Sites - Supplemental Funding for PI Meeting, Assessment Project, PI Portal* PI: Teresa Dahlberg
Mar 2009 - Mar 2013	NSF $300,000	*REU Site: Socially Relevant Computing Experiences for Undergraduates: Visualization, Virtual Environments, Gaming, and Networking* PI: Teresa Dahlberg, Co-PI: Tiffany Barnes
Feb 2006 - Feb 2009	NSF $300,000	*REU Site: Computing Research for Undergraduates: Visualization, Virtual Environments, Gaming, and Networking* PI: Teresa Dahlberg

The UNC Charlotte GAANN Fellowship Program for Computing Sciences

With funding from the U.S. Department of Education, we implemented the Graduate Assistance in Areas of National Need *(GAANN) Computing Scholars Program* in 2007 and received a

second GAANN grant in 2009, www.cci.uncc.edu/diti/scholarships.html. The program has supported 17 domestic PhD students, primarily from underrepresented groups, to complete doctoral degrees and prepare for the professoriate.

Contract	Sponsor	Description
July 2009 – August 2012	Dept of Education $522,624 UNC Charlotte Graduate School $130,656 (matching funds)	*The UNC Charlotte GAANN Fellowship Program for Computing Sciences* PI: Teresa Dahlberg Co-PI: Jing Xiao (CS), Cynthia Gibas (Bioinformatics), Bill Ribarsky (Chair, CS)
Aug 2007 – July 2010	Dept of Education $633,360 UNC Charlotte Graduate School $158,340 (matching funds)	*The UNC Charlotte GAANN Fellowship Program for Computing Sciences* PI: Teresa Dahlberg; Co-PI: Jing Xaio (CS), Larry Hodges (Chair, CS), Ken Chen (CS)

Computing Research Experiences for Undergraduates: Social Networking And Games

The Computing Research Association Committee on the Status of Women (CRA-W) and the Coalition to Diversify Computing (CDC) provide Computing Research Experiences for Undergraduates (CREU) awards. We received funding for a team of four women undergraduate students to initiate our SNAG project, a collaboration of the Networking and Gaming Labs.

Contract	Sponsor	Description
Aug 2009 – Aug 2010	CRA-W $29,500	*CREU Charlotte: SNAG: Social Networking And Games* PIs: : Tiffany Barnes, Teresa Dahlberg, Jamie Payton

Partnerships for International Research and Education: A Global Living Laboratory for Cyber Infrastructure Application Enablement

We receive a subcontract grant from Florida International University (FIU) for the Program for International Research and Education (PIRE) project that is funded by NSF, www.pire.fiu.edu. The program supports graduate and undergraduate students, primarily from the underrepresented groups in computing to undertake international research experiences.

Contract	Sponsor	Description
Dec 2009 – Dec 2013	FIU subcontract from NSF Grant $189,651	*A Global Living Laboratory for Cyber Infrastructure Application Enablement* PI: Yi Deng; Co-PI: Teresa Dahlberg

ADVANCE: UNC Charlotte Institutional Transformation for the Future of the Faculty

We received an NSF ADVANCE award (2006) for the UNC Charlotte Institutional Transformation for the Future of the Faculty project www.provost.uncc.edu/advance. The program is changing institutional policy and procedure to better advance women faculty in STEM fields and to advance women into leadership positions.

Contract	Sponsor	Description
Sept 2006 - Aug 2012	NSF $2,632,389	*ADVANCE: UNC Charlotte Institutional Transformations for the Future of the Faculty* PI: UNC Charlotte Provost Joan Lorden Co-PI: Teresa Dahlberg, Kim Buch, Roz Michelson and Arnie Cann

Girls are I.T.!

With funding from an NSF IT Workforce grant, the Girl Scouts, Hornets' Nest Council (Mecklenburg County, North Carolina) developed a mobile technology classroom featuring four hands-on IT activities meant to inform and excite 11-14 year old girls about IT careers, www.girlsareit.org. We received the following subcontracts to develop the feature activity in the bus, a three-level hidden terrain, each with a remote control, sensor equipped, mobile robot, called an *Explorebot*. The mobile bus traveled to girl-scout troop meetings, where girls could earn an IT patch by participating in bus activities.

Contract	Sponsor	Description
Oct 2007 – Sept 2008	Girl Scouts $20,244	*Explorebots: Mobile Robot Activity for the "Girls are IT!" Project* PI: Teresa Dahlberg
May 2004 - Dec. 2004	Interactive Knowledge $13,250	*Wireless Sensors: Exploring Remote Sites with Mobile Vision Equipped Robot* PI: Teresa Dahlberg

Diversity in Information Technology Institute (DITI): Teachers & Counselors Workshop

We developed the Diversity in Information Technology Institute (DITI): Teachers & Counselors Workshop, and ran the program for three years from 2003 through 2005, www.cci.uncc.edu/diti/girlsIT.html. The goals of the workshop were to interweave diversity training with technology skills training for middle school teachers and guidance counselors. Teachers and counselor were invited to participate in pairs. Each attended separate technology workshops. The teachers' tech training was aimed at developing more interesting ways to deliver the content on the North Carolina Standard Course of Study for 8th graders so as to interest the students in computing. Counselors' tech training was aimed at making guidance counselors more comfortable with technology. Sessions for both teachers and counselors were intended to inform of the breadth of computing careers and the broad array of skills required for these careers, and to inform of the biases many adults have that may cause them to unwittingly steer some students away from science and math based majors. Teachers and Counselors were asked to make an action plan to take back and implement in their home schools.

Contract	Sponsor	Description
Sep 2002 - Aug. 2005	AT&T Foundation $100,000	*Diversity in Information Technology Institute: DITI Teachers & Counselors Workshop* PI: Teresa Dahlberg
Sep 2002 - Dec. 2004	Z. Smith Reynolds Foundation $80,000	*Diversity in Information Technology Institute: DITI Teachers & Counselors Workshop* PI: Teresa Dahlberg

100 teachers and counselors participated during the three year run of the workshop, representing every county in North Carolina. Assessment indicates that the workshop was very effective at changing teachers and counselors attitudes about computing.

Wireless Networking Research

My early research on wireless networks primarily focused on survivability analysis of mobile networks. In collaboration with Dr. David Tipper (University of Pittsburgh) and support from several NSF and UNC Charlotte grants, we focused on extending performance analysis to include transient conditions during failure and recovery of network components and to consider both cost and performance metrics. We primarily relied upon simulation analysis for our survivability analysis. In collaboration with Dr. K.R. Subramanian (a UNC Charlotte graphics researcher) and support from an Exploratory NSF grant, we experimented with adding a visualization layer to animate simulations, to enable a better understanding of transient conditions as indicated by real-time cost and performance metrics. With support from an NSF equipment grant, along with three other networking and security researchers, we developed testbeds for experimentation analysis. With support from an NSF international grant, I forged a collaboration with Dr. Simin Nadjm-Tehrani in Linköping University in Sweden to support international research experiences for students.

Contract	**Sponsor**	**Description**
Aug 2001 - Oct 2004	NSF $30,000	*U.S.-Sweden Partnership: Fault-Tolerant Network Management* PI: Teresa Dahlberg Foreign Partner: Simin Nadjm-Tehrani, Linköping Univ.
Sept 2001 - Feb 2005	NSF $100,000	*Experimental Testbed for Mobile Network Protocols* PI: Teresa Dahlberg Co-PI: Essam Elkwae (CS), Gail Ahn (Software & Information Systems), Asis Nasipuri (Electrical & Computer Engineering)
Mar 2001 - Feb 2003	NSF $52,000	*Exploratory Research: Interactive Visualization and Control of Mobile Network Simulations* PI: K. R. Subramanian (CS); Co-PI: Teresa Dahlberg
Oct 2000 - Sept 2004	NSF $300,000	*Collaborative Research: Design and Restoration Techniques for Fault Tolerant Wireless Access networks* UNC Charlotte PI: Teresa Dahlberg Univ. of Pittsburg PI: David Tipper
Sept 1999 - May 2001	NSF $75,000	*Network Design and Resource Management for Survivable Wireless Access* PI: Teresa Dahlberg
Sept 1996 - Feb 1998	NSF $18,000	*Fault Tolerance Analysis of Mobile Networks* PI: Teresa Dahlberg
July 1999 - April 1997	UNC Charlotte $17,100	*Mobile Teletraffic Modeling Using Transportation Theory; Survivability and Reliability of Mobile Networks* PI: Teresa Dahlberg

Cyber-Defender Scholarship Program

UNC Charlotte received the National Center of Academic Excellence in Information Assurance Education Designation by the National Security Agency and Department of Homeland Security in 2001. We then received Department of Defense and National Science Foundation grants to implement the Carolinas Cyber-Defender Scholarship program.

Contract	Sponsor	Description
2004-2005	DoD $58,460	*The Department of Defense Carolinas Cyber-Defender Scholarship Program: research & capacity building* PI: Gail Ahn; Co-PI: Bill Chu, Yulieng Zheng, Bill Tolone, Zhaoyu Liu, Yongge Wang, David Wilson, SoekWon Lee, Anita Raja, Teresa Dahlberg
2003-2004	NSF $192,458	*The Department of Defense Carolinas Cyber-Defender Scholarship Program: research & capacity building* PI: Gail Ahn; Co-PI: Bill Chu, Yulieng Zheng, Bill Tolone, Zhaoyu Liu, Yongge Wang, David Wilson, SoekWon Lee, Teresa Dahlberg
2002-2006	NSF $3,665,870	*Carolinas Cyber-Defender Scholarship Program* PI: Bill Chu, Gail Ahn Co-PIs: Yulieng Zheng, Bill Tolone, Teresa Dahlberg

Other Grants

I actively participated in the Learning Centered Approach to Teaching Evaluation, a study of the effectiveness of student teaching evaluations. I received an IBM grant that provided access to IBM software. I participated in proposal and initial program development of the Defense Intelligence Agency grant to create an UNC Charlotte and IntePoint collaboration.

Contract	Sponsor	Description
Sep 2003 - Sep 2004	Defense Intelligence Agency $747,293	*UNC Charlotte/IntePoint Collaboration* PI: Bill Tolone; Participants: many faculty including Teresa Dahlberg
Aug 2001 - Aug 2002	IBM $668,000	*IBM Scholars Program – Software grant* PI: Teresa Dahlberg
Sep 1998 - July 2002	DOE-FIPSE $175,000	*A Learning Centered Approach to Teaching Evaluation* PI: Ganesh Mohanty (Mechanical Engineering); Participant: Teresa Dahlberg (with several others)

RESEARCH - PUBLICATIONS

Areas

- Wireless networks resource management, routing, data management
- Computing education and broadening participation

Refereed journal publications

1. T. Dahlberg, *Why we need an ACM Special Interest Group for Broadening Participation (SIGBP)*, Communications of the ACM, accepted, to appear 2012.
2. T. Dahlberg, T. Barnes, K. Buch, A. Rorrer, *The STARS Alliance: Viable Strategies for Attracting, Retaining, Supporting, and Developing Underrepresented Students in Computing,* ACM Transactions on Computing Education, 11, 3, Article 18 (October 2011), 25 pages.
3. L. Cao, K. Sharif, T. A. Dahlberg, and Y. Wang, Y. *Multiple-metric Hybrid Anycast Protocol for Heterogeneous Access Networks*", International Journal on Ad Hoc and Ubiquitous Computing, accepted to appear 2011.
4. Yu Wang, Xiang-Yang Li, Wenzhan Song, Minsu Huang, Teresa Dahlberg, *Energy Efficient Localized Routing in Random Multihop Wireless Networks*,"Transactions on Parallel and Distributed Systems, 2010.
5. T. Dahlberg, T. Barnes, K. Buch, and K. Bean, *Applying Service Learning to Computer Science: Attracting and Engaging Under-represented Students*. Computer Science Education, 20:3, September 2010.
6. T. Barnes, T. Dahlberg, K. Buch, K. Bean, (2009). *The STARS leadership corps: An innovative computer science learning community*. Learning Communities Journal, *1*, 2, pp. 5-17.
7. Yu Wang, Lijuan Cao, Teresa A. Dahlberg, Fan Li, *Self-Organizing Fault Tolerant Topology Control in Large-Scale three-Dimensional Wireless Networks*, ACM Transactions on Autonomous and Adaptive Systems (TAAS), Volume: 4, Issue: 3, Pages: 19:1-19:21, July 2009.
8. Yu Wang, Teresa A. Dahlberg, Weizhao Wang, *Routing Game in Hybrid Wireless Mesh Networks with Selfish Mesh Clients*, International Journal of Autonomous and Adaptive Communications Systems (IJAACS), Volume: 1, Number: 4, Pages: 425-446, 2008.
9. Yu Wang, Fan Li, Teresa A. Dahlberg, *Energy-Efficient Topology Control for 3-Dimensional Sensor Networks*, International Journal of Sensor Networks (IJSNet), Vol. 4, No. 1/2 , pp. 68-78, 2008
10. Kelly Nicholson, Dawson Hancock, Teresa Dahlberg, *Preparing Teachers and Counselors to Help Under-Represented Populations Embrace the Information Technology Field*, Journal of Technology and Teacher Education, Vol. 15, Issue 1, Jan. 2007.
11. B. Cao, T. Dahlberg, *Soft Capacity Modeling for WCDMA Radio Resource Management*, IEEE Brazilian Computer Society Journal (BCSJ), No. 3, Vol. 8, April 2003, pp. 6-17.
12. D. Tipper, T. Dahlberg, H. Shin, and C. Charnsripinyo, *Providing Fault Tolerance in Wireless Access Networks*, IEEE Communications Magazine, Vol. 40, No. 1, Jan. 2002, pp. 58-64.
13. T.A. Dahlberg, K.R. Subramanian, *Visualization of Mobile Network Simulations,* Simulation, Vol. 77, No. 3-4, pp.128-140, September/October 2001.

14. T. Dahlberg, J. Jung, *Survivable Load Sharing Protocols: A Simulation Study,* ACM/Baltzer Wireless Networks Journal (WINET), May 2001, Vol. 7, pp. 283-296.

Refereed conference publications

1. E. M. Powell, S. Finkelstein, A. Hicks, T. Phifer, S. Charugulla, C. Thornton, T. Barnes, T. Dahlberg, "SNAG: Social Networking Games to Facilitate Interaction" Proc. Of 28th International Conference on Human Factors in Computing Systems, Atlanta, Georgia, 2010.
2. Marguerite Doman, Jamie Payton, and Teresa Dahlberg, "Leveraging Fuzzy Query Processing to Support Applications in Wireless Sensor Networks," 25th ACM Symposium on Applied Computing, Sierre Switzerland, March 2010.
3. K. Sharif, T. Dahlberg, Lijuan Cao "Anycast Based Lightweight Routing Protocol for Mobile Sink Discovery in Sensor Networks," Proceedings of the seventh annual IEEE Consumer Communications & Networking Conference (CCNC 2010), Las Vegas, Nevada, Jan. 2010.
4. Marguerite Doman, Teresa Dahlberg, and Jamie Payton, "Simulation Environment Scenarios Using Cellular Automata for Wireless Sensor Network Analysis," Proc. of the 2009 Spring Simulation Multi-conference, SpringSim 2009, San Diego, California, March 22-27, 2009.
5. L. Cao, K. Sharif, Y. Wang, T. Dahlberg, "Multiple-Metric Hybrid Routing Protocol for Heterogeneous Wireless Access Networks," Consumer Communications and Networking Conference (CCNC), Las Vegas, Nevada, 2009.
6. T. Dahlberg, T. Barnes, A. Rorrer, C. Seals, M. Lustria, L. Hawks "*The STARS Leadership Corps: Case studies for broadening participation in computing*" Proceedings of the IEEE Frontiers in Education Conference (FIE 2008), Saratoga, N.Y., October 2008.
7. Kashif Sharif, Lijuan Cao, Yu Wang and Teresa Dahlberg, *A Hybrid Anycast Routing Protocol for Load Balancing in Heterogeneous Access Networks*, 17th International Conference on Computer Communications and Networks (ICCCN 2008), St. Thomas, U.S. Virgin Islands, August 2008.
8. Yu Wang, Lijuan Cao and Teresa Dahlberg, *Efficient Fault Tolerant Topology Control for Three-Dimensional Wireless Networks*, 17th International Conference on Computer Communications and Networks (ICCCN 2008), St. Thomas, U.S. Virgin Islands, Aug. 2008.
9. T. Dahlberg, T. Barnes, A. Rorrer, Eve Powell, Lauren Cairco "*Improving Retention and Graduate Recruitment through Immersive Research Experiences for Undergraduates*" Proceedings of the 39th ACM Technical Symposium on Computer Science Education (SIGCSE 2008), Portland, Oregon, March, 2008.
10. L. Cao, K. Sharif, Y. Wang, T. Dahlberg, "*Adaptive Multiple Metrics Routing Protocols for Heterogeneous Multi-Hop Wireless Networks*" Proceedings of the fifth annual IEEE Consumer Communications & Networking Conference (CCNC 2008), Las Vegas, Nevada, January 2008.
11. T. Dahlberg, T. Barnes, A. Rorrer "*The STARS Leadership Model for Broadening Participation in Computing*" Proceedings of the IEEE Frontiers in Education Conference (FIE 2007), Milwaukee, Wisconsin, October 2007.
12. L. Cao, T. A. Dahlberg, Y. Wang, "*Performance Evaluation of Energy Efficient Ad Hoc Routing Protocols*", Proceedings of the 26th IEEE International Performance Computing and Communications Conference (IPCCC 2007), New Orleans, Louisiana, April 2007.

13. Fan Li, Y. Wang, T. Dahlberg, "*Power Efficient 3-Dimensional Topology Control for Ad Hoc and Sensor Networks*," Proceedings of the 49th IEEE Global Telecommunications Conference (Globecom 2006), San Francisco, California, November 2006.
14. Yu Wang, Wen-Zhan Song, Weizhao Wang, Xiang-Yang Li, Teresa A. Dahlberg, "*LEARN: Localized Energy Aware Restricted Neighborhood Routing for Ad Hoc Networks*", Proceedings of the 3rd Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (SECON 2006), Reston, Virginia, September 2006.
15. L. Cao, T. Dahlberg, "*Path Cost Metrics for Multi-Hop Network Routing*," 25th IEEE International Performance Computing and Communications Conference," (IPCCC 2006), April 2006.
16. Y. Wang, W. Wang, T. Dahlberg, "*Truthful Routing for Hybrid Wireless Networks*," Proceedings of the IEEE global communications conference (GLOBECOM), Nov. 2005.
17. T. Dahlberg, A. Nasipuri, C. Taylor, "*Explorebots: A Mobile Network Experimentation Testbed*," Proceedings of the International ACM Workshop on Experimental Approaches to Wireless Network Design and Analysis (EWIND), August, 2005.
18. C. Curescu, S. Nadj-Tehrani, B. Cao, T. Dahlberg, "*Utility-based Adaptive Resource Allocation in Hybrid Wireless Networks*," Proceedings of the 2nd International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine 2005).
19. B. Cao, T. Dahlberg, "*Adaptive Channel Switching for Admission Control with QoS & Priority in WCDMA*," 23rd IEEE International Performance Computing and Communications Conference," (IPCCC 2004), April 2004, Phoenix, Arizona.
20. Howitt, G.-J. Ahn, T. Dahlberg, A. Nasipuri, Y. Zheng, "*Context and Environment Aware Wireless Sensor Networks for Reconfigurable Manufacturing Systems*", 2nd International CIRP Conference on Reconfigurable Manufacturing, August 20-21, 2003, Ann Arbor, MI.
21. V. Namboodiri, T. Dahlberg, "*Experimental Analysis of a Hybrid Proxy-based Multimedia Adaptation Scheme*," 7th IASTED International Conference on Internet and Multimedia Systems and Applications (IMSA), Hawaii, USA, August 13-15, 2003.
22. S. Nadjm-Tehrani, K. Najarian, C. Curescu, T. Lingvall, T. Dahlberg, "*Adaptive Load Control Algorithms for 3rd Generation Mobile Networks*," Proceedings ACM Modeling and Simulation of Wireless and Mobile Systems (MSWiM), Atlanta, Georgia, Sept. 2002.
23. D. Tipper, C. Charnsripinyo, H. Shin, and T. Dahlberg, *"Survivability Analysis for Mobile Cellular Networks,"* Communication Networks and Distributed Systems Modeling and Simulation Conference 2002, San Antonio , Texas, Jan. 27-31, 2002.
24. H. Shin, C. Charnsripinyo, D. Tipper, T. Dahlberg, "*The Effects of Failures in PCS Networks*,"" Proceedings of Third International Workshop on the Design of Reliable Communication Networks, Oct., 2001, Budapest , Hungary.
25. B. Heybruck, T. Dahlberg, "*Survivability Analysis of Mobile Networks,*" Proc. of 11th IEEE Workshop on Local and Metropolitan Area Networks (LANMAN), Boulder, Colorado, March 2001.
26. K.R. Subramanian, T. Dahlberg, "*Congestion Control in Mobile Networks,"* IEEE Symp. on Information Visualization 2000 (InfoVis 2000), Oct. 2000, IEEE Computer Society.
27. T.A. Dahlberg, K.R. Subramanian, "*Visualization of Real-time Survivability Metrics for Mobile Networks,"* Proc. Modeling and Simulation of Wireless and Mobile Systems (MSWiM), Aug. 2000.

28. J. Jung, T.A. Dahlberg, "*Geographical based simulation of survivable mobile networks*", Proc. Of The Advanced Simulation Technologies Conference (ASTC 2000), Washington, D.C., April, 2000.
29. T.A. Dahlberg, J. Jung, "*Survivable Load Sharing Protocols: A Simulation Study*", Proc. Modeling and Simulation of Wireless and Mobile Systems (MSWiM), Aug. 1999.
30. T.A. Dahlberg, J. Jung, "*Load Sharing Protocols for Radio Level Resilience*", Proceedings International Teletraffic Congress (ITC-16), June 1999.
31. T. Dahlberg, J. Jung, "*Teletraffic Modeling for Mobile Communications*", Proceedings International Conference on Communications (ICC98), June 1998.
32. T. Dahlberg, "*Modeling Nonuniform Mobile Communications Traffic*", Proceedings Advances in Communications and Control Conference (COMCON6), June 1997.
33. T. Dahlberg, S. Ramaswamy, D. Tipper, "*Issues in the Survivability of Wireless Mobile Networks*", Proceedings IEEE Mobile and Wireless Communication Networks Workshop (MWCN97), May 1997.

Book Chapters and Edited Proceedings

1. Editor, Proceedings of the 24th International Performance Computing and Communications Conference (IPCCC), 2005.
2. T. Dahlberg, D. Tipper, B. Cao, C. Charnsripinyo, "*Survivability in Wireless Mobile Networks*," chapter in Quality and Reliability of Large Scale Telecom Systems: Case Study Olympic Games, P. Stavroulakis (editor), John Wiley & Sons, 2002.
3. T. Dahlberg, M. Meo, Editors of the *Proc. 5th ACM International Workshop on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM2002)*, Sept. 2002.
4. M. Meo, T. Dahlberg, Editors of the *Proc. 4th ACM International Workshop on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM2001)*, July 2001.

Invited Papers Published in Conference Proceedings

1. P. Bhasin, B. Cao, L. Cao, T. Dahlberg, "*Challenges for Hybrid Multi-hop Networks*", Proceedings of the High-Capacity Optical Network & Enabling Technologies (HONETS), NSF Sponsored US-Pakistan Int'l Workshop, Dec. 2005, Pakistan.
2. M. Hadzikadic, T. Dahlberg, A. Somya, M. Khouja, "*Computer Networks and Complex Adaptive Systems*", Proceedings of the High-Capacity Optical Network & Enabling Technologies (HONETS), NSF Sponsored US-Pakistan Int'l Workshop, Dec. 2004, Pakistan.
3. T. Dahlberg, K.R. Subramanian, B. Cao, "*Soft Capacity Modeling for Third Generation Radio Resource Management*," Proceedings of the IEEE Int'l Symposium on Modeling and Simulation of Computer and Telecommunication Systems (MASCOTS) 2002 Mobility and Wireless Access Workshop, Oct. 12, 2002.
4. D. Tipper, S. Ramaswamy, T.A. Dahlberg, "*PCS Network Survivability*", Proc. Mobile and Wireless Communication Networks conference (WCNC), Sept. 1999.

Theses

1. Dependability Analysis of Hierarchical Networks, Doctoral Dissertation, 1993.

RESEARCH – STUDENTS

Graduate Student Research Advising

Research Advisor to six Ph.D. graduates in computing and engineering.

1. Kashif Sharif, *A Communication Framework for Multihop Wireless Access and Sensor Networks: Anycast Routing and Simulation Tools*, Ph.D. Dissertation, Computer Science, UNC Charlotte, May 2012.
2. Marguerite Doman, *Fuzzy Query Techniques for Sensor Network Data Management*, Ph.D. Dissertation, Computer Science, UNC Charlotte, Dec. 2009.
3. Lijuan Cao, *Integrated Resource Management and Routing for Heterogeneous Access Networks*, Ph.D. Dissertation, Computer Science, UNC Charlotte, Dec. 2008.
4. Bing Cao, *Resource Management in QoS based Survivable Wireless Networks*, Ph.D. Dissertation, Computer Science, UNC Charlotte, Dec. 2004.
5. Bill Heybruck, *Survivability Analysis for Mobile Communications Networks*, Ph.D. Dissertation, Electrical and Computer Engineering, May 2001.
6. Jinwie Jung, *Modeling Techniques and Resource Management Schemes for Survivable Mobile Communications*, Ph.D. Dissertation, Electrical and Computer Engineering, May 2000.

Research Advisor to nine M.S. Thesis students who have graduated

1. Arvind Somya, *Cooperative Self Localization of Robots in Indoor Space Using Wireless Signal Strength and Inertial Measurement*, MS Thesis, Computer Science, UNC Charlotte, 2005.
2. Pratibha Bhasin, *Utility Functions for Hybrid Network Quality of Service*, MS Thesis, Computer Science, UNC Charlotte, 2004.
3. Amit Suratkar, *Traffic Generators for Simulation Based Analysis of Network Protocols*, MS Thesis, Computer Science, UNC Charlotte, 2003.
4. Vinod Namboodiri, *MAWNet: Multimedia Adaptable Wireless Networks- A Hybrid, Proxy-Based Multimedia Adaptation Scheme*, MS Thesis, Computer Science, UNC Charlotte, 2003
5. Navatha Tirungala, *Network Layer Security of Mobile Adhoc Networks*, MS Thesis, Computer Science, UNC Charlotte, 2003.
6. Omkar Dalvi, *Quality Analysis of Bit-rate Reduction Techniques for MPEG-1*, MS Thesis, Computer Science, UNC Charlotte, 2003.
7. Bill Elderidge, *Communications in the 'Last Mile': A Rating System*, MS Thesis, Electrical and Computer Engineering, 2001.
8. Surekha Panganamamula, *Adaptive Admission Control for Mobile Networks*, MS Thesis, Electrical and Computer Engineering, 2001.
9. Axay Shah, *A Study of the Effect of Physical Environment on the Survivability of Mobile Networks*, MS Thesis, Electrical and Computer Engineering, 2000.

Committee member for over 50 graduate students in computing and engineering.

TEACHING

Undergraduate Courses Taught at UNC Charlotte

- ITCS 1600 Computing Professionals
- Service-learning courses
    - ITCS 3610 Computing Leaders Seminar
    - ITCS 3211 Computing Leaders Team Projects
    - ITCS 3212 Computing Leaders Team Leaders
    - ITCS 1610 Computing Applications Seminar
- ITCS 1215 Computer Programming II – Java
- ECGR 2112 Network Theory II
- ECGR 2103 Computer Utilization in C++

Graduate Courses Taught at UNC Charlotte

- ITSC 8665 Graduate Teaching Seminar
- ITCS 6168 and ECGR 6090 Wireless Communication Networks
- ITCS 6166 Computer Networks
- ITCS 6132 and ECGR 6187 Modeling & Analysis of Communication Networks
- ITCS 6010 Network Protocols for Multimedia Applications
- ECGR 5187 Data Communications

Curriculum Development - highlights

- Introduced **engagement experience** to College of Computing and Informatics through ITCS 1610 Computing Professionals, a required course for all new freshman and transfer students. Course includes three weekly components: seminars, peer-led group activities, and individual participation in extra-curricular activities. Course aims to engage students as active participants in their academic careers as a means to enhance student success.
- Introduced **service-learning** courses to computing through development of ITCS 3610 Computing Leaders Seminar, ITCS 3211 Computing Leaders Team Projects, and ITCS 3212 Computing Leaders Team Leaders. Undergraduate students undertake team-based computing projects on campus or in the community and participate in the national STARS Leadership Corps program that I developed and that is implemented in 49 colleges and universities nationally.
- Introduced computing service-learning course to University College students (ITCS 1610 Computing Applications Seminar) to **recruit undeclared freshman** into computing majors.
- Introduced **Graduate Teaching Seminar** to prepare PhD students for careers in the professoriate (ITSC 8665 Graduate Teaching Seminar). Students learn pedagogy and communication skills through formal coursework and practice teaching through informal apprenticeships with master teachers. Students participate in course for multiple semesters until they teach their own course.
- Participated in new **PhD program development**: Electrical & Computer Engineering (1995); Optics and Optical Communications (1998); Computing and Information Systems (2000)

Undergraduate Student Research

- Developed a Research Experiences for Undergraduates (REU) site spanning four research labs (Visualization, Virtual Environments, Gaming, and Networking). Over 119 undergraduates participated in the site over six years, several of which worked with me in my networking lab). More than half of the students continued on to graduate school; at least six have been awarded the prestigious NSF Graduate Research Fellowship

CONSULTING

- 2000-2012, Intellectual property consultant and testifying expert. Clients include Netflix, LG Electronics, HTC, Toshiba, Nokia, JPMorgan Chase, OptimumPath, SuperGuide
- 1999, Technical Trainer, Infolina, NC; Protocol developer, The Wingard Co., Inc., GA
- 1996-1998, Communications consultant, Wireless Interconnect Network and Reconfigurable Systems (WINARS) project, National Security Agency, VA

AWARDS

- Woman of Distinction for STEM Education Award, Girl Scouts Hornets' Nest Council, Charlotte 2012
- Charlotte Business Journal Diversity in Business Catalyst Award (2006)
- UNC Charlotte Woman of the Year Award (2004-2005)
- College of Information Technology Excellence in Graduate Teaching Award (2004-2005)
- IBM Resident Study Award (1990-1993)
- IBM Outstanding Technical Achievement Award (1989)