MICHAEL DEVETSIKIOTIS
PROFESSOR

A. BRIEF RESUME

THIS FORMAT FOLLOWS NC STATE UNIVERSITY BOARD OF TRUSTEES' REPORTING REQUIREMENTS.

1. Education background: (INSTRUCTION: LIST DEGREE, DISCIPLINE, DATE EARNED, INSTITUTION, AND STATE OR COUNTRY IN CHRONOLOGICAL ORDER, ONE DEGREE PER LINE)

Ph.D. in Electrical Engineering, North Carolina State University, NC - 1993
M.S. in Electrical Engineering, North Carolina State University, NC - 1990
Dipl. Ing. in Electrical Engineering, Aristotle University of Thessaloniki, Greece – 1988

2. Professional experience: (INSTRUCTION: LIST TITLE, DATES OF EMPLOYMENT, ORGANIZATION, DEPARTMENT, AND STATE OR COUNTRY IN CHRONOLOGICAL ORDER, ONE POSITION PER LINE)

Director of Graduate Programs, ECE Department, January 2011 – present
Professor, July 2006—present.
Associate Professor, Oct. 2000 – June 2006, Electrical and Computer Eng., NC State University, Raleigh, NC
Associate Professor, July 1998 – Dec. 2000, Systems and Computer Eng., Carleton University, Canada
Assistant Professor, Sept. 1996 – June 1998, SCE Dept., Carleton University, Canada
Research Associate/Adjunct Professor, July 1995 – Aug. 1996, SCE Dept., Carleton University, Canada
Postdoctoral Fellow, Oct. 1993 – June 1995, Systems and Computer Eng., Carleton University, Canada

3. Scholarly and creative activities: (INSTRUCTION: ADD/DELETE ACTIVITY TYPES TO THE LIST BELOW AS APPLICABLE; USE THE TAB KEY TO ADD ADDITIONAL ROWS; ACTIVITY TYPE EXAMPLES)

Type	*Number*
Refereed Journal Article	37
Submitted/Pending Journal	3
Refereed Conference Paper	119
Submitted/Pending Conference	3
Standards Contribution	2
Non-Refereed/Invited Presentation	58
Book Chapter	5

4. Membership in professional organizations: (INSTRUCTION: LIST ONE ORGANIZATION PER LINE, INCLUDE MEMBERSHIP DATES)

IEEE (F 2012, SM 2003, M 1994, S 1985) Communications Society, 1985 – present
ASEE, American Society for Engineering Education, 2003 – 2012
INFORMS (Telecommunications Section, 2002 - present
Honor Society Sigma Xi, 1991 – present; Honor Society Eta Kappa Nu, 1990 – present
Honor Society Phi Kappa Phi, 1992 - present

5. Scholarly and professional honors: (INSTRUCTION: LIST ONE HONOR PER LINE, INCLUDE DATE HONOR AWARDED)

Best paper award, IEEE SmartGridComm 2012
Best paper award for 2010, IEEE ComSoc Technical Committee on Com. Systems Integration and Modeling.
IEEE Communications Society Distinguished Lecturer, 2008 – 2011 (renewed for second two-year term in 2010)
Best Paper Award, QRPM Symposium, IEEE Globecom 2009, Dec. 2009, Honolulu
Best Student Paper Award, QRPM Symposium, IEEE Globecom 2007, Dec. 2007, Washington, DC.
Best paper award, 41st Annual Simulation Symposium, April 2008, Ottawa, Canada.
Chair, IEEE Comm. Soc. Technical Committee on Comm. Systems Integration and Modeling, 2002 – 2005.
OPNET Modeling Excellence Award, 1996.
Phi Kappa Phi Academic Achievement Award, NC State, 1993.
Scholarship, National Scholarship Foundation of Greece, 1983, 1984, 1985, 1986 and 1987.
Honorary Scholarship, National Technical Chamber of Greece, 1984, 1985, 1986 and 1987.

6. Professional service on campus: (INSTRUCTION: LIST ONE ON-CAMPUS SERVICE PER LINE, INCLUDE SERVICE DATES; NOTE LEADERSHIP ROLE IF HELD, E.G., CHAIR, CO-CHAIR, ETC.)

Chair, College of Engineering Graduate Studies Committee, 2014 – present
Member, Faculty Senate NC State University, 2012 – present (re-elected for a second two-year term in 2014)
Member, University Standing Committee on Engagement and Extension, 2012 – 2015
Member, Faculty hiring committee, ECE Department, January 2011 – May 2011
Chair, ECE Department Renewal, Promotion and Tenure Committee, 2009-2010
ECE Coordinator for Engineering Day at the Legislature 2009 and Spend-a-Day in Engineering Tours
Vice-Chair of the ECE Departmental Reappointment, Promotion and Tenure (RPT) Committee, Fall 2007
Program Coordinator, Masters in Computer Networking (ECE Department), 2005 – 2010
Area coordinator, ECE Networking faculty group, 2005 - 2010
Chair, ECE Department Open House Committee (member since 2001, chair from 2003 to 2010)
ECE Department Undergraduate Research Committee, February 2007 – present.
ECE Department Community Outreach Committee, 2005 – 2009
ECE Department Peer Teaching Evaluation Committee, 2001 – 2005
ECE Department New Faculty Hiring Committee, 2001 – 2004
Parks Scholarship Program Faculty Mentor, 2002 – present
IAESTE Host and International Student Advisor, 2002 and 2003
Member of the Graduate Faculty of Operations Research Program and of Computer Science

7. Professional service off campus: (INSTRUCTION: LIST ONE OFF-CAMPUS SERVICE PER LINE INCLUDING CONSULTING ACTIVITIES, IF APPLICABLE; INCLUDE SERVICE DATES; NOTE LEADERSHIP ROLE IF HELD, E.G., CHAIR, CO-CHAIR, ETC.)

Tutorials Chair, IEEE ICC 2016, Kuala Lumpur, Malaysia.
Co-chair, Networking Track, EUCNC 2015
TPC member, IEEE Smart Grid Comm 2014 and IEEE LATINCOM 2014
TPC co-chair IEEE LatinCom 2013, Santiago, Chile, 2013.
TPC Chair, Green Communications Track, IEEE Globecom 2012, Anaheim.
Co-Chair, IEEE ICC 2012, Symposium on QoS, Reliability, Performance and Modeling, Ottawa, Canada
General Chair, IEEE CAMAD, Kyoto, Japan, June 2011.
Vice-Chair, previously Secretary, IEEE ComSoc Tech. Comte. on Transmission, Access & Optical Systems, 2010 –
Chair (previously Vice-Chair and Member), IEEE ComSoc Globecom-ICC Technical Committee, 2010 – present
Voting Member-at-Large, IEEE Communications Society Education Board, 2008 – 2011.
Co-Chair, IEEE Globecom 2010, Symposium on Quality, Reliability and Performance, Miami, Dec. 2010.
Guest Editor, Journal of Internet Engineering special issue on "Service Oriented Infrastructure", 2009-2010.
Guest Editor, ACM TOMACS special issue on Modeling and Simulation of Cross Layer Systems, 2008 – 2010.
Co-chair, Workshop on Enabling the Future Service Oriented Internet, IEEE Globecom 2009, Honolulu
Workshops Chair and member of the Executive Committee, IEEE Globecom 2008, New Orleans, November 2008.
Guest Editor, Mobile Networks and Applications, special issue "New advances in broadband wireless networking," 2008.
Area Editor, ACM *Transactions on Modeling and Computer Simulation*, 2007 – 2010. Associate Editor 1997-2006.
Member of the Editorial Board, *Journal of Internet Engineering*, 2006 – present.
Member of Editorial Board, *Intl. Journal of Simulation and Process Modeling*, August 2004 – present
Member of the Editorial Board, IEEE *Communications Surveys and Tutorials*, 2006 – present
Associate Editor, IEEE Communications Letters, 2002 – 2006
Guest Editor, *Computer Networks*, Special Issue "Long-Range Dependent Traffic Modeling", Oct. 2004
Guest Editor, *Computer Networks*, Issue on "Self-Similar Traffic Modeling and Engineering", Oct. 2002
Guest Editor, *ACM TOMACS*, Spec. Issue on Modeling and Simulation of Comm. Networks, April 2000
Co-chair, Workshop on Enabling the Future Service Oriented Internet, IEEE Globecom 2007, Washington, DC.
Co-Chair, IEEE Globecom 2006, Quality, Reliability and Performance of Emerging Network Services, San Francisco
Co-Chair, IEEE ICC 2005, Symposium on QoS, Reliability and Performance, Seoul, Korea
Co-Chair, IEEE ICC 2004, Symposium on High Speed Networks, Paris, France
Co-Chair, IEEE ICC 2002, Symp. on Next Gen. Internet, New York City; Co-Chair IEEE CAMAD 2000, New Orleans
Reviewer IEEE Trans. on Comm., IEEE Trans. on Networking, IEEE Trans. Automatic Control, IEEE GLOBECOM, etc
NSF Panelist December 2001, June 2002, January 2003, July 2004, May 2005, May 2006, May 2009
Visiting Scholar, IBM Webshpere Technology Institute, 2005 – 2006 and 2008 – present.

II. TEACHING AND MENTORING OF UNDERGRADUATE AND GRADUATE STUDENTS

A. TEACHING EFFECTIVENESS

1. Courses Taught
List courses taught, with an evaluation of teaching effectiveness, including a summation of data from student evaluations for the past three years and summary of available peer evaluations.

Course	When taught	Enrollment	Q8 (new 9): Overall Effectiveness Avg./Dept Avg.	Q15 (new 14): Course quality Avg./Dept. Avg.
ECE 220	S10	60	3.2/4.3	3.0/4.2
ECE 220-DE	S10	11	2.6/4.3	3.8/4.2
ECE/CSC 576	F09	60	3.8/4.3	4.0/4.3
ECE/CSC 576-DE	F09	4	4.5/4.3	4.5/4.3
ECE 220	F09	79	2.5/3.9	2.6/3.9
ECE 220	S09	58	2.9/4.1	3.0/4.0
ECE 220-DE	S09	11	2.3/4.1	3.0/4.0
ECE/CSC 776	S09	22	4.5/4.1	4.3/4.0
ECE/CSC 776-DE	S09	5	4.0/4.2	4.3/4.2
ECE/CSC 576	F08	65	4.0/4.3	3.9/4.2
ECE/CSC 576-DE	F08	9	4.3/4.3	4.2/4.2
ECE/CSC 776-601 (DE)	S08	10	4.75/4.02	5.00/3.94
ECE/CSC 776	S08	23	4.00/4.02	4.00/3.94
ECE/CSC 576	S08	63	3.92/3.97	3.97/3.94
ECE/CSC 776	S07	14	4.1/4.03	4.1/3.94
ECE/CSC 576	S07	20	3.6/3.93	3.73/3.72
ECE/CSC 776	S06	9	4.2/4.1	3.8/4.0

ECE/CSC 576	S06	25	3.9/4.1	3.9/3.95
ECE/CSC 776	S05	19	4.4/4.1	4.2/4.0
ECE/CSC 576	S05	33	3.6/4.1	3.6/4.1
ECE 776	S04	18	4.4/4.1	4.2/3.9
ECE 576	S04	30	4.4/4.1	4.2/3.9
ECE 776	S03	12	3.9/4.0	3.9/3.8
ECE 576	S03	35	4.0/4.0	3.7/3.8
ECE 776	S02	15	4.4/4.1	4.6/3.9
ECE 576	F01	53	3.5/4.0	3.2/3.7
ECE 407	S01	49	3.5/4.0	3.5/3.7

2. ECE Peer Review of Teaching Summary (entered Fall 2005):

The following process was used to generate this report. The ECE Peer Review of Teaching Committee: 1) gathered student evaluation data; 2) assigned a committee member to complete an in classroom observation check list and a course material checklist with comments, and; 3) gathered information regarding the candidate's contributions to the teaching function of the department. The checklists were developed based on a study and by recommendations from Dr. Felder, an expert in engineering education. A summary of this material is given below. The raw data and detailed comments are available on file.

Dr. Devetsikiotis has taught several different courses since his arrival to NC State in 2001. He has taught one undergraduate and two different graduate courses. His average student evaluation score for "overall effectiveness" is 4.0, approximately the department average.

His peer evaluation score for his lectures and course materials are 4.6/5.0 and 4.8/5.0, respectively. The peer evaluation was conducted during the Fall 05 semester (ECE 570). The evaluator found that Dr. Devetsikiotis lecture was clear and he has asked students stimulating questions. He presented material using well-organized Powerpoint notes that were effectively supplemented by comments and illustrations written on the board. A minor suggested improvement is to ask students more specific questions to motivate classroom discussion. The evaluator has examined course material for several courses (primarily ECE 576) and found that it is well organized and detailed. Course information and expectations are clearly stated and well motivated. All materials are posted on the web. There were no suggested improvements.

4

Dr. Devetsikiotis has completely revised two graduate courses in networking and was wholly responsible for updating the laboratory for several networking courses. He has led the in-depth five-year review of the Master's in Computer Networking program. He has taken a lead in identification of strategic directions for curricula related to information networks. This effort has led to creation of the curriculum for "services science, management and engineering" (SSME) in collaboration between NC State and industry, e.g. IBM and HP.

Dr. Devetsikiotis is currently chairing one MS and five PhD committees. He was the advisor of two PhD and two MS students that have received degrees. In addition, he has served on the committees of 22 other graduate students at NC State. He has supervised two undergraduate students at NC State and hosted two international undergraduate scholars. Moreover, Dr. Devetsikiotis had significant teaching and advising record at Carleton University, and he has served on several committees at other Universities.

B. INSTRUCTIONAL DEVELOPMENT
Include innovations in courses and curricula.

COURSE CONTRIBUTIONS AT NC STATE

1. While on sabbatical in Italy and Greece (Fall 2010), I continued a multi-year effort to study the use of virtual collaboration technologies in teaching and remote instruction. With support from EOL, and Delta, my team continued the comparisons of virtual world platforms. While in Europe, I taught a course at the University of Trento, Italy, and utilized virtual technologies for instruction and remote office hours.

2. Continued to introduce virtual collaboration technologies to ECE 776, ECE 576 and ECE 220. With support from EOL, and Delta, he has been trying and comparing virtual world platforms, and has been conducting trials with virtual office hours, virtual TA sessions, virtual Matlab co-laboratories and virtual instruction in Opnet network simulations and Cisco network emulators. The "VCL 3.0" project has had funding from CACC, Delta, EOL and has included in-class trials and post-experiment surveys, in collaboration with the College of Management.

3. Revised and adapted ECE/CSC 776 for first time on-line, distance education delivery in the Spring of 2008. Feedback was very encouraging as we were given a 4.75 for effectiveness and a perfect 5.0 for course quality.

4. Completely revised, updated and extended the laboratory exercises for ECE 576 to include hands-on problems in Multi-Protocol label Switching (MPLS).

5. Restructured and modernized the material in ECE 776 to reflect the more recent research and standards developments in scheduling techniques, admission control, pricing/charging, and Internet economics.

6. Supervised the development of OPNET-based laboratories, exercises and term projects for the Networking courses, specifically ECE 570, ECE 576 and ECE 776.

7. Planned and supervised the establishment of simulation computer laboratory in Daniels 336, to allow ECE 407, ECE 576 and ECE 776 students to practice and perform laboratories in modeling and simulation exercises using OPNET, ns2 and other simulation software.

CURRICULUM CONTRIBUTIONS AT NC STATE

1. Funded by Engineering on Line, Dr. Devetsikiotis continued to study the use and effect of virtual world technology on distance education courses in the year 2009-10. Obtained new funding from the Center for Advanced Computing and Communication (CACC) and from EOL to continue to study networked, 3D virtual collaboration for teaching,

during the summer of 2008. Continued trials with thee VCL, Elluminate, Vista, Sun Wonderland, Second Life, Qwaq and Protosphere during the Fall of 2008 and Spring of 2009, in ECE 576 and ECE 220.

2. Since the start of 2005, Dr. Devetsikiotis has lead the in-depth five-year review of the Master's in Computer Networking program. This process involves consulting faculty and gaining input from industry, in order to clarify course objectives and procedures, to ensure that the academic and professional standards of the next generation of graduates is met.

3. Dr. Devetsikiotis' broader effort is the identification of strategic directions for curricula related to information networks, enterprise integration and service engineering. The latter is attracting much attention from giants like IBM and HP. Service engineering has been identified by these major corporations as a strategic area of growth and future profit. These companies are currently working with NC State to investigate "services science, management and engineering" (SSME), to help identify strategic research and educational projects that will attract research funding at both the State and the Federal level. Dr. Devetsikiotis has taken the lead in developing a curriculum for the growing field of SSME. He has been instrumental in liaising with these major corporations, defining policy for SSME, and generally putting NC State at the heart of strategic decision making with regard to the implementation of SSME.

4. In the years 2001-2002 Dr. Devetsikiotis was a member of the ECE curriculum committee - discussing problem sessions and specialization areas. He also participated in the ECE strategic planning meetings (academic).

5. Dr. Devetsikiotis was wholly responsible for the developed of OPNET laboratories and projects. He collaborated with Networking faculty in both ECE and CSC to establish prerequisites, appropriate simulation training, and hands-on modeling laboratories, for the major CNE/CNC (Master's in Computer Networking) program.

CURRICULUM CONTRIBUTIONS AT CARLETON

1. Dr. Devetsikiotis was a main contributor, one of a number of proposers, for a new Executive Master's program entitled: "Masters in Internet Technologies", to be jointly administered by the University of Ottawa and Carleton University.

2. As Associate Chair for Undergraduate Studies in the Department of Systems and Computer Engineering, Dr. Devetsikiotis played a central role in launching a new Bachelor's of Engineering in Communications Engineering course, and improving the curriculum of all programs offered by the SCE department at Carleton.

3. I participated regularly in the Academic Planning Committee for the Faculty of Engineering at Carleton University.

COURSE CONTRIBUTIONS AT CARLETON UNIVERSITY

1. Dr. Devetsikiotis developed a new version of 94.581Y, Advanced Topics in Communication Systems, based on student projects, presentations and visiting lecturers.

2. Dr. Devetsikiotis developed laboratory exercises for 94.462, Introduction to Computer Communications, based on the simulation software COMNET.

3. Dr. Devetsikiotis developed laboratory exercises for 94.405/501, Introduction to Modeling and Simulation, based on the simulation languages SIMSCRIPT II initially and MODSIM III later.

4. Dr. Devetsikiotis co-supervised the establishment of an Asynchronous Transfer Mode laboratory donated to Carleton University by Newbridge Networks, and participated in the development of laboratory exercises for this lab (intended for use by undergraduate and graduate students in Computer Networking).

TEXTBOOKS AND LABORATORY MANUALS

Matthias Falkner, Ioannis Lambadaris and Michael Devetsikiotis, "Communication Networks: Principles and Simulation Practice", manuscript proposed for publication to Prentice-Hall. This book contains a series of communication networks laboratory experiments accompanied by explanations/interpretations of the corresponding theoretical foundations. The laboratories are based on COMNET, a leading software network simulation package. An introductory tutorial on how to use COMNET is included. Students are not required to have previous programming experience, however familiarity with the PC windows environment is desirable.

C. MENTORING ACTIVITIES

Include undergraduate academic advising and assessments thereof, if applicable, graduate committees, postdoctoral advising, advising student organizations, special projects with students, and Department of Public Instruction assessments of supervising student teaching.

GRADUATE COMMITTEES (at NCSU):

Student name	Degree (defense)	Chairman	Member
Konstantinos Christidis	Ph.D. CPE	*	
Cuiyu Kong	Ph.D. CPE	*	
Shalini Chauhan	Ph.D. CPE	*	
Daehyun Ban	Ph.D. CPE (2012)	*	
Boonyarith Saovapakhiran	Ph.D. CPE (2013)	*	
I. Safak Bayram	Ph.D. CPE (2013)	*	
Ioannis Papapanagiotou	Ph.D. CPE (2012)	*	
Vineet Kulkarni	Ph.D. CPE (2012)	*	
Michalis Kallitsis	Ph.D. CPE (2010)	*	
Georgios Plitsis	Ph.D. (withdrawn 05/08)	*	
Robert Callaway	Ph.D. (2008)	*	
Vladica Stanisic	PhD. (2005)	*	
Peng Xu	Ph.D. (2005)	*	
Jie Hui	Ph.D. (2005)	*	
Srikant Nalatwad	Ph.D. (2006)	*	
Bobby M. Ninan	Ph.D. (2004)	*	
Chi-Chieh Hsu	Ph.D. (2007)	*	
Carmela Cozzo	Ph.D. (2001)		*
Lisong Xu	Ph.D. (2001)		*
Jangeun Jun	Ph.D. (2006)		*
Phoemphun Oothongsap	Ph.D. (2004)		*
Reda Haddad	Ph.D. (2006)		*
Ozdemir Akin	Ph.D. (2004)		*
Shawqi Kharbash	Ph.D. CPE (2011)		*
Hongyan Lei	Ph.D. (2005)		*
Kamala Subramaniam	Ph.D. (2006)		*
Nicki Washington	Ph.D. (2005)		*
Indraneel Kelkar	Ph.D.		*
Sean Xiang Zhou	Ph.D. (2006)		*
Wei Liang	Ph.D. (2005)		*
Xenia Mountrouidou	Ph. D. (2007)		*
Yuh-Ming Chiu	Ph. D. (2009)		*
Shuang Hu	Ph. D. (2008)		*
Thor Thorolsson	Ph. D. (2011)		*
Ming Zhao	Ph. D. (2009)		*
Fei Xing	Ph. D. (2008)		*
Shawqi Kharbash	Ph. D. (2013)		*
Mradula Neginhal	Ph.D. CSC		*
Han Cai	Ph.D. CPE (2010)		*
Zyad Zwekat	Ph.D. CSC (2009)		*
Wenhong Tian	Ph.D. CSC (2007)		*
Heng Xia	Ph.D. CPE (2011)		*
Kaiqi Xiong	Ph.D. CSC (2008)		*
Chris Taggart	Ph.D. EE (2008)		*
Ning Liu	Ph.D. CSC (2009)		*
Keerthana Baloor	Ph.D. CPE (2012)		*

Meyiappan Nagappan	Ph.D. CSC (2011)		*
Lei Sun	Ph.D. CPE		*
Huan Luo	Ph.D. CPE		*
Zhuo Lu	Ph.D. CPE (2013)		*
Chi Yi	Ph.D. CPE		*
Yuan Zhang	Ph.D. ORE (2012)		*
Bushra Anjun	Ph.D. CSC (2012)		*
Yongchul Kim	Ph.D. CPE (2011)		*
Yujin Li	Ph.D. CPE		*
Xin Xu	Ph.D. CPE		*
Fengyuan Gong	PhD CPE		*
Chunxue Yang	MS CPE (2014)	*	
Yun Wang	M.S. CPE (2014)	*	
Ahsanur Rashid	M.S. (2012)	*	
Shalini Chauhan	M.S. (2011)	*	
Umang Chaudhury	M.S. (2010)	*	
Nilesh Gavaskar	M.S. (2010)	*	
Deepti Phadnis	M.S. (2010)	*	
Prakhyath Makam	M.S. (withdrawn 2009)	*	
Chaitanya Godbole	M.S. (2008)	*	
Sai S. Oruganti	M.S. (2004)	*	
Fatih Haciomeroglu	M.S. (2003)	*	
Nisha Rajagopal	M.S. (2006)	*	
Remya Krishnamoorthy	M.S. (2008)		*
Pradeep Salla	M.S.		*
Sajidul Rahman Ayyar	M.S. (2002)		*
Khurram Matin Khan	M.S. (2001)		*
Vishwas S. Puttasubbappa	M.S. (2005)		*
Ozdemir Akin	M.S. (2002)		*
Ratnakar V. Jonnadula	M.S. (2004)		*
Asavari Thombare	M.S. (2005)		*
Mradula Neginhal	M.S.		*
Mohit Sood	M.S. (2006)		*
Savitha Sridharan	M.S. (2006)		*
Chintan Desai	M.S. (2005)		*
Nader Shinouda	M.S. (2005)		*
Zyad Zwekat	M.S. (2005)		*
Savera Tanwir	M.S.		*
Mursalin Habib	M.S. (2009)		*
Keerthana Baloor	M.S. (2009)		*
Annesha Bophana	M.S. (2011)		*
Aditya Ambadkar	M.S. CPE (2013)		*
Brian Bouterse	Ph.D. CSC		*
Mingkui Wei	Ph.D. CPE		*
Savera Tanwir	Ph.D. CSC		*

GRADUATE COMMITTEES (at Carleton University):

Student name	Degree (defense)	Chairman	Member
Benjamn Feng	Ph.D. (2009)	* (co-chair)	
Benjamin Feng	M. Eng. (2004)		*
Yan Robichaud	M. Eng. (2004)		*

		Co-Advisor	Member
Houjin Li	M. Eng (2004)		*
Baohua Zhang	M.S. (2005)		*
Changcheng Huang	Ph.D. (1997)	*	
Matthias Falkner	Ph.D. (2000)	*	
Tao Wan	Ph.D. (1999)	*	
Melanie Fortin	M. Eng. (2000)	*	
Nabil Seddigh	M. Eng. (2001)	*	
Mandeep Baines	M. Eng. (2002)	*	
Wentao Shen	M. Eng. (2002)	*	
Benjamin Feng	M. Eng. (2004)	*	
Houjin Li	M. Eng. (2004)	*	
Kevin Chafe	M. Eng. (2000)	*	
Hamid Syed	M. Eng. (1999)	*	
Wen Zhao	M. Eng. (1998)	*	
Jianmei Chen	M. Eng. (1997)	*	
Gerasimos Klaoudatos	M. Eng. (1997)	*	
Tarkan Taralp	M. Eng. (1997)	*	
Ming Leung	M. Eng. (1998)	*	
Dusan Mudric	M. Eng. (1998)	*	
Galina Dubrovina	M. Eng. (1999)	*	

As regular faculty at Carleton, and before his departure to NC State, Dr. Devetsikiotis participated in an **additional 25 graduate committees** and Master's/Ph.D. exams in the Departments of Systems and Computer Engineering, Mathematics, and Statistics. Dr. Devetsikiotis has also participated in graduate committees for the Department of Mathematics in the University of Ottawa and the Ottawa-Carleton Institute of Electrical and Computer Engineering.

GRADUATE COMMITTEES (elsewhere):

Student name	Degree [defense]	Co-Advisor	Member
Timothy Neame, University of Melbourne, Australia	Ph.D. (2003)		*
Andre Drummond, State University of Campinas, Brazil	M.S. (2004), Ph.D. (2009)	*	
Benjamin Feng, Carleton University, Canada	Ph.D.		*

SPECIAL PROJECTS WITH STUDENTS AT NC STATE

Advised several *Graduate* ECE and CSC students for *Special Topics* course work (ECE 633/634, CSC 630) including Andrew Williams, Guru Ranganathan, Konstantinos Benekos, Chaitanya Godbole, John Devide Sena, Indira Pulla, Nilesh Gavaskar, Selvaganapathy Deepti Phadnis, Chidambaram, Frank Ramirez, Manisha Ankam, Shrikanth Chandrasekar, Yan Wang, Andrew Gossett, and Shalini Chauhan.

MENTORING OF JUNIOR FACULTY

Dr. Devetsikiotis has been very active in the mentoring of junior faculty including: (1) former student Changcheng Huang, now an Associate Professor at Carleton University, (2) the more junior members of the IEEE Technical Committee chaired by Dr. Devetsikiotis (Communication Systems Integration and Modeling), and (3) most importantly, junior members of the ECE Networking group, Wenye Wang and Do Young Eun.

UNDERGRADUATE ADVISING AT NC STATE (2001-2015)

Dr. Devetsikiotis initiated and supervised several senior design teams during academic years 2011-12, 2012-13, 2013-14 and 2014-15.

Dr. Devetsikiotis initiated and supervised three senior design projects (nine students) during the academic year 2008-09, and two senior design projects (six students) during the year 2009-2010.

Dr. Devetsikiotis, as co-PI of an NSF funded REU program (research experiences for undergraduates), has been active in the recruiting of undergraduates from other universities who come to NC State for a summer to do research with ECE faculty. He has also been part of organizing their activities during their stay at NC State.

Dr. Devetsikiotis mentored Parks Scholar Kapish Aggarwal. He has attended Parks Scholar meetings, and he has assisted Kapish in finding summer research opportunities at NC State.

Between late 2001 and Fall 2003 Dr. Devetsikiotis supervised the project work of Robert Callaway, then junior in Computer Engineering. Mr. Callaway set up a Linux testbed for self-sizing in MPLS. Mr. Callaway has finished his Master's degree under Dr. Devetsikiotis' supervision and has been accepted into the ECE Ph.D. program.

Dr. Devetsikiotis hosted and supervised the IAESTE summer international exchange students Ioannis Fotiou (2002) and Juliano Notto (2003). This was a very successful experience both for the exchange students, who learned a lot about NC State, North Carolina and the U.S., but also for the Networking and Communications research group. Not only did the group benefit the research work completed by Mr. Notto, it is also highly likely that he will be recruited as a graduate student in the near future.

SENIOR DESIGN SUPERVISION AT CARLETON UNIVERSITY (1996 – 2001)

During the 1996-97, 1997-98, 1998-99, 1999-00 and 2000-01 academic years, I supervised a total of twenty two (22) 4th year students doing their senior projects in the Systems Engineering Department at Carleton University.

POST DOCTORAL SUPERVISION AT CARLETON UNIVERSITY (1996-2000)

Name	Sponsor	Research Area	Period
Nikolai Laskin	MITACS, CITO	Traffic Modeling	1/00 – 4/02
Jiangbin Huang	MITACS	Performance Analysis of Netwotks	9/99 – 3/01
Kaushik Das	MITACS	Performance Analysis of Networks	1/99 – 9/99
Qi Hao	NSERC/Nortel	Optimal Self-Sizing of Networks	3/98 – 2/99
Sergei Grishechkin	Nortel/CITO	Multistability and Catastrophe in Networks	10/97 – 3/00

D. MASTER'S AND DOCTORAL THESES DIRECTED AND BEING DIRECTED

Show numbers and dates in each category

During this period, Dr. Devetsikiotis has actively been directing the theses of five (5) Ph.D. students and one (1) Master's students; he graduated zero (0) Ph.D. and two (2) Masters student in 2014.

Ph.D. (Total 21)

Student name	Degree (defense)
Kostantinos Christidis	Ph.D.
Cuiyu Kong	Ph.D.
Shalini Chauhan	Ph.D. (to MS in 2014)
Daehyun Ban	Ph.D. (2012)
Boonyarith Saovapakhiran	Ph.D. (2013)
I. Safak Bayram	Ph.D. (2013)
Ioannis Papapanagiotou	Ph.D. (2012)
Vineet Kulkarni	Ph.D. (2012)
Michalis Kallitsis	Ph.D. (2010)
Georgios Plitsis	Ph.D. (withdrawn 05/08)
Robert Callaway	Ph.D. (2008)
Chi-Chieh Hsu	Ph.D. (2007)
Srikant Nalatwad	Ph.D. (2006)
Peng Xu	Ph.D. (2005)
Jie Hui	Ph.D. (2005)
Vladica Stanisic	Ph.D. (2005)
Bobby M. Ninan	Ph.D. (2004)
At Carleton University:	
Benjamin Feng	Ph.D. (2009)
Matthias Falkner	Ph.D. (2000)
Tao Wan	Ph.D. (1999)
Changcheng Huang (co-chair)	Ph.D. (1997)

Masters (Total 26)

Student name	Degree (defense)
Megan Becvarik	M.S.
Chunxue Yang	M.S. (2014)
Yun Wang	M.S. (2014)
Ahsanur Rashid	M.S. (2012)
Shalini Chauhan	M.S. (switched to PhD)
Umang Chaudhury	M.S. (2010)
Nilesh Gavaskar	M.S. (2010)
Deepti Phadnis	M.S. (2010)
Prakhyath Makkam	M.S. (withdrawn)
Chaitanya Godbole	M.S. (2008)
Nisha Rajagopal	M.S. (2006)
Sai S. Oruganti	M.S. (2004)
Fatih Haciomeroglu	M.S. (2003)
At Carleton University:	
Melanie Fortin	M. Eng. (2000)
Nabil Seddigh	M. Eng. (2001)
Mandeep Baines	M. Eng. (2002)
Wentao Shen	M. Eng. (2002)
Benjamin Feng	M. Eng. (2004)
Houjin Li	M. Eng. (2004)
Kevin Chafe	M. Eng. (2000)
Hamid Syed	M. Eng. (1999)
Wen Zhao	M. Eng. (1998)
Jianmei Chen	M. Eng. (1997)
Gerasimos Klaoudatos	M. Eng. (1997)
Tarkan Taralp	M. Eng. (1997)
Ming Leung	M. Eng. (1998)
Dusan Mudric	M. Eng. (1998)
Galina Dubrovina	M. Eng. (1999)

III. SCHOLARSHIP IN THE REALMS OF FACULTY RESPONSIBILITY

(Scholarship in Teaching, Discovery of Knowledge, Creative Artistry and Literature, Technological and Managerial Innovation, Extension and Engagement)

A. PUBLICATIONS, AWARDS, AND ED. BOARD/PROGRAM COMITTEE

List items as applicable, e.g., original research articles and research review articles in peer-reviewed journals, refereed articles that are pedagogy or extension-related, research abstracts, books; interdisciplinary/multidisciplinary works; invited and contributed research presentations; appointments or election to study sections and editorial boards; creative or professional works; exhibitions; juried shows, honors; awards, fellowships, prizes, competitions, and other pertinent evidence.

Publication Type	Number
Refereed Journal Articles Published or Accepted	37
Journal Articles Submitted and Pending	3
Refereed Conference Papers Published or Accepted	119
Conference Paper Submitted and Pending	3
Standards Contributions	2
Non-Refereed/Invited Presentations	58
Book Chapters	5

JOURNAL PUBLICATIONS

(a) Published

1. I. Papapanagiotou, Matthias Falkner, and M. Devetsikiotis, "Optimal Functionality Placement for Multi-Play Service Provider Architectures", in IEEE Trans. on Network and Services Management, vol. 9, no. 3, Sept. 2012.
2. M. Kallitsis, G. Michailidis, and M. Devetsikiotis, "Optimal Power Allocation under Communication Network Externalities", in IEEE Transactions on Smart Grid, vol. 3, no. 1, pp. 162-173, Mar. 2012.
3. I. Papapanagiotou, F. Granelli, D. Kliazovich, M. Devetsikiotis, A Metamodeling Approach for Cross-Layer Optimization: A Framework and Application to Voice over WiFi", Simulation Modeling Practice and Theory, Volume 19, pp. 2117-2129, 2011.
4. R. Callaway and M. Devetsikiotis, "An Autonomic Service Delivery Platform for Service Oriented Network Environments", in the IEEE Transactions on Services Computing, vol. 3, no. 2, pp. 104-115, April-June 2010.
5. Z. Benajmin Feng, C. Huang and M. Devetsikiotis, "FISTE: A Black-Box Approach for End-to-End QoS Management", in ACM Transactions on Modeling and Computer Simulation, vol. 19, no. 4, October 2009.
6. M. G. Kallitsis, G. Michailidis and M. Devetsikiotis, "Measurement Based Optimal Resource Allocation of Network Services via Pricing Differentiation", in Performance Evaluation, vol. 66, no. 9-10, pp 505-223, Sept. 2009.
7. I. Papapanagiotou, D. Toumpakaris, J. Lee and M. Devetsikiotis, " A Survey on Next Generation Mobile WiMax Networks: Objectives, Features and Technical Challenges", in IEEE Journal of Communications Surveys and Tutorials (on-line), vol. 11, number 4, pp. 3-18, fourth quarter 2009.
8. I. Papapanagiotou, G. S. Paschos and M. Devetsikiotis, "A Comparison Performance Analysis of QoS WLANs: Approaches with Enhanced Features," Journal of Advances in Multimedia, vol. 2007, article ID 23817, special issue on "Multimedia Transmission over Emerging Wireless Technologies".
9. J. Hui and M. Devetsikiotis. "The Use of Metamodeling for VoIP over Wi-Fi Capacity Evaluation", in the IEEE Transactions on Wireless Communications, vol. 7 (1), pp 1-5, January 2008.
10. A. Drummond, N. Fonseca and M. Devetsikiotis, "A Multiobjective Fuzzy Bandwidth Partitioning Model for Self-Sizing Networks", in the European Journal of Operations Research, vol. 191/3, pp 1161-1174, 2008.
11. S. S. Nalatwad and M. Devetsikiotis, "Wavelet-based Neighborhood Control for Self-Sizing Networks", in *Simulation*, Trans. of the Society for Modeling and Simulation International, vol. 83 (3), pp 229-244, March 2007.

12. C.-C. Hsu and M. Devetsikiotis, "An Adaptive Approach to Accelerated Evaluation of Highly Reliable Systems", in *ACM Transactions on Modeling and Computer Simulation*, vol. 18 (1), December 2007.

13. P. Xu, G. Michailidis and M. Devetsikiotis, "Profit Oriented Resource Allocation Using On Line Scheduling in Flexible Heterogeneous Networks", in *Telecommunication Systems,* Vol. 31, Numbers 2-3, March 2006, pages 289 – 303.

14. J. Hui and M. Devetsikiotis, "A Unified Model for the Saturation Throughput and Delay Analysis of IEEE 802.11 EDCF", *IEEE Transactions on Communications*, vol. 53, number 9, pp 1498 - 1510, Sept. 2005.

15. B. M. Ninan and M. Devetsikiotis, "Game-Theoretic Resource Pricing for the Next Generation Internet, in *Performance Evaluation and Planning Methods for the Next Generation Internet*, special issue by Springer for the 25th Anniversary of GERAD, Andre Girard, Brunilde Sanso and Felisa Vazquez-Abad, Editors, pp 141 -164.

16. S. S. Oruganti and M. Devetsikiotis, "Robust AQM Schemes for Correlated and Cooperative Traffic", *Computer Communications,* Volume 28, Issue 1, 31 January 2005, pp 1-11.

17. A. U.H. Sheikh, T. Wan, Z. Al-Akhdhar, I. Lambadaris and M. Devetsikiotis, "Performance Analysis of Buffered R-ALOHA Using Tagged user Approach," *Journal of Network & Computer Applications*, vol. 27, no. 3, pp 131-150, Elsevier Publishers, August 2004.

18. S. Grishechkin, M. Devetsikiotis, I. Lambadaris and C. Hobbs, "Retransmission as a Source of Multistability," in SIAM Theory on Probability and its Applications, vol. 47, 1, pp 139 – 150, 2003.

19. F. Haciomeorglu and M. Devetsikiotis, "A Dynamic Time Scale Approach for On-Line Measurement-based Capacity Allocation", *Journal of the Brazilian Telecommunications Society*, vol. 18, number 2, pp 209 – 217, October 2003.

20. N. Laskin, I. Lambadaris, F. Harmantzis and M. Devetsikiotis, "Fractional Levy Motion and its Application to Traffic Modeling", *Computer Networks*, vol. 40, no. 3, pp. 363 - 375, October 2002 (Special Issue on *Long-Range Dependent Traffic Engineering).*

21. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "An Overview of Pricing Concepts for Broadband Networks", in *IEEE Communication Surveys*, Vol. 3, No. 2, 2nd quarter 2000 (on line).

22. A. Iuoras, P. Takats, C. Black, R. DiGirolao, E. A. Wibowo, J. Lambadaris and M. Devetsikiotis, "Quality of Service-Oriented Protocols for Resource Management in Packet-Switched Satellites", in the *International Journal of Satellite Systems*, vol. 17, no. 2-3, pp. 129-141, 1999.

23. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "Issues on Fast Network Simulation by Use of Effective and Decoupling Bandwidths", *ACM Transactions on Modeling and Computer Simulation*, vol. 9, no. 1, January 1999, pp 45-58.

24. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "Minimum Cost Traffic Shaping", *IEEE Communications Letters,* Vol. 3, No. 9, pp 257-259, September 1999.

25. T. Taralp, M. Devetsikiotis, and I. Lambadaris, "In Search of Better Statistics for Traffic Characterization", *Journal of the Brazilian Computer Society*, special issue on *Traffic Modeling and Control of Wired and* Wireless Networks, Vol. 5, No. 3, pp. 5-13, April 1999.

26. C. Huang, M. Devetsikiotis, I. Lambadaris, and A.R. Kaye, "Fast Simulation of Queues with Long-Range Dependent Traffic", Communications in Statistics - Stochastic Models, Vol. 15, No. 3, pp. 429 – 460, 1999.

27. J. K. Townsend, Z. Haraszti, J. A. Freebersyser, and M. Devetsikiotis, "Simulation of Rare Events in Communication Networks", IEEE Communications Magazine, Vol. 36, No. 8, pp 36 – 41, August 1998.

28. C.M. Sharon, I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Modeling and Control of VBR H.261 Video Transmission over Frame Relay Networks", *IEEE Transactions on Circuits and Systems for Video Technology,* Vol. 7, No. 3, pp. 527-538, June 1997.

29. R. Ismail, I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Simulation and Modeling of Variable Bit Rate MPEG Video Transmission over ATM Networks", *International Journal of Communication Systems*, Vol. 9, pp. 283-297, 1996.

30. W.A. Al-Qaq, M. Devetsikiotis, and J.K. Townsend, "Stochastic Gradient Optimization of Importance Sampling for the Efficient Simulation of Digital Communication Systems", *IEEE Transactions on Communications*, Vol. 43, No. 12, pp 2975 – 2985, December 1995.

31. I. Lambadaris, M. Devetsikiotis, A. R. Kaye, M. R. Ismail, C. M. Sharon, Y. Fang, and C. Huang, "Traffic Modeling and Design Methodologies for Broadband Networks", *Canadian Journal of Electrical and Computer Engineering*, Vol. 20, No. 3, pp 105 – 116, 1995.

32. M. Devetsikiotis, J.K. Townsend, "An Algorithmic Approach to the Optimization of Importance Sampling Parameters in Digital Communication System Simulation", *IEEE Transactions on Communications*, Vol. 41, No. 10, pp 1464 – 173, October 1993.

33. M. Devetsikiotis, J. K. Townsend, "Statistical Optimization of Dynamic Importance Sampling Parameters for Efficient Simulation of Communication Networks", *IEEE/ACM Transactions on Networking*, 1(3), pp 293 – 305, June 1993.

34. W. A. Al-Qaq, M. Devetsikiotis, and J. K. Townsend, "Importance Sampling Methodologies for Simulation of Communication Systems with Time-Varying Channels and Adaptive Equalizers," *IEEE Journal on Selected Areas in Communications*, Vol. 11, No. 3, pp. 317-327, April 1993.

(b) In Press
1. C. Kong. I. S Bayram, and M. Devetsikiotis, "Multi-Class Charging Station Models for Plug-in Electric Vehicles with Li-ion Batteries", accepted for publication in the IEEE Access.
2. I. S. Bayram, G. Michailidis, M. Devetsikiotis, and F. Granelli, "Electric Power Allocation in a Network of Fast Charging Stations", to appear in the IEEE Journal on Selected Areas in Communications: Smart Grid Communication Series.
3. I. S. Bayram, G. Michailidis, and M. Devetsikiotis, "Unsplittable Load Balancing in a Network of Charging Station under QoS Guarantees," accepted for publication in IEEE Transactions on Smart Grid.

(c) In Review

1. I. S. Bayram, I. Papapanagiotou G. Michailidis, and M. Devetsikiotis, "A Survey on Communication Technologies and Requirements for Electric Vehicle Networks," in review for IEEE Communication Tutorials and Surveys.
2. I. S. Bayram, G. Michailidis and M. Devetsikiotis, "Load Balancing in a Network of Charging Stations under Communication Uncertainty," in review for IEEE Journal on Selected Areas in Communications, JSAC.
3. D. Ban, G. Michailidis, and M. Devetsikiotis, "Price Based Mechanisms for PEV Charging Stations with Spatio-Temporal Difference Awareness", submitted to IEEE Transactions on Smart Grid.

BOOKS
1. G. Michailidis, and M. Devetsikiotis (editors), "Smart Grid Communications: Modeling for Design and Performance" in preparation for Springer, due third quarter 2015.

BOOK CHAPTERS
(a) Published

1. I. S. Bayram, G. Michailidis, M. Devetsikiotis, F. Granelli, and S. Bhattacharya, "Smart Vehicles in the Smart Grid: Challenges, Trends, and Application to the Design of Charging Stations", in Control & Optimization Methods for Electric Smart Grids, A. Chakrabortty and M. D. Ilic (Eds.), Springer, MA, 2012.
2. I. Papapanagiotou, J. Hui and M. Devetsikiotis. "On the Pricing of WiMAX Networks", in the book "WiMAX Evolution: Emerging Technologies and Applications", M. Katz and F. Fitzek (eds.), Wiley, March 2009, ISBN 978-0470696804.
3. D. Kliazovich, M. Devetsikiotis and F. Granelli, "Formal Methods in Cross-Layer Modeling and Optimization of Wireless Networks: State of the Art and Future Directions", in "Heterogeneous Next Generation Networking: Innovation and Platform", S. Kotsopoulos and K. Ioannou, editors, IDEA publishing group.
4. M. Devetsikiotis and N. Fonseca, "Network Traffic Modeling", the Wiley Encyclopedia of Telecommunications (J. Proakis, editor), John Wiley & Sons.

(b) To appear

STANDARDS BODY CONTRIBUTIONS

1. "NAL Compatible to QoS Controlled Network", submitted to Joint Video Team (JVT) of ISO/IEC MPEG & ITU-T VCEG (ISO/IEC JTC1/SC29/WG11 and ITU-T SG16 Q.6), 3rd Meeting: Fairfax, Virginia, USA, 6-10 May, 2002.
2. Since the Fall of 2000 I have been working with Nortel Networks to define traffic and system models to assist the standardization efforts of the IEEE 802.17 Working Group (new multiple access protocols for metropolitan area optical rings).

PEER-REVIEWED CONFERENCE/WORKSHOP PUBLICATIONS

(a) In Published Proceedings

1. M. C. Falvo, D. Sbordone, I. S. Bayram, M. Devetsikiotis, "EV Charging Stations and Modes: International Standards" in Proc. of *Intl. Symposium on Power Electron. Electr. Drives Autom. Motion 2014 (SPEEDAM 2014, IEEE conference publications)*, Jun. 2014.
2. D. Sbordone, M.C. Falvo, L. Martirano, M. Devetsikiotis, B. Di Pietra, "Interactive Energy: An Approach to the Dynamic Pricing and Dispatching of EC Charging Service," in Proc. of the 40th Annual Conference of the IEEE Industrial Electronics Society, IECON 2014, pp 3556-3562.
3. K. Christidis, M. Devetsikiotis, "Experimenting with a Cloud Computing Platform for Research into Smart Buildings," in Proceedings of 2nd ICA CON, 2014.
4. Q. Wang, F. Granelli, and M. Devetsikiotis, "Fast Power Charging Strategy for EV/PHEV in Campus Parking with Deployment of Renewable Energy," in Proc. of IEEE CAMAD 2014, pp. 370-374.
5. I. S. Bayram, G. Michailidis, I. Papapanagiotou, and M. Devetsikiotis, "Decentralized Control of Electric Vehicles in a Network of Fast Charging Stations," in proceedings of IEEE Globecom 2013.
6. I. S. Bayram, G. Michailidis, M. Devetsikiotis, "Electric Power Provisioning for Large Scale EV Charging Stations", in proceeding of IEEE SmartGridComm 2013, Vancouver, Canada.
7. Chunxue Yang, M. Devetsikiotis and D. Thuente, "Analysis of Priority Inversion Problem for 802.11 Wireless LAN". In proceedings of OPNET Works, August 2013.
8. I. Safak Bayram, George Michailidis, Michael Devetsikiotis, Babak Parkhideh, "Comparison of Charging Strategies with Respect to Energy Storage Technologies in DC Fast Charging Stations", in Proceedings of IEEE SmartGridComm 2102, Taiwan (best paper award).

9. B. Saovapakhiran, M. Devetsikiotis, G. Michailidis, and Y. Viniotis, "Average Delay SLAs in Cloud Computing", in Proc. of IEEE ICC 2012, Ottawa, Canada, June 2012, pp. 1302-1308.
10. B. Saovapakhiran, G. Michailidis, and M. Devetsikiotis, "An Algorithm for Joint Guidance and Power Control for Electric Vehicles in the Smart Grid," in Proc. Of IEEE ICC 2012, Ottawa, Canada, June 2012, pp. 3328-3334.
11. I. Papapanagiotou, R. D. Callaway and M. Devetsikiotis, "Chunk and Object Level Deduplication for Web Optimization: A Hybrid Approach", Proc. of IEEE ICC 2012, Jun. 2012, Ottawa, Canada.
12. Daehyun Ban, George Michailidis, and Michael Devetsikiotis, "Demand Response Control for PHEV Charging Stations by Dynamic Price Adjustment", IEEE Innovative Smart- Grid Technology (ISGT), 2012.

13. M. Kallitsis, G. Michailidis, M. Devetsikiotis, "Network Decomposition in Practice: an Application to Optimal Resource Allocation", in Proc. of IEEE Globecom 2011, Houston, Dec. 2011.
14. B. Saovapakhiran and M. Devetsikiotis, "Aggregated-DAG Scheduling for Job Flow Maximization in Heterogeneous Cloud Computing", in Proc. of IEEE Globecom 2011, Houston, Dec. 2011.
15. M. Kallitsis, G. Michailidis, M. Devetsikiotis, A Decentralized Algorithm for Optimal Resource Allocation in Smartgrids with Communication Network Externalities, in Proc. of the 2nd IEEE SmartGridComm, Brussels, Belgium, 2011.

16. I. S. Bayram, M. Devetsikiotis, G. Michailidis, S. Bhattacharya, A. Chakrabortty, and F. Granelli, "Local Energy Storage Sizing in Plug-in Hybrid Electric Vehicle Charging Stations Under Blocking Probability Constraints", n Proc. of the 2nd IEEE SmartGridComm 2011.

17. D. Ban and M. Devetsikiotis, "A Graph Sparsification Approach for Scalable Stability Analysis in Large-Scale Power Grids", in Proc. of the 2nd IEEE Smartgridcomm 2011.

18. D. Ban and M. Devetsikiotis, "A Content Freshness Enhancement with Infrastructures in Mobile Opportunistic Networks", in Proc. of IEEE MILCOM 2011.

19. B. Saovapakhiran and M. Devetsikiotis, "Enhancing Computing Power by Exploiting Underutilized Resources in the Community Cloud", in Proceedings of IEEE ICC 2011, Kyoto, Japan, June 2011.

20. N. Gavaskar, M. Kallitsis, G. Michailidis, M. Devetsikiotis, and M. Montoya, "Performance Modeling of Virtual Collaborative Environments", in EFSOI 2010, Miami, Dec. 2010, Miami.

21. M. G. Kallitsis, G. Michailidis, and M. Devetsikiotis, "On Optimal Data Communications in Smart Grids: Towards Measurement based Power Distribution", in Proceedings of the First IEEE SmartGridComm Conference, Oct. 2010.

22. U. K. Chaudhary, I. Papapanagiotou, and M. Devetsikioitis, "*Flow Classification Using Clustering and Association Rule Mining*", in Proceedings of IEEE CAMAD 2010, 3-4 Dec. 2010, Miami. (Best Paper Award).

23. A. M. Gossett, I. Papapanagiotou, and M. Devetsikiotis, "*An Apparatus for P2P Classification in Netflow Traces*", in Proceedings of IEEE GLOBECOM 2010 Workshop on Enabling the Future Service-Oriented Internet (EFSOI 2010), Dec. 2010, Miami.

24. Vineet Kulkarni and Michael Devetsikiotis, "Communication Timescales, Structure and Popularity: Using Social Network Metrics for Youtube-like Multimedia Content Distribution", in Proceedings of IEEE ICC 2010, Cape Town, South Africa, May 2010.

25. Ioannis Papapanagiotou and Michael Devetsikiotis, "Aggregation Design Methodologies for Triple Play Services", in proceedings of IEEE CCNC, Las Vegas, January 2010.

26. Michael G. Kallitsis, Robert D. Callaway, George Michailidis and Michael Devetsikiotis, "Presence Aware Optimal Resource Allocation for Virtual Collaboration Web 3.0 Environments", in proceedings of the 3d Enabling the Future Service Oriented Internet Workshop, EFSOI 2009, held under IEEE Globecom, Hawai'i December 2009.

27. *Vineet Kulkarni and Michael Devetsikiotis, "Social Distance Aware Allocation in Wireless Networks", in proceedings of IEEE Globecom 2009, Hawai'i, December 2009 *(*Best paper award).*

28. Michael G. Kallitsis, Robert D. Callaway, George Michailidis and Michael Devetsikiotis, "A Distributed Algorithm for Resource Allocation for Delay Sensitive Services", in Proceedings of the 14th IEEE International Workshop on Computer-Aided Modeling and Design of Communications Links and Networks, CAMAD 2009, Pisa, Italy, June 2009.

29. J. V. Sena Devide, A. Neely, C-W Ho, L. Williams and M. Devetsikiotis, "A real-Time Tool for Distribted Pair Programming in A Team Development Effort", in Proceedings of FSE 2008.

30. B. Z. Feng, C. Huang and M. Devetsikiotis, "An End-to-End Performance Inference Technique for Peer-to-Peer Networks", in proceedings of IEEE Globecom 2008.

31. M. G. Kallitsis, R. Callaway, M. Devetsikiotis and G. Michailidis, "Distributed and Dynamic Resource Allocation for Delay Sensitive Network Services", in Proceedings of IEEE Globecom 2008.

32. R. Callaway, M. Devetsikiotis, Y. Viniotis and A. Rodriguez, "An Autonomic Service-Delivery Platform for Service-Oriented Network Environments", in Proceeding of IEEE ICC 2008, Beijing, May 2008.

33. *V. Kulkarni and M. Devetsikiotis, "Cross-Layer Response Surface Methodology Applied to Wireless Mesh Network VoIP Call Capacity", in Proceedings of the 41st Annual Simulation Symposium, Ottawa, Canada, April 2008 *(best paper award).*

34. *I. Papapanagiotou, G. S. Paschos, S. A. Kotsopoulos and M. Devetsikiotis, "Extension and Comparison of QoS-Enabled Wi-Fi Models in the Presence of Errors," in Proceedings of IEEE Globecom 2007, Washington, DC, Nov. 2007 *(best paper award).*

35. F. Granelli, D. Kliazovich, J. Hui and M. Devetsikiotis, "Performance Optimization of Single-Cell Voice over WiFi Communications Using Quantitative Cross-Layering Analysis", in Proceedings of ITC 20, Ottawa, Canada, June 2007.

36. C-C. Hsu and M. Devetsikiotis, "A Framework for Automatic Software Performance Evaluation and Optimization Using Response Surface Methodology and Importance Sampling", in Proceedings of the 40th Annual Simulation Symposium, Norfolk, March 2007.

37. M. G. Kallitsis, G. Michailidis and M. Devetsikiotis, "Pricing and Optimal Resource Allocation in Next Generation Network Services", in Proceedings of the IEEE Sarnoff Symposium, April 2007.

38. R. Callaway, A. Rodriguez, M. Devetsikiotis and G. Cuomo, "Challenges in Service-Oriented Networking", in proceedings of IEEE Globecom 2006.

39. C-C. Hsu and M. Devetsikiotis, "Fast Simulation of Optical Burst Switching Networks Using Simulated Annealing", in proceedings of ACM MASCOTS 2006.

40. F. Granelli and M. Devetsikiotis, "Designing Cross-Layering Soultions for Wireless Networks: a General Framework and its Application to a Voice-over-WiFi Scenario", in proceedings of IEEE CAMAD 2006, Trento, Italy, June 2006.

41. J. Hui and M. Devetsikiotis, "Metamodeling of Wi-Fi Performances", in proceedings of IEEE ICC 2006, Istanbul, June 2006.

42. B. Zhang, C. Huang and M. Devetsikiotis, "Simulated Annealing Based Bandwidth Reservation for QoS Routing," in proceedings of IEEE ICC 2006, Istanbul, June 2006.

43. André C. Drummond, N. Fonseca and M. Devetsikiotis, "Bandwidth Allocation in Self-Sizing Networks Under Uncertain Constraints", in proceedings of IEEE ICC 2006, Istanbul, June 2006.

44. S. Nalatwad and M. Devetsikiotis, "A Framework for Adaptive Wavelet Prediction in Self-Sizing Networks", in proceedings of the 39th Annual Simulation Symposium, Huntsville, Alabama, April 2006.

45. N. Rajagopal and M. Devetsikiotis, "Modeling and Optimization for the Design of IMS Networks", in proceeding of the 39th Annual Simulation Symposium, Huntsville, Alabama, April 2006.

46. B. Feng, C. Huang, M. Devetsikiotis and P. Rabinovitch, "Provisioning End-to-End Quality of Service with Fast Importance Sampling based Traffic Engineering", in Proceedings of the 19th International Teletraffic Congress, ITC 19, August 2005, pp 839 - 848.

47. V. Stanisic and M. Devetsikiotis, "An Analysis of Bandwidth Allocation Strategies in Multiservice Networks", Proceedings of IEEE ICC 2005, pp 3: 1529 – 1533.

48. V. Stanisic, N. Rajagopal, Y. Viniotis, M. Devetsikiotis and D. Cude, "Engineering Rules for IMS Signaling Networks", Proceedings of OPNETWork 2005, Washington DC, August 2005.

49. P. Xu, G. Michailidis and M. Devetsikiotis, "Online Scheduling for Optimal Resource Allocation in Flexible Heterogeneous Networks", Proceedings of the 39th Conference on Information Sciences and Systems, CISS 2005, Johns Hopkins University, Baltimore 2005.

50. B. Feng, C. Huang, M. Devetsikiotis, and Y. Champoux, "Mapping QoS to Bandwidth Using Importance Sampling Based Traffic Engineering (ISTE)", Proceedings of IEEE ICC 2005, pp 1: 110 – 114.

51. H. Li, C. Huang and M. Devetsikiotis, "A Robust Adaptive Effective Bandwidth Allocation Technique", Proceedings of IEEE ICC 2005, pp 1: 115 – 119.

52. N. Washington, H. G. Perros, C.-C. Hsu and M. Devetsikiotis, "Approximate Analysis and Fast Simulation of Queues with Simultaneous Resource Possession, with Application to Optical Networks," Proceedings of the 8th Annual Simulation Symposium, April 2005, pp 15 – 22.

53. C.-C. Hsu and M. Devetsikiotis, "An Adaptive Approach to Fast Simulation of Traffic Groomed Optical Networks", Proceedings of the Winter Simulation Conference, Washington, D.C., Dec. 2004, pp 612 - 620.

54. S. S. Oruganti and M. Devetsikiotis, "Objective Window Adaptation for Transport Protocols under Imperfect Information," Proceedings of IEEE Globecom 2004, pp 2: 823 – 827.

55. J. Hui and M. Devetsikiotis, "Unified Performance Analysis of IEEE 802.11e EDCA," Proceedings of IEEE Globecom 2004, pp 2: 754 - 759.

56. H. Li, C. Huang, M. Devetsikiotis and G. Damm, "Effective Bandwidths under Dynamic Weighted Round Robin Scheduling," Proceedings of IEEE Globecom 2004, pp 2: 665 - 669.

57. A. C. Drummond, N. Fonseca and M. Devetsikiotis, "A Comparison of Measurement-Based Equivalent Bandwidth Estimators", IEEE Globecom 2004 Workshop Proceedings, Computer-Aided Modeling, Analysis and Design of Comm. Links and Networks, pp 320-326, 2004.

58. B. Feng, C. Huang, M. Devetsikiotis and Y. Champoux, "Network Performance Optimization Using Importance Sampling Theory", in Proceedings of IEEE Globecom 2004 Workshop Proceedings, Computer-Aided Modeling, Analysis, and Design of Comm. Links and Networks, pp 327 – 330, Dec. 2004.

59. S. Nalatwad and M. Devetsikiotis, "Self-Sizing Networks: Local vs. Global Control", Proceedings of IEEE ICC 2004, pp 4: 2163 – 2167.

60. R. D. Callaway, M. Devetsikiotis and C. Kan, "Design and Implementation of Measurement-Based Resource Allocation Schemes within the Realtime Traffic Flow Measurement Architecture", Proceedings of IEEE ICC 2004, pp 2: 1118 - 1122.

61. A. Aresti, B. M. Ninan and M. Devetsikiotis, "Resource Allocation Games in Connection-Oriented Networks under Imperfect Information", Proceedings of IEEE ICC 2004, pp 2: 1060 - 1064.

62. V. Stanisic and M. Devetsikiotis, "Dynamic Utility-based Bandwidth Allocation Policies: The Case of Overloaded Network", Proceedings of IEEE ICC 2004, pp 4: 1958 – 1962.

63. B. M. Ninan and M. Devetsikiotis, "Dynamic Bandwidth Sharing for non-Poisson Arrivals in Connection-Oriented Networks", in Proceedings of the INFORMS Telecommunications Conference, Boca Raton, March 2004.

64. H. Li, C. Huang, M. Devetsikiotis, and G. Damm, "Extending the Concept of Effective Bandwidth to Diffserv Networks", Proceedings of the 2004 IEEE Canadian Conference on Electrical and Computer Engineering - CCECE 2004, pp: 3: 1669 – 1672.

65. B. M. Ninan and M. Devetsikiotis, "Pricing Mediated Bandwidth Allocation for the Next Generation Internet", Proceedings of IEEE Globecom 2003, pp 6: 3030 – 3034.

66. S. Nalatwad and M. Devetsikiotis, "A Self-Sizing Architecture for Distributed Networks", Proceedings of OPNETWORK 2003, Washington DC, August 2003.

67. J. Hui and M. Devetsikiotis, "Designing Improved MAC Packet Schedulers for 802.11e WLAN", Proceedings of IEEE Globecom 2003, pp 1: 184 – 189.

68. F. Haciomeroglu and M. Devetsikiotis, "Comparative Analysis of On-line Measurement-based Capacity Allocation Schemes", in "Recent advances in communications and computer science", Proceedings of the 7th WSEAS International Conference on Communications, Corfu, Greece, July 2003, pp 275 -286.

69. S. S. Oruganti and M. Devetsikiotis, "Analyzing Robust Active Queue Management Schemes: A Comparative Study of Predictors and Controllers", Proceedings of IEEE ICC 2003, Anchorage, Alaska, 2003, pp 3: 1531 – 1536.

70. V. Stanicic and M. Devetsikiotis, "A Dynamic Study of Providing Quality of Service Using Preemption Policies with Random Selection", Proceedings of IEEE ICC 2003, Anchorage, Alaska, 2003, pp 3: 1543 – 1546.

71. B. M. Ninan, G. Kesidis and M. Devetsikiotis, "A Simulation Study of Non-Cooperative Pricing Strategies for Circuit-Switched Optical Networks", Proceedings of IEEE/ACM MASCOTS 2002, Fort Worth, Texas, October 2002, pp 257 - 263.

72. W. Shen and M. Devetsikiotis, "A Self-Sizing Framework for On-Line Resource Allocation in MPLS Networks", Proceedings of IEEE/ACM MASCOTS 2002, Fort Worth, Texas, October 2002, pp 491 - 500.

73. M. Baines, M. Devetsikiotis, B. Nandy, P. Pieda and N. Seddigh, "Using TCP Models to Understand Bandwidth Assurance in a Differentiated Services Network", Proceedings of *IEEE Globecom 2001*, San Antonio, November, 2001, pp 3: 1800 – 1805.

74. J. Yang and M. Devetsikiotis, "On-Line Estimation, Network Design and Performance Analysis with Effective Bandwidths", Proceedings of the International Teletraffic Congress, ITC-17, September 2001, Salvador de Bahia, September 24 – 28, 2001, Brazil.

75. N. Laskin, I. Lambadaris, F. Harmantzis and M. Devetsikiotis, "Fractional Levy Motion and its Application to Traffic Modeling", Proceedings of the International Teletraffic Congress, ITC-17, September 2001, Salvador de Bahia, September 24 – 28, 2001, Brazil.

76. N. Milidrag, G. Kesidis, and M. Devetsikiotis, "Fluid simulation of large packet-switched networks", in Proceedings of *ITCom 2001*, SPIE's International Symposium on the Convergence of Information Technologies and Communications, Denver, August 2001, pp 271 - 277.

77. N. Seddigh and M. Devetsikiotis, "Studies of TCP's Retransmission Timeout Mechanism", Proceedings of *IEEE ICC 2001*, Helsinki, Finland, June 2001, pp 6: 1834 – 1840.

78. M. Devetsikiotis, Q. Hao, S. Tartarelli, M. Falkner, J. Yang and W. Shen, "Self-Sizing of Multiservice High-Speed Networks", Proceedings of the *8th International Conference on Advances in Communications and Control*, Crete, Greece, June 2001.

79. T. Wan, A. Sheikh, I. Lambadaris and M. Devetsikiotis, "Performance and stability analysis of buffered R-ALOHA systems using tagged user approach (TUA)," Proceedings of IEEE VTC-Spring 2000, vol. 2, pp. 1405 -1409, Tokyo, Japan, 2000.

80. G. Klaoudatos, T. Taralp, M. Devetsikiotis and I. Lambadaris, "Traffic Modeling: Techinques, Algorithms and Statitical Measures", Proceedings of *IEEE Globecom 2000*, December 2000, San Francisco, pp 3: 1583 – 1589.

81. Q. Hao and M. Devetsikiotis, "Self-Sizing and Optimization of High-Speed Multiservice Networks", Proceedings of *IEEE Globecom 2000*, December 2000, San Francisco, pp 3: 1818 - 1823.

82. S. Tartarelli, M. Falkner, M. Devetsikiotis and I. Lambadaris, "Empirical Effective Bandwidth", Proceedings of *IEEE Globecom 2000*, December 2000, San Francisco, pp 1: 672 – 678.

83. S. Tartarelli, M. Pagano and M. Devetsikiotis, "Efficient Estimation of the Cell Loss Probability in a Two-Buffer PGPS Scheduler", Proceedings of *IEEE ICC 2000*, June 2000, New Orleans, pp 3: 1320 – 1324.

84. M. Falkner and M. Devetsikiotis, "Guaranteed Service Pricing", presented at the *INFORMS Telecommunications Conference*, March 2000, Boca Raton, Florida.

85. Q. Hao, S. Tartarelli, M. Devetsikiotis and I. Lambadaris, "Design and Optimization of High Speed Multiservice Networks: A Self-Sizing Methodology, presented at the *INFORMS Telecommunications Conference 2000*, March 2000, Boca Raton, Florida.

86. G. Doubrovina, M. Falkner, and M. Devetsikiotis, "Optimal Cost Traffic Shaping with Self-Similar Input Sources", Proceedings of *IEEE GLOBECOM '99*, Rio de Janeiro, Brazil, December 1999, pp 2: 1616 – 1622.

87. H. Syed, K. Das, and M. Devetsikiotis, "TCP Performance for Internet in Wireless Networks: Effects of Network Parameters and Link Capacities", Proceedings of *CCBR '99*, the Third Canadian Conference on Broadband Research, Ottawa, November 1999.

88. H. Syed, K. Das, and M. Devetsikiotis, "TCP Performance and Buffer Provisioning for Internet in Wireless Networks", Proceedings of *MASCOTS '99*, the Seventh International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems, College Park, University of Maryland, Maryland, October 1999, pp 48 – 55.

89. T. Wan, I. Lambadaris, M. Devetsikiotis, and A. Sheikh, "Queueing Analysis of Buffered Slotted DS/CDMA ALOHA Protocols Using Tagged user Approach (TUA)", Proceedings of *IEEE ICC '99*, Vancouver, Canada, June 1999, pp 3: 1933 – 1938.

90. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "Minimum Cost Traffic Shaping: A User's Perspective on Connection Admission Control", Proceedings of *IEEE ICC '99,* Vancouver, Canada, June 1999, pp 3: 1577 – 1582.

91. G. Klaoudatos, M. Devetsikiotis, and I. Lambadaris, "Automated Modeling of Broadband Network Data Using the QTES Methodology", Proceedings of *IEEE ICC '99*, Vancouver, Canada, June 1999, pp 1: 397 – 403.

92. W. Huang, L. Orozco-Barbosa, I. Lambadaris, and M. Devetsikiotis, "Monitoring Multimedia Traffic over TCP/IP/ATM Networks", Proceedings of the *Applied Telecommunications Symposium, ATS '99*, San Diego, April 11 – 15 1999.

93. J. Chen, C. Huang, M. Devetsikiotis, and I. Lambadaris, "Virtual Clock with Priority Buffer: A Resource Sharing Algorithm", Proceedings of *IEEE GLOBECOM '98*, Sydney, Australia, November 1998, pp 1: 416 – 421.

94. T. Taralp, M. Devetsikiotis, and I. Lambadaris, "Efficient Fractional Gaussian Noise Generation Using the Spatial Renewal Process", Proceedings of *IEEE ICC '98*, Atlanta, June 7-11, 1998, pp 3: 1456 – 1460.

95. T. Taralp, M. Devetsikiotis, and I. Lambadaris, "Traffic Characterization for QoS Provisioning in High-Speed Networks", Proceedings of the *31st Hawaii International Conference on System Sciences (HICSS-31),* Hawaii, January 3-9, 1998, pp 7: 485 – 492.

96. C. Huang, I. Lambadaris, M. Devetsikiotis, P. W. Glynn, and A. R. Kaye, "DTMW: A New Congestion Control Scheme for Long-Range Dependent Traffic", presented at the *15th International Teletraffic Congress, ITC 15*, Washington, D.C., June 1997.

97. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "Issues on Fast Network Simulation by Use of Effective and Decoupling Bandwidths", Proceedings *of the Fourth IEEE Workshop on the Architecture and Implementation of High Performance Communication Systems, HPCS '97*, Sani Beach, Halkidiki, Greece, June 23-25, 1997, pp 1 - 9.

98. J. Weng, I. Lambadaris, and M. Devetsikiotis, "Fuzzy Leaky Bucket Congestion Control in ATM Networks with Markovian and Self-Similar Traffic", Proceedings *of IEEE ICC '97, Montreal*, Canada, June 1997, pp: 2: 838 – 843.

99. S. Karademir, I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Dynamic Rate Control of VBR MPEG Video Transmission over ATM Networks", Proceedings *of IEEE Global Telecommunications Conference, GLOBECOM '96,* London, November 1996, pp 3: 1509 – 1515.

100. J.A. Freebersyser, M. Devetsikiotis, W.A. Al-Qaq, and J.K. Townsend, "Fast Simulation of Tandem Networks Using Importance Sampling and Stochastic Gradient Techniques," Proceedings *of IEEE ICC '96 Dallas*, June 23-27, 1996, pp 1: 302 – 308.

101. C. Huang, M. Devetsikiotis, I. Lambadaris, and A.R. Kaye, "Self-Similar Traffic and Its Implications for ATM Network Design", presented at the *IEEE International Conference on Communication Technology, ICCT '96*, Beijing, China, May, 1996, pp 2: 1053 – 1056.

102. C.M. Sharon, I. Lambadaris, A.R. Kaye, and M. Devetsikiotis, "Accurate Modeling of H.261 VBR Video Sources for Packet Transmission Studies", Proceedings *of IEEE GLOBECOM '95*, Singapore, November 13-17, 1995, pp 3: 1904 – 1909.

103. C. Huang, M. Devetsikiotis, I. Lambadaris, and A. R. Kaye, "Modeling and Simulation of Self-Similar Variable Bit Rate Compressed Video: A Unified Approach", presented at *ACM SIGCOMM '95*, Cambridge, Massachusetts, August 30 - September 1, 1995.

104. C. Huang, M. Devetsikiotis, I. Lambadaris, and A.R. Kaye, "Fast Simulation for Self-Similar Traffic in ATM Networks", Proceedings *of IEEE ICC '95*, Seattle, Washington, June 18-22, 1995, pp 1: 438 – 444.

105. C. M. Sharon, M. Devetsikiotis, I. Lambadaris, and A.R. Kaye, "Rate Control of VBR H.261 Video on Frame Relay Networks", Proceedings *of IEEE ICC '95*, Seattle, Washington, June 18-22, 1995, pp 3: 1443 – 1447.

106. Y. Fang, M. Devetsikiotis, I. Lambadaris, and A. R. Kaye, "Exponential Bounds for the Waiting Time Distribution in Markovian Queues, with Applications to TES/GI/1 Systems", Proceedings *of the 1995 ACM SIGMETRICS and Performance '95*, Ottawa, Ontario, May 15--19, 1995.

107. M. R. Ismail, I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Modeling Prioritized MPEG Video Using TES and a Frame Spreading Strategy for Transmission in ATM Networks", Proceedings *of IEEE INFOCOM '95*, Boston, Massachusetts, April 2-6, 1995, pp 2: 762 – 770.

108. Y. Fang, M. Devetsikiotis, I. Lambadaris, and A.R. Kaye, "On Exponential Bounds for the Waiting Time of TES/GI/1 Queues", Proceedings *of the Canadian Conference on Electrical and Computer Engineering, CCECE '94*, Halifax, Nova Scotia, September 25--28, 1994, pp 2: 647 – 651.

109. M.R. Ismail, I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Frame Spreading and an Adaptive Variable Priority Scheme for MPEG Video in an ATM Network," Proceedings *of the Canadian Conference on Electrical and Computer Engineering, CCECE '94*, Halifax, Nova Scotia, September 25- 28, 1994, pp 2: 526 – 530.

110. J.A. Freebersyser, M. Devetsikiotis, and J.K. Townsend, "Efficient Simulation of High-Speed Tandem Networks Using Importance Sampling and Stochastic Gradient Techniques", Proceedings *of IEEE Global Telecommunications Conference, GLOBECOM '94*, San Francisco, November 27- December 1, 1994, pp 2: 1095 – 1099.

111. M. Devetsikiotis, J.K. Townsend, and M.W. White, "Artificial Neural Networks for Modeling and Simulation of Communication Systems with Nonlinear Devices", Proceedings *of IEEE International Conference on Communications, ICC '94*, New Orleans, May 1-5, 1994, pp 2: 763 – 768.

112. M. Devetsikiotis, W.A. Al-Qaq, J.A. Freebersyser, and J.K. Townsend, "Stochastic Gradient Techniques for the Efficient Simulation of High-Speed Networks Using Importance Sampling", Proceedings *of IEEE Global Telecommunications Conference, GLOBECOM '93*, Houston, November 29 - December 2, 1993, pp 2: 751 – 756.

113. W.A. Al-Qaq, M. Devetsikiotis, and J.K. Townsend, "Simulation of Digital Communication Systems Using a Stochastically Optimized Importance Sampling Technique", Proceedings *of IEEE Global Telecommunications Conference, GLOBECOM '93*, Houston, November 29 - December 2, 1993, pp 3: 1718 – 1722.

114. M. Devetsikiotis, Q.G. Zhou, G.R. Cato, J.K. Townsend, and R.M. Kolbas, "Modeling, Analysis and Simulation of an Optical Time-division Multiple-access Network Architecture", *Proceedings of the 1992 SPIE International Symposium, OE/FIBERS '92*, Boston, September 8-11, 1992.

115. W.A. Al-Qaq, M. Devetsikiotis, and J.K. Townsend, "Importance Sampling for Simulation of Communication Systems with Adaptive Equalizers", *Proceedings of IEEE Global Telecommunications Conference, GLOBECOM '92*, Orlando, December 6-9, 1992, pp 3: 1830 – 1834.

116. M. Devetsikiotis, J.K. Townsend, "On the Efficient Simulation of Large Communication Networks Using Importance Sampling Techniques", *Proceedings of IEEE Global Telecommunications Conference, GLOBECOM '92*, Orlando, December 6-9, 1992, pp 3: 1455 – 1459.

117. M. Devetsikiotis, J.K. Townsend, "A Dynamic Importance Sampling Methodology for the Efficient Simulation of Rare Event Probabilities in Regenerative Simulations of Queueing Systems", Proceedings *of IEEE International Conference on Communications, ICC '92*, Chicago, June 14-18, 1992, pp 3: 1290 – 1296.

118. M. Devetsikiotis, J.K. Townsend, "Optimization of Importance Sampling Parameters for the Efficient Simulation of Communication Networks and ATM Switches Using Mean Field Annealing", Proceedings *of the 30th Annual ACM Southeast Conference*, Raleigh, North Carolina, April 8-10, 1992.

119. M. Devetsikiotis, J.K. Townsend, "A Useful and General Technique for Improving the Efficiency of Monte Carlo Simulation of Digital Communications Systems", Proceedings *of IEEE Global Telecommunications Conference, GLOBECOM '90*, San Diego, December 2-5, 1990, pp 2: 1215 – 1221.

(b) In Press (Accepted for Publication)

(c) In Review

1. Y. Wang, M. Becvarik, and M. Devetsikiotis, "Stochastic Modeling of Managed Resources in a Location Aware Smart Building", submitted to IEEE Globecom 2015.

2. K. Christidis and M. Devetsikiotis, " Adaptive Multi Tiered Resource Allocation Policy for Micro Grids", submitted to IEEE Globecom 2015.

3. K. Christidis, G. Michailidis and M. Devetsikiotis, "Load Modeling for Buildings in Campus Microgrids", submitted to IEEE Globecom 2015.

INVITED RESEARCH PRESENTATIONS

1. Invited keynote at the ESTEL conference, Rome, October 2012.
2. Invited presentation on Communications for the Smart Grid, University of Vigo, May 2012.
3. M. Devetsikiotis, "Designing Smarter Networks: Modeling Communications in the Era of Service Awareness, Social Networks and the Smart Grid," featured talk at MACOM 2011, Trento, Italy, Sept. 2011.
4. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Atlanta Section (GaTech-GTRI), November 2011.
5. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Birmingham, Alabama, November 2011.
6. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE South Carolina Section, Columbia, October 2011.
7. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Coastl South Carolina Section, Charleston, October 2011
8. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Atlanta Section (GaTech-GTRI), November 2011.
9. M. Devetsikiotis, "Networked Virtual Collaboration: A Modeling Perspective", presented as part of the IEEE ComSoc Distinguished Lecture series, Charleston, South Carolina, June 2011.
10. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Chicago Chapter (UI-Chicago), May 2011.
11. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, IEEE Denver Chapter (Devry University), May 2011.
12. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, Iowa State University, Ames, IA, May 2011.
13. M. Devetsikiotis, "Networked Virtual Collaboration: A Modeling Perspective ", presented as part of the IEEE ComSoc Distinguished Lecture series, University of Pisa, Italy, September 2010.
14. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, University of Thessaloniki, Greece, November 2010.
15. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, NEC Research, Heidelberg, Germany, October 2010.
16. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, University of Quebec, Canada, November 2010.
17. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, Algonquin College, Ottawa, Canada, November 2010.
18. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, Université du Quebec – Trois Rivieres, Canada, November 2010.
19. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distinguished Lecture series, Concordia University, Montreal, Canada, November 2010.
20. M. Devetsikiotis, "Networked Virtual Collaboration: A Modeling Perspective ", Distinguished Lecture series, University of Cape Town, South Africa, May 2010.
21. M. Devetsikiotis, "Networked Virtual Collaboration: A Modeling Perspective ", Distinguished Lecture series, IMDEA Networks and Unv. Carlos III, Spain, March 2010.
22. M. Devetsikiotis, "---", Distinguished Lecture series, Telefonica Research, Barcelona, Spain, March 2010.
23. M. Devetsikiotis, "---", Distinguished Lecture series, CTTC, Barcelona, Spain, March 2010.
24. M. Devetsikiotis, "---", presented as part of the IEEE ComSoc Distringusihed Lecture series, University of Santiago de Chile, Dec. 2009.
25. M. Devetsikiotis, "---", Distinguished Lecture series, Univ. Católica de Valparaíso, Chile, Dec. 2009.
26. M. Devetsikiotis, "Next Generation Service Oriented Networks: Virtual Collaboration, Modeling, and Optimization", presented at a joint meeting of IEEE and ACM, DeVry University, Columbus, May 2009.
27. M. Devetsikiotis, "Next Generation Service Oriented Networks: Virtual Collaboration, Modeling, and Optimization", presented at the University of Pittsburgh, May 2009.
28. M. Devetsikiotis, "Next Generation Service Oriented Networks: Modeling, Pricing and Optimization", presented at a joint meeting of the IEEE Chapters of Northern Virginia, Washington, D.C. and Baltimore, LTS College Park, May 2009.
29. M. Devetsikiotis, "Next Generation Service Oriented Networks: Modeling, Pricing and Optimization", presented at the National Chamber of Engineering, Santiago, Chile, October 2008.
30. M. Devetsikiotis, "Next Generation Service Oriented Networks: Traffic Modeling and Control", presented at ANTEL, Montevideo, Uruguay, September 2008.

31. M. Devetsikiotis, "Next Generation Service Oriented Networks: Pricing and Optimization", presented at EXPOCOMM 2008 and at the University of Buenos Aires, Argentina, September 2008.
32. M. Devetsikiotis, "Modeling, Online Performance Monitoring and Accelerated Evaluation of Network Services", presented at the College of William and Mary, Williamsburg, March 2007.
33. M. Devetsikiotis, "Modeling, Online Performance Monitoring and Accelerated Evaluation of Network Services", presented at the University of Sao Paulo and the State University of Campinas, Brazil, October 2006.
34. M. Devetsikiotis, "Modeling, Online Performance Monitoring and Accelerated Evaluation of Network Services", presented at Penn State University, September 2006.
35. L. Aiman-Smith, S. Allen, M. Devetsikiotis, C. Nygard, J. McReery, M. Montoya-Weiss, H. Perros, A. Rindos, and I. Viniotis, "Service Science, Management and Engineering Curricula and Research at NC State University", presented at the Global SSME conference, Palisades, NY, 2006.
36. P. Xu, G. Michailidis and M. Devetsikiotis, "Profit Oriented Resource Allocation using On Line Scheduling in Flexible Multi-Service Networks", presented at the 3d IFIP International Workshop on Next Generation Networks: Architectures, Protocols, Performance, Belize, March 2005
37. M. Devetsikiotis, G. Michailidis and P. Xu, "Measurement-based Resource Allocation and On-line Scheduling of Differentiated Services", Economics of Communication Networks, part of the Workshop on Stochastic Networks, University of Montreal, Quebec, Canada, July 2004.
38. M. Devetsikiotis, "Adaptivity Mechanisms in Next Generation Networks", Alcatel Research and Innovation, Paris, France, June 2004.
39. B. M. Ninan and M. Devetsikiotis, "Network Control of Elastic Traffic Through Resource Pricing", presented at the INFORMS Joint Annual Meeting, Atlanta, October 2003.
40. Seminar in Campinas, Brazil, on variance reduction techniques for simulation of high speed networks, during SBC '03.
41. C. A. Viana Neto, M. Devetsikiotis and N. Fonseca, "Network Self-Sizing under Fractal Traffic by Use of Envelope Processes", presented at CAMAD 2002, during IEEE ICC 2002, April 2002, New York City.
42. N. Milidrag, G. Kesidis, and M. Devetsikiotis, "Fluid simulation of large packet-switched networks", presented at *ITCom 2001*, SPIE's International Symposium on the Convergence of Information Technologies and Communications, Denver, August 2001.
43. J. Yang, W. Shen and M. Devetsikiotis, "Self-sizing of Multi-Service High Speed Networks", presented at the Nortel Advanced Network Control Algorithms Workshop, Ottawa, Canada, January 25 – 26, 2001.
44. S. Grishechkin, M. Devetsikiotis, I. Lambadaris and C. Hobbs, "On Catastrophic Behavior of Queueing Networks," presented at the Workshop on Analysis and Simulation of Communication Networks, The Fields Institute for Research in Mathematical Sciences, Toronto, November 1998.
45. M. Devetsikiotis and M. Falkner, "Importance Sampling Methods for Communication Networks", a tutorial presented at the *International Telecommunications Symposium*, ITS '98, São Paulo, Brazil, August 1998.
46. T. Taralp, M. Devetsikiotis, and I. Lambadaris, "In Search of Better Statistics for Traffic Characterization", presented at the *7th IEEE Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks*, CAMAD '98, São Paulo, Brazil, August 1998.
47. M. Devetsikiotis and M. Falkner, "Importance Sampling Methods for Communication Networks", a tutorial presented at the *Third IEEE Symposium on Computers and Communications,* ISCC '98, Athens, Greece, June 1998.
48. M. Falkner, M. Devetsikiotis, and I. Lambadaris, "Issues in Fast Simulation of Networks of Queues by Use of Effective and Decoupling Bandwidths", presented at the *18th Annual Meeting of the Canadian Applied Mathematics Society, CAMS/SCMA '97,* The Fields Institute, Toronto, May 30-June 1, 1997.
49. S. Attal, M. Devetsikiotis, I. Lambadaris, and C. Huang, "Traffic Generation for Broadband Network Testing Using the GN Nettest InterWATCH 95000 Test Set", presented at the *IEEE Symposium on Planning and Design of Broadband Networks*, Montebello, Quebec, Canada, October 18-20, 1996.
50. M. Devetsikiotis and I. Lambadaris, "Traffic Modeling, Performance Evaluation, and Design Methodologies for Broadband Multimedia Telecommunications Networks", presented at the *Second World Congress of Nonlinear Analysts*, Athens, Greece, July 10-17, 1996.
51. S. Attal, M. Devetsikiotis, I. Lambadaris, and C. Huang, "Traffic Generation for Broadband Network Testing Using the GN Nettest InterWATCH 95000 Test Set", presented at *the Fourth Workshop on Performance Modeling and Evaluation of ATM Networks*, Ilkley, West Yorkshire, U.K., July 8-10, 1996.
52. M. Devetsikiotis, "Importance Sampling for the Simulation of Communication Networks and Switches", presented at the *Workshop on Simulation and Monte Carlo Methods*, Carleton University, September 1995.
53. M. Devetsikiotis, I. Lambadaris, Y. Fang, and B. Melamed, "Exponential Bounds and Importance Sampling Simulation Techniques for the Waiting Time Distribution of *TES/GI/1* Queues", presented at the *Third ORSA Telecommunications Conference*, Boca Raton, March 20-22, 1995.

54. I. Lambadaris, M. Devetsikiotis, and A.R. Kaye, "Traffic Modeling and Performance Analysis Issues in Broadband Multimedia Networks", presented at *the IEEE Symposium on Planning and Design of Broadband Networks*, Montebello, Quebec, Canada, October 21-23, 1994.
55. W.A. Al-Qaq, M. Devetsikiotis, and J.K. Townsend, "Importance Sampling Methodologies for Simulation of Wireless Communications Links", presented at the *1993 Virginia Tech Symposium on Wireless Personal Communications*, Blacksburg, VA, June 9-11, 1993.
56. M. Devetsikiotis, J.K. Townsend, "On Statistical Optimization of Importance Sampling Parameters in the Simulation of Communications Links & Networks," presented at the *4th IEEE International Workshop on Computer-Aided Modeling, Analysis, and Design of Communication Links and Networks*, Montebello, Quebec, Canada, September 29 - October 2, 1992.
57. H.J. Schlebusch, M. Devetsikiotis, and J.K. Townsend, "Optimization of Importance Sampling Simulations by Monitoring and Feedback", presented at *the 3rd IEEE International Workshop on Computer-Aided Modeling, Analysis, and Design of Communications Links and Networks*, Politecnico di Torino, Turin, Italy, September 26-28, 1990.
58. J.K. Townsend and M. Devetsikiotis, "A Statistical Algorithm for the Optimization of Importance Sampling Parameters in the Simulation of Communication Systems", presented at the *ORSA/TIMS Joint National Meeting*, Chicago, May 16-9, 1993.

APPOINTMENT TO EDITORIAL BOARDS

1. Guest Editor, Journal of Internet Engineering, special issue on Service Oriented Infrastructures, 2010.
2. Area Editor, *ACM Transactions on Modeling and Computer Simulation*, January 2007—2010.
3. Guest Editor TOMACS special issue on "Modeling and Simulation of Cross Layer Systems", 2009.
4. Guest Editor, Mobile Networks and Applications, special issue on "New Advances in Broadband Wireless Networking", 2008.
5. Member of the Editorial Board, IEEE Communications Surveys and Tutorials, Sept. 2006 – present.
6. Member of the Editorial Board, Journal of Internet Engineering, Feb. 2006 – present.
7. Associate Editor, *ACM Transactions on Modeling and Computer Simulation*, October 1997—December 2006.
8. Associate Editor, *IEEE Communication Letters*, June 2002—June 2006.
9. Associate Editor, *ACM Transactions on Modeling and Computer Simulation*, October 1997—present
10. Member of Editorial Board, *International Journal of Simulation and Process Modeling*, August 2004 – present.
11. Guest Editor, *Computer Networks*, Special Issue on Long-Range Dependent Traffic Modeling, Vol. 48, No. 3, cover date 21 June 2005.
12. Guest Editor, *Computer Networks*, Special Issue on Self-Similar Traffic Modeling and Engineering, scheduled for publication in October 2002.
13. Guest Editor, *ACM Transactions on Modeling and Computer Simulation*, Special Issue on Modeling and Simulation of Communication Networks, published in April 2000.

PARTICIPATION IN PANELS

NSF CPS Workshops December 2013.
NSF Panelist CISE/NeTS Spring 2009.
NSF Panelist, CISE/ANIR in December 2001, June 2002, January 2003, and CISE/CNS July 2004. NSF Panelist, CISE/CNS NOSS (Sensor Networks), May 2005.

HONORS AND AWARDS

1. Elevated to the grade of Fellow in the IEEE, January 2012.
2. Best paper award, IEEE SmartGridComm 2012, Taiwan.
3. Received the IEEE Communications Society Technical Committee on Communications Systems Integration and Modeling (TC-CSIM) best paper award for: U.K. Chaudhary, I. Papapanagiotou, M. Devetsikioitis, "*Flow Classification Using Clustering and Association Rule Mining*", during IEEE CAMAD 2010, 3-4 December. 2010, Miami FL, USA.
4. IEEE Communication Society Distinguished Lecturer, 2008 – 2009, renewed for 2010 – 2011.

5. Best paper award, IEEE Globecom 2009, Hawaii, December 2009 (one of 16 awards among 1,000+ papers).

6. Best Paper Award, 41st Annual Simulation Symposium, April 2008, Ottawa, Canada.

7. Best Student Paper Award, QRPM Symposium, IEEE Globecom 2007, December 2007, Washington DC.

8. OPNET Modeling Excellence Achievement Award, MIL 3, 1996.

9. Phi Kappa Phi Academic Achievement Award for a Doctoral Candidate, North Carolina State University, March 1993.

10. Scholarship from National Scholarship Foundation of Greece: Academic years 82 - 83, 83 - 84, 84 -- 85, 85 -- 86 and 86 - 87, based on rank in Electrical Engineering class.

11. Honorary Scholarship from the National Technical Chamber of Greece: Academic years 83-- 84, 85 -- 86 and 86-- 87, based on rank in the School of Engineering.

III B. GRANTS AND CONTRACTS

List externally and internally sponsored grants and contracts as well as non-sponsored and independent programs that have supported your scholarship; indicate funding levels and duration.

Total funding summary

   No. __35__ research grants**, No. _1___** equipment grants**, No.____** educational grant**, No.____** cash gifts**,**

   $____USD $1,113,700 plus CAD $713,000___ in a total of **_$1,653,000+CAD 1,123,000___** research grants, **$_____30,000__** equipment grants, and **$_____** gifts

PROPOSALS SUBMITTED IN 2015:

Developing and modeling a prototype smart system of engagement
IBM
$40,000 June 2015 Funded
PI: M. Devetsikiotis
Funded
In this project we plan to develop and study a prototype smart space that senses the presence of users in it, tracks them throughout the room, and adjusts the output of its resources (thermostat, lights, monitors, and other actuators) accordingly. We will do so, in order to capture the dynamic interactions between the users and their surroundings, and then, based on this data, construct a refined stochastic model to quantify the quality of service that the user receives in an intelligent space (assuming relevant utility functions found in the literature).

PROPOSALS SUBMITTED IN 2014:

Collaborative Research: CyberSEES: Type 1: Cyber Enabled Electric Vehicle Infrastructure
NSF
$190,000 MARCH 2014 – NOT FUNDED
PI: DEVETSIKIOTIS
In this proposal, we focus on the large scale, spatio-temporal modeling of smart grid distribution networks. Such systems have inherently both cyber (economics, communications and control) as well as physical (dynamic electrical energy) aspects, and can be very large, in their full scope in space and time. Hence, we propose to model them as spatio-temporal "cyber-physical" systems, where energy flows, communication entities and control agents are all modeled jointly and in a explicitly coupled manner, in order to fully characterize the system and achieve specific performance goals.

Collaborative RIPS Type 2: A Resilient Power Grid Framework Against Cyber and Physical Failures: From Fundamental Understanding to System Integration
NSF
$700,000 APRIL 2014 – NOT FUNDED
PI: W. WANG (co-PI DEVETSIKIOTIS, collaboration with ABB and U. Michigan)
Smarter buildings, campuses, smarter cities and smarter infrastructure in general, are all coming closer to reality based on advances in information technology, large scale data analytics and cloud computing. The "Smart Grid" and the energy sector have recently attracted a lot of attention. They represent a very appealing but also a very challenging area, where the IT and energy domains converge to interdependent systems. The broad objective of this project is to delineate *design*, *modeling* and layered *control strategies* for critical infrastructure systems equipped with ESS. To achieve this goal, expertise in power electronics,

communications, control, and analytics is needed. If this problem can be effectively understood and addressed, then the resulting methodology can serve as a canonical paradigm for other critical infrastructures and "RIPS", including microgrid management in military bases and off-base (battlefield) camps, and airports. Thus, this research direction can have broader impact and relevance.

Service Level Agreements in Cloud Deployments
Cisco University Research Program
$118,870
PI: DEVETSIKIOTIS (COLLABORATION WITH I. PAPAPANAGIOTOU, PURDUE)
In this project, we study a holistic view of an SLA on the Cloud that can be offered as a service, i.e. SLA as Service (SLAaaS). We view the Cloud as a combination of dynamic resources that can be controlled to offer the appropriate QoS. The proposed SLAaaS is based on a three-fold approach: (1) properly allocating the Virtual Machines (VMs) to the hosts, (2) properly servicing the storage volume requests on demand (storage elasticity), and (3) dynamically performing network based load balancing services by virtualizing the network connectivity to varying degrees. Our goal is to provide high availability, scaling, and operational convenience to the Cloud consumer.

Using IOC and Watson for load forecasting applications in smart buildings
IBM FACULTY AWARD
$40,000 APRIL 2014 – FUNDED
Our proposed plan is twofold: One, we want to set IOC up so that it interacts with the recently installed network-ready electric meters (Nexus 1262) in buildings across Centennial Campus at NC State. Two, we recently completed our work on an experimental framework that optimizes a building's energy consumption based on a given target budget, and we wish to see how this could be paired with IOC. To this end, we will be looking into setting up new KPIs with regards to projected energy consumption for the upcoming hour; mathematically, a way that strikes a good balance between efficiency and a somewhat acceptable degree of accuracy would be via double exponential smoothing. Our end goal is building a testbed where continuous monitoring of power and automated optimization take place. Finally, we are also keenly interested to explore how we could make use of the Watson technology within the smart building context.

PROPOSALS SIBMITTED IN 2013:

Collaborative Research: CyberSEES: Type 2: Cyber Enabled Electric Vehicle Infrastructure
NSF
$866,559 MARCH 2013 – NOT FUNDED
PI: DEVETSIKIOTIS (WITH LUKIC AND BHATTACHARYA AND MICHIGAN)
In this proposal, we focus on the large scale, spatio-temporal modeling of smart grid distribution networks. Such systems have inherently both cyber (economics, communications and control) as well as physical (dynamic electrical energy) aspects, and can be very large, in their full scope in space and time. Hence, we propose to model them as spatio-temporal "cyber-physical" systems, where energy flows, communication entities and control agents are all modeled jointly and in a explicitly coupled manner, in order to fully characterize the system and achieve specific performance goals.

LTE Deployment for Enabling and Optimizing Smart Grid Functionalities and Services
EUROPEAN COMMISSION – SEVENTH FRAMEOWRK PROGRAMME FP7
APRIL 2013 – NOT FUNDED
PI: M. DEVETSIKIOTIS (FOR THE US SEGMENT – LED BY COLLABORATOR IN GREECE)
The project aims at building an integrated smart grid control platform and the associated wireless communication infrastructure to support it. The project will be built around a smart-grid infrastructure that is currently under development in the context of the Stockholm Royal Seaport activity. In this project we will enhance the existing infrastructure with an LTE wireless network infrastructure so as to coordinate the actions of the involved entities (home users, distributed generation units and Distribution Systems Operators) and reap

the benefits of demand-response (DR) and distribution automation. The project relies on the premise that LTE technology is perhaps the best candidate substrate communication technology to support such a diverse mixture of requirements of smart-grid enabled services.

Joint Computing, Communication and Energy Control: Towards a Smart Appliance   for a Smarter Campus
IBM FACULTY AWARD
$40,000 FEBRUARY 2013 – FUNDED
In this project we continue to work on algorithmic solutions to the combined real-time computing, communications and energy management in smart campus buildings. We will aim at packaging these algorithms into an appliance format and we will integrate with the ongoing "smarter campus" efforts, in collaboration with IBM and the FREEDM center, on NC State's Centennial Campus, also leveraging the Intelligent Operations Center (IOC) software.

ALICE Adaptive Learning Spaces and Interactive Content Environments
IMLS NATIONAL LEADERSHIP GRANTS
$345,000 SPRING 2013 – FUNDED IN 2014
PI: R. MICHAEL YOUNG, CSC
The ALICE project is a multi-disciplinary, faculty-driven research project to create software for maintaining a visually rich, adaptive, and interactive display environment that reflects the social dynamics and intellectual output of the research and learning community within the Hunt Library.

EXTERNAL GRANTS (AT NC STATE, 2001 – 2012)

SEP: A Sustainable Electrified Transportation Pathway Based on Renewable Energy Generation, and Distributed and Bulk Energy Storage Systems
NSF
$2,000,000 JANUARY 2012 – NOT FUNDED
PI: I. HUSAIN
Research is proposed herein on electrified transportation with zero emission vehicles powered by energy obtained from renewable sources. The goal is to determine a sustainable transportation pathway utilizing the immense energy available in the tides, waves, currents and winds. This will contribute to comprehensive offset of fossil-based grid energy and conserving the planet?s life support systems for the present and future generations. By moving generation assets offshore?but close to demand centers?the amount of transmission required to meet growing electricity demand will be reduced. The multidisciplinary team for this project proposes the development of renewable energy conversion, with a focus on wave energy generation, storage, and fast charging as a means to enable electrified transportation.

CPS: Synergy: Collaborative Research: Spatio-Temporal Modeling and Optimization for Smart Grid Networks
NSF
$1,290,000 MARCH 2012 – NOT FUNDED
PI: M. DEVETSIKIOTIS
The overarching objective of this project is to develop spatio-temporal models for power demand, together with a coupling of the physical layer with the communications layer that transmits customer preferences. The system under consideration is large scale and possesses inherently both ?cyber? (economics, communications and control), as well as ?physical? (power generation and distribution) aspects. The end goal is to capture at the appropriate levels of spatial and temporal scales the characteristics of this cyber-physical system and enable through the coupling of the physical with the communications layers to control it and achieve desired performance goals.

Evaluation of a Virtual Game for Weight Management in Obese Children
NIH
TOGETHER WITH UNC-CH MEDICAL SCHOOL
$1,628,000 MARCH 2012 – NOT FUNDED
Our proposed activity revolves around the use of and innovation in new advanced technologies, namely the Kinect platform and the related software drivers, advanced social media platforms, location aware wireless social games, and 3D virtual world environments. Our goals are: (1) to research the design, implementation and use of such a platform and its impact on health outcomes; (2) to contribute to the science of computing and communication systems by establishing measurable, quantitative relationships between specific technical design factors and health (or wellness) effects and outcomes.

Joint Computing, Communication and Energy Control: Towards a Smart Appliance for a Smarter Campus
IBM FACULTY AWARD
$40,000 FEBRUARY 2012 – FUNDED WITH $30,000
In this project we propose to work on algorithmic solutions to the combined real-time computing, communications and energy management in smart campus buildings. We will aim at packaging these algorithms into an appliance format and we will integrate with the ongoing "smarter campus" efforts, in collaboration with IBM and the FREEDM center, on NC State's Centennial Campus, also leveraging the Intelligent Operations Center (IOC) software.

CPS: Synergy: Collaborative Research: Spatio-Temporal Modeling and Optimization for Smart Grid Networks
NSF CPS
$1,290,241
PI: M. Devetsikiotis
Co-PI: Chakrabortty, Aranya; George Michailidis, U. Michigan
Not funded
The overarching objective of this project is to develop spatio-temporal models for power demand, together with a coupling of the physical layer with the communications layer that transmits customer preferences. The system under consideration is large scale and possesses inherently both "cyber" (economics, communications and control), as well as "physical" (power generation and distribution) aspects. The end goal is to capture at the appropriate levels of spatial and temporal scales the characteristics of this cyber-physical system and enable through the coupling of the physical with the communications layers to control it and achieve desired performance goals.

Joint Computing, Communication and Energy Control: Towards a Smart Appliance for a Smarter Campus
IBM
$30,000
PI: M. Devetsikiotis
Funded
In this project we propose to work on algorithmic solutions to the combined real-time computing, communications and energy management in smart campus buildings. We will aim at packaging these algorithms into an appliance format and we will integrate with the ongoing "smarter campus" efforts, in collaboration with IBM and the FREEDM center, on NC State's Centennial Campus, also leveraging the Intelligent Operations Center (IOC) software.

Integrated Virtual and Social Platform for Prevention of Obesity
NSF
PI: M. Devetsikiotis

Co-PI: Laurie Williams and R. Michael Young, CSC
$1,600,000
Not funded
Our proposed activity revolves around the use of and innovation in new advanced technologies, namely motion gaming interfaces (e.g., those enabled by the Nintendo Wii or the Microsoft Xbox 360 Kinect) and the related software drivers, advanced social media platforms, location aware wireless social games, and 3D virtual world environments. Our aim is: (1) to design and implement an integrated, open source avatar platform for real time interventions, targeting health outcomes (e.g., change in a patient's Body Mass Index); (2) to contribute to the engineering of the computing and communication infrastructure by measuring systematically the effect of specific technical design factors on health outcomes. We propose to implement a combined software and hardware platform that will span these three complementary technologies. We propose to build and explore a proof of concept based on using this combined platform for the prevention of obesity in children, in collaboration with the Medical School at UNC-Chapel Hill. Our integrated platform will serve as a social connectivity umbrella and as a crucial enabler of real-time intervention activities, as described elsewhere in this proposal.

SRN: Multi-Agent Environment for Science, Technology and Research Opportunities in Sustainable Energy
NSF CISE
PI: David Cartes, Florida State (multiple universities involved)
Not funded
This pre-proposal presents a Sustainability Research Network (SRN) to the National Science Foundation entitled *Multi-Agent Environment for Science, Technology and Research Opportunities in Sustainable Energy* **(MAESTRO)** and focuses comprehensively on computational approaches for the efficient and profitable design and realization of sustainable energy systems, and the building of extensive research capacity in this area.

SEP: A Sustainable Electrified Transportation Pathway Based on Renewable Energy Generation, and Distributed and Bulk Energy Storage Systems
NSF ENG
PI: Iqbal Hussain (Michael Devetsikiotis was co-PI)
$2,000,000
Not funded
The multidisciplinary team for this project proposes the development of renewable energy conversion, with a focus on wave energy generation, storage, and fast charging as a means to enable electrified transportation. The research aims to i) identify the optimal wave energy generation and storage techniques, ii) develop pieces for fast charging infrastructure for both stationary and roadway vehicles, iii) develop communication control networks and algorithms for the pathway, and iv) establish the requirements for environmental and economic sustainability to ensure that the energy needs of electrified transportation are met from renewable energy sources. To improve the dispatchability of the intermittent renewable sources, the team will investigate the technical and economic feasibility of ocean-based compressed energy storage

Evaluation of a Virtual Game for Weight Management in Obese Children
NIH
PI: Michael Devetsikiotis (subcontract to lead project at UNC-CH Medical School)
Co-PI: Laurie Williams and R. Michael Young (CSC)
06/01/2012 – 05/31/2017

$1,628,662
Not funded
Our proposed activity revolves around the use of and innovation in new advanced technologies, namely the Kinect platform and the related software drivers, advanced social media platforms, location aware wireless social games, and 3D virtual world environments. Our goals are: (1) to research the design, implementation and use of such a platform and its impact on health outcomes; (2) to contribute to the science of computing and communication systems by establishing measurable, quantitative relationships between specific technical design factors and health (or wellness) effects and outcomes.

CPS: Medium: Collaborative Research: A Spatio-Temporal Modeling Framework for Cyber-Physical Implementation of Smart Grid Networks
NSF CISE
PI: M. Devetsikiotis (with A. Chakrabortty and S. Bhattacharya; collaborative with the U. of Michigan)
$1,270,885
Not awarded
09/01/2011 – 08/30/2015
We propose a hierarchical, multi-level modeling framework involving a cyber-physical view of smart grid distribution. At the macro level, we propose coupling topology identification with physical modeling, combined with temporal analysis. At the micro level, we study the cyber-physical control of hybrid vehicle charging stations, viewed as a coupled system, together with the vehicles involved as well as the computing, communication and control network entailed in the "smart" operation of this grid. Also, at the micro level, we propose to describe coupled cyber-physical mechanisms involving market incentives jointly formulated with communications strategies, whereby physical (energy) flows are coupled with cyber (communications network) controls.

Modeling the Impact of Emerging Traffic Patterns on the Design of Aggregation Architectures
PI: Mihail Devetsikiotis
Agency: Time Warner Cable
Amount: $20,000
Current
Duration: 01/01/2011 – 12/30/2011
Brief Description: The goal is to build service-rich, cost effective and robust environments that would be extremely scalable, but also versatile enough, to accept the transformations resulting from the introduction of *emerging traffic and usage patterns*. The main challenges include non-stop delivery, service flexibility, policy management and reduced risk. For this reason, we try to identify the appropriate *architectural approach* and *sizing model* for the aggregation network, based on the next generation traffic patterns.

Modeling the impact of fixed-mobile converged broadband aggregation architectures on service provider capital expenditures
PI: Mihail Devetsikiotis
Cisco University Research Program
$100,000
Not awarded
09/01/2011 – 08/30/2013

We are proposing a three-pronged approach, covering namely, (1) the effect of the characteristics of the 4G mobile traffic, on the design of the Mobile Aggregation Architectures, (2) the optimum placement of the caches and application networks as part of the aggregation architecture, (3) the architectural effects on the Quality of Experience of the mobile client.

NeTS: Small: Collaborative Research: A Modeling Framework for Networked Socio-Technical Systems
NSF CISE
PI: M. Devetsikiotis (collaborative with The U. of Michigan)
$259,432
Not awarded
09/01/2011 – 08/30/2014
We propose to develop the necessary modeling framework that directly incorporates service requirements induced by the techno-social interaction of users mediated by networked systems, virtual collaboration environments and "smart grids". We introduce an integrated framework that incorporates techno-social inter- action measures into resource allocation problems leading to a joint optimization formulation that enlarges the scope of such problems into a new dimension stemming from the technical and social interactions.

IDEA Grant: Networked 3D Virtual Collaborative Environments: Network Systems Education Co-Laboratory
NC State Delta
Mihail Devetsikiotis, Mitzi Montoya
$8,000
08/16/2009 – 05/15/2010

Collaborative Research: VOSS: Linking Collaborative Virtual Presence and Performance: Scale Development and Validation
Mitzi Montoya (PI), Mihail Devetsikiotis
NSF OCI – Virtual Organizations
$127,000
09/15/2009 – 08/30/2010

Virtual Collaboration Environments: Socio-Technocal Resource Allocation for Scalable Performance of the Collaborative Web
Mihail Devetsikiotis, Mitzi Montoya
CACC (supported through two IBM Faculty Awards)
$30,000
07/01/2009 – 06/30/2010

Network Visualization and Optimization through Accurate Traffic Characterization
Mihail Devetsikiotis, Harry Perros
CACC – Core
$40,000
07/01/09 – 06/30/2010

Modeling Broadband Aggregation Architectures for Emerging and Future Traffic Patterns
Mihail Devetsikiotis
Cisco University Research Program
$80,000
09/01/2008 – 05/30/2010

Networked 3D Virtual Computing for Collaborative Environments in Science and Education: Towards VCL 3.0
Mihail Devetsikiotis, Mitzi Montoya
CACC – Core
$40,000
07/01/2008 – 06/30/09

Achieving Communication Scalability Collaborative Development Tools
Mihail Devetsikiotis
IBM Rational Faculty Award
$20,000
08/1/2008 – 07/31/2009

Research Experiences for Undergraduates in the ECE Department (REU)
Mehmet Ozturk, Mihail Devetsikiotis
NSF
$315,000
09/01/2007 – 08/30/10

Supporting Pair Programming and Virtualization of the Jazz Development Environment
Laurie Williams, Mihail Devetsikiotis
IBM Jazz Faculty Award
$25,000
02/1/2008 – 01/31/2008

Virtual Computing Lab: Monitoring for Predictive Scheduling and Scalable Provisioning
Mihail Devetsikiotis, Ioannis Viniotis
CACC – Core
$40,000
07/01/2007 – 06/30/08

IBM On Demand Testbed: Monitoring for Performance
Mihail Devetsikiotis
IBM
$30,000
09/2006 – 08/2007

Design and Performance of Network Services
Mihail Devetsikiotis, Ioannis Viniotis
IBM

$50,000
09/2006 – 08/2007

Performance and Testing of SIP Over Wireless Mesh Networks
Mihail Devetsikiotis, Mihail L. Sichitiu
Nortel Networks
$40,000
01/01/07 - 12/31/07

Performance Study of Pooled External Storage
Mihail Devetsikiotis, Ioannis Viniotis
Tekelec
$30,000
01/15/07 – 06/30/07

On Demand Testbed: Monitoring For Capacity Planning and Performance Optimization
Mihail Devetsikiotis, Ioannis Viniotis
CACC - Core
$40,000
07/01/06 - 06/30/07

Software Capacity Planning and On Demand Testbed
M. Devetsikiotis
IBM
$30,000
09/2005 – 08/2006

Engineering Rules for IMS Signaling
Y. Viniotis and M. Devetsikiotis
Tekelec (CACC enhancement)
$100,000
09/2004 – 08/2005

The Impact of Cross-Layer Control on Service Availability in Public Access Wireless Networks
M. Devetsikiotis and Wenye Wang
CACC – Core
$40,000
07/2004 – 06/2005

Authentication and Service Management in Heterogeneous Mobile Environments
M. Devetsikiotis and Wenye Wang
CACC – Core
$50,000
07/2003 – 06/2004

Adaptive Resource Management in MPLS Networks

M. Devetsikiotis
CACC – Core
$50,000
07/2002 – 06/2003

Performance of Active Queue Management Schemes in IP Networks

J. K. Townsend, M. Devetsikiotis
CACC – Core
$75,000
07/2002 – 06/2003

Traffic Shaping and Self-Sizing for Next-Generation Terabit Router Networks
M. Devetsikiotis
Alcatel
$200,000
10/2001 – 12/2003

Performance Evaluation of E-Commerce Applications over IPv6 Networks

M. Devetsikiotis, Harry Perros and George Rouskas
IBM University Partnerships Program
$40,000
07/2001 – 06/2002

Adaptive Resource Management in MPLS Networks

M. Devetsikiotis
CACC – Core
$63,000
07/2001 – 06/2002

Performance of Active Queue Management Schemes in IP Networks

M. Devetsikiotis and J. K. Townsend
CACC – Core
$100,000
07/2001 – 06/2002

EXTERNAL GRANTS (AT CARLETON UNIVERSITY, 1994 – 2001, CANADIAN FUNDS)

Self-sizing of High-Speed Networks
M. Devetsikiotis
Nortel Networks
$60,000
10/1/1998 - 9/30/2001

Efficient Methodologies for Modeling and Design of High-Speed Networks
M. Devetsikiotis
Natural Sciences and Engineering Research Council (Canada)
$140,000

4/1/2000 - 3/30/2004

Complex Adaptive Networks for Computing and Communication (CANCCOM)
M. Devetsikiotis, I. Lambadaris, E. Kranakis
Mathematics for Information Technology and Complex Systems (MITACS), under the Federal Networks of Centers of Excellence (Canada)
$360,000
4/1/1999 - 6/30/2001

Modeling and Simulation for the iPT Control Access Protocol (IEEE 802.17)
M. Devetsikiotis and C. Huang
Nortel Networks
$105,000
12/1/2000 - 11/30/2001

Designing Complex Communication Networks: Modeling, Analysis and Algorithmic Methods
M. Devetsikiotis
Communications and Information Technology Ontario (CITO)
$100,000
08/1998 – 07/2000

Efficient Statistical Methodologies for Performance Analysis

M. Devetsikiotis
Natural Sciences and Engineering Research Council (NSERC)
$98,000
1996 – 03/2000

Catastrophe Theory

M. Devetsikiotis and I. Lambadaris
Nortel Networks
$50,000
09/1997 – 08/1999

Interconnected Networks for Multimedia Traffic

M. Devetsikiotis and I. Lambadaris
Telecommunications Research Institute of Ontario (TRIO)
$157,000
04/1997 – 03/1998

Traffic Modeling of Self-Similar Video
M. Devetsikiotis
Agency: Carleton University
$2,500
04/1996 – 03/1997

Synthetic Traffic Generators and Fast Simulation of a Switching Architecture
M. Devetsikiotis
Newbridge Networks
$28,000
04/1996 – 03/1997

Traffic Models for ATM Networks

M. Devetsikiotis, I. Lambadaris
SPAR Aerospace
$25,000
09/1996 – 08/1997

EXTERNAL EQUIPMENT OR SUPERCOMPUTING ACCESS GRANTS

On Demand Testbed: Monitoring for Performance
M. Vouk, M. Devetsikiotis, Y. Viniotis, V. Freeh
IBM
$125,000
01/2006 – 12/2006

INTERNAL GRANTS AT NC STATE

New faculty startup funds
M. Devetsikiotis
ECE Department
$50,000
01/2001 – 09/2003

C. ORGANIZATION PARTICIPATION

Participation in centers, consortia, institutes, interdisciplinary/multidisciplinary activities and other organized scholarly efforts between departments within and across colleges or institutions

1. As Director of Graduate Programs, Dr. Devetsikiotis has been the Director of graduate programs in the ECE department since January of 2011. In this capacity he has been responsible for the every-day operations as well as the strategy for our programs, development and recruiting. With over 500 Masters and 250 PhD students, four Masters and two PhD degrees, we are the largest program at NC State and one of the few largest in the country.

2. He has been participating in the departmental leadership, working closely with the Head and the Associate Head on departmental strategy, interacting with the ECE Advisory Board, presenting to industry, and representing the department in numerous ways, inside and outside the university. In recent years, he has also been a member of the NC State Faculty Senate and the Chair of the College of Engineering graduate studies committee.

3. Among his contributions, a seminal moment was his role in conceiving, proposing and administering the ECE Premium tuition, which has been a game-changer for our department, allowing a significant income source of close to $2M annually, which ECE uses for graduate fellowships, financial aid, faculty salaries, teaching assistantships, office salaries and overall graduate program development. He has also played an important role in expanding ECE graduate programs, increasing the staff in our office, upgrading our physical space, initiating recruiting campaigns, and modernizing ECE governance processes.

4. Dr. Devetsikiotis was a principal investigator in TRIO (Telecommunications Research Institute of Ontario, Canada) and its successor, CITO (Communications and Information Technology Ontario, Canada) between 1996 and 2000. TRIO/CITO is a government, industry, university sponsored research center of excellence involving faculty from Computer Science and Electrical & Computer Engineering from across the Canadian province of Ontario.

5. Dr. Devetsikiotis was a founding member of MITACS (Mathematics for Information Technology and Complex Systems), a Federal Network of Centers of Excellence (Canada), in 1999. This multi-disciplinary research effort involved mathematicians, computer scientists, biologists, statisticians, economists and electrical engineers from across Canada. Research sponsored by federal funding agencies, industry and university, focuses on three types of complex systems, namely, bio-mathematical systems, financial math and information technology/computer network. During the Fall of 1998, Dr. Devetsikiotis was a co-founder and later Director of the Center for Advanced Studies in Computing and Communication (CASCC) at Carleton University. This University inter-disciplinary "organized research unit" (ORU) included faculty from Mathematics/Statistics, Computer Science, Electrical and Computer Engineering, with common research interests in the areas of the convergence of computing and communication and the modeling and analysis of complex information systems.

6. In the Fall of 2003 and the Spring of 2004 Dr. Devetsikiotis participated in the meetings, planning and research activities of the Statistical and Applied Mathematical Sciences Institute (SAMSI) based at the National Institute of Statistical Sciences (NISS). This group collaborates with professors from UNC-CH and Duke in combining advanced statistical methods to the analysis and prediction of high speed networks and their traffic. The group submitted a pre-proposal towards an NSF IGERT award based on the inter-disciplinary collaboration between statisticians, mathematicians, and computer scientists/engineers.

7. Since 2001 Dr. Devetsikiotis has been a principal investigator in CACC, the Center for Advanced Computing and Communication. This is an NSF, industry, government, university sponsored research center, which involves faculty in the Computer Science and ECE Departments at NC State, and Electrical Engineering at Duke University.

8. Dr. Devetsikiotis maintains active collaboration with Professor Nelson Fonseca in the State University of Campinas, Brazil, and with Professor Fabrizio Granelli at the University of Trento. Dr. Devetsikiotis continues a cross-disciplinary collaboration with Professor George Michailidis of the Department of Statistics, University of Michigan, Ann Arbor.

IV. EXTENSION AND ENGAGEMENT WITH CONSTITUENCIES OUTSIDE THE UNIVERSITY

A. ACCOMPLISHMENTS

List accomplishments as applicable, e.g., bulletins, brochures, reports, pamphlets, non-refereed publications, computer software, educational videotapes, slide sets, popular press articles, and other pertinent evidence.

ENGAGEMENT AT CARLETON UNIVERSITY

1. Participated in Engineering Open House each year, and presented overview of department to prospective students and parents.
2. Represented Carleton University and the SCE Department in the Toronto University Fair in 1998 and 1999. Made presentations on behalf of the department and the faculty of engineering.

ENGAGEMENT AT NC STATE

1. Participated in numerous external engagement efforts such as visits by Microsoft, Xerox, Cisco, IBM, High Performance Computing Innovation Center.
2. Serving in leadership role as Director of graduate programs, participating in the semiannual meetings of the ECE Advisory Board composed mainly from industrial members, but including academics as well.
3. Served in leadership roles of ECE open house, recruiting, and external relations (spend a day in Engineering, Engineering Day at the Legislature).
4. Served as group leader and coordinator of the ECE Networking faculty group.
5. Continues to lead the initiative on Service Sciences, Management and Engineering, in education and research.
6. Continued to coordinate the Master's of Science in Computer Networking program (together with Prof. H. Perros of Computer Science).

7. Initially participated in and more recently, led the efforts to organize Open House at NC State, made presentations about the department and provided information to prospective students and parents.
8. Represented CACC and presented overviews to BellSouth, IBM, Nortel and Alcatel.
9. Participating in efforts to attract new members to CACC such as Spirent and OPNET, and retain old ones like Nortel.
10. Participating in meetings and development efforts for joint research opportunities between the cities of Raleigh and Ottawa, the capital city of Canada.

INTERNATIONAL OUTREACH

Visiting the University of Trento again in the summer of 2016 to teach a short course at their Doctoral school in electrical and computer engineering.

Working with the department of Industrial Engineering at the University of Vigo in Spain, to develop a summer course for 2016. We are also developing a collaboration if Doctoral student supervision, which we hope will evolve into a dual PhD degree.

As a member of the IEEE Communications Society Education Board, I am leading a working group on international outreach to student chapters and high schools, to promote telecommunications engineering and offer educational value to young or future IEEE ComSoc members. Initiated distinguished speaker program in parallel with ComSoc flagship conferences (ICC and Globecom), and series of visits to local high schools. First instance was during ICC 2010, in Cape Town, South Africa, with a distinguished speaker event at the University of Cape Town and visits to two local high schools. The second instance was during IEEE Globecom and CAMAD 2010, in Miami, with a webinar attended by student branches. And the next instance took place during IEEE CAMAD 2011, Kyoto, Japan, June 10-11, 2011, with IEEE student branches from Valparaíso, Chile; Cape Town and Pretoria, South Africa; and Serres, Greece.

As an IEEE Communications Society Distinguished Lecturer, between 2008 and 2011, I gave many lectures at several locations in the US and around the world, including Europe and South America.

While in Trento, Italy, during my sabbatical in the Fall of 2010, I negotiated a long term collaboration with the University of Trento and their English-speaking international doctoral program in information science and engineering. This effort has culminated in the signing of an official memorandum of understanding (MOU) between the two universities and is planned to lead to further specific activities including a joint course across the Atlantic, and the development of local service-oriented projects for summer students.

CONSULTING

1. Visiting scholar at the IBM Websphere Technology Institute, May 16, 2007 – present.
2. Visiting scholar at the IBM Websphere Technology Institute, July 16 – August 15, 2005 (full time) and August 16 – December 20, 2005 (one day per week).
3. Sub-contractor for Carleton University (Ottawa, Canada) in research project with Alcatel, April 2003 – May 2005.

SHORT COURSES

1. Visiting researcher and short course on design of next generation networks, University of Trento, Dept. of Information Science and Engineering, Italy, September 2010.
2. Visiting researcher and short course on design of networks and services, University of Trento, Dept. of Information Technology, Italy, June 2008.
3. Visiting researcher and short course on High Speed Networks, State University of Campinas, Brazil, October 2006.
4. Advanced Simulation Techniques for Communication Networks, June 2005, Dept. of Information and Communication Technology, ICT Doctorate School, University of Trento, Italy.

5. An Introduction to Modern IP and ATM Networks, Spring 2000, for Newbridge Networks (later Alcatel) engineers from the Guangdong Province, China.
6. Broadband Networks, Fall 1998, Spring 1999 and Fall 1999, for engineers in the Chinese Ministry of Telecommunications, sponsored by the Canadian International Development Agency (CIDA) and Newbridge Networks Corp.
7. High- Speed Networks, 1997 and 1998, for Nortel engineers.

B. PROGRAM IMPACTS
Describe results/impact of accomplishment.

1. Dr. Devetsikiotis' engagement efforts have contributed to the recruiting of a greater number of highly qualified students as well as to an improved public perception of NC State. Dr. Devetsikiotis has had a significant impact on ECE outreach and recruitment, through initiatives related to Open House, presentations to high school students, entering freshmen, and international visits, projects and collaborations.

2. Furthermore, through Dr. Devetsikiotis' outreach industrial relationships have been strengthened and diversified, leading to more opportunities for funding but also larger number of our students being hired. These strengthened relationships with industry and the community have resulted in the delivery of specialized short courses for practicing telecommunication engineers.

3. Dr. Devetsikiotis' efforts with IBM have resulted in summer positions for students as well as the establishment of a new laboratory for IBM Software Performance located at NC State. This laboratory is the focal point for two separate research projects related to web services performance and testing tools.

V. TECHNOLOGICAL AND MANAGERIAL INNOVATION

A. KNOWLEDGE/TECHNOLOGY TRANSFER

List knowledge and technology transfer accomplishments, e.g., copyrights awarded, invention disclosures, patents filed, patents awarded, new cultivars developed and released, major software packages, design patents, system designs, organizational processes developed, technologies commercialized, etc.

1. Between 1998 and 2000, Dr. Devetsikiotis was involved in a close collaboration with Nortel Networks. This collaborating group studied and developed algorithms for the on-line measurement of network traffic, that could be implemented in real routers. This line of work continued in the project with Alcatel/Plano between 2001 and 2003, and currently with Alcatel/Ottawa (until 2005, with plans to extend the collaboration in the future). Recent work with Alcatel has led to adaptation techniques that are under consideration for implementation, and the submission of a patent.

2. Dr. Devetsikiotis and his group have been very active in the area of statistical characterization and realistic modeling of network traffic, including LAN, *variable-bit-rate-compressed video*, and teleconferencing traffic. His have utilized a wide variety of models, ranging from standard Markovian models (e.g., MMPP) to Transform-Expand-Sample (TES) and to models based on *self-similar* processes that capture the *long-range dependence* of certain sources. His research team has also develop algorithmic methods for automatic modeling of empirical traffic traces. This work has attracted significant interest in industry and academia, as witnessed by the transfer of knowledge in this area to industry, as well as the early collaboration with Bellcore (W. Willinger, A. Erramilli, J. Wang) and NEC (B. Melamed, now at Rutgers University).

3. Dr. Devetsikiotis and his group have implemented traffic models in software (C++, MODSIM, and OPNET) , this is being used in simulations by industry. Their traffic models have also been incorporated into the GN Nettest InterWatch 95000 ATM Analyzer. This ATM analyzer was one of the first fully ATM-compatible analyzers at speeds up to OC-48 and is being used already by IBM, Nortel and other telecommunications companies. The addition of synthetic traffic generation to the capabilities of this test set is advertised as one of its major selling features (see for example related issues of the IEEE Communications Magazine). Response from the users in industry has been very positive.

4. In 1996, Dr. Devetsikiotis was the principal investigator for a contract with SPAR Aerospace of Montreal, Quebec, under a subcontract to the European Space Agency, to prepare advanced synthetic traffic generator software (in OPNET compatible C++ modules), including traffic generators for long-range dependent sources, to be used in simulation studies of satellite broadband networks (co-investigators Professors A. Roger Kaye and Ioannis Lambadaris).

5. In 1996-97 Dr. Devetsikiotis was the principal investigator for a contract with Newbridge Networks Corporation of Kanata, Ontario, in order to: (a) provide Newbridge with a library of synthetic traffic generation modules in C++ to be used in their performance evaluation of ATM network equipment; (b) devise fast estimation techniques based on importance sampling for the simulation of low cell loss probabilities in Newbridge-manufactured ATM switches (co-investigator Professor Ioannis Lambadaris).

6. In March 1995, Dr. Devetsikiotis was co-investigator in a research contract with CANARIE, Inc., in order to incorporate bursty traffic generation capability into ATM test equipment made by GN Nettest of Markham, Ontario (Phase I of a longer-term project to add sophisticated traffic generation and statistical capabilities to GN Nettest's ATM testing equipment). (PI A. Roger Kaye, co-investigator Ioannis Lambadaris).

7. In March 1996, Dr. Devetsikiotis and his fellow researchers concluded work under a second phase contract with GN Nettest for a continuation and enhancement of the above project. Under this contract we implemented our traffic generation software on the actual GN Nettest InterWatch 95000 test set and incorporated the code with a Graphical User Interface. (PI A. Roger Kaye, co-investigator Ioannis Lambadaris).

B. DESCRIBE PROGRAM IMPACTS

Dr. Devetsikiotis has always emphasized a combination of mathematical rigor with engineering applications and usefulness. By his efforts, in collaboration with a large number of great colleagues and students, have resulted in several

engineering research outcomes that have been transferred to industry in the form of simulation methods and tools, in the form of algorithms and in the form of traffic generation equipment. This commitment to engineering solutions increases tremendously the impact and visibility of our university work and also increases the opportunities for recruiting of students, and exposure to real-life problems, allowing us to remain relevant in the engineering world.

VI. SERVICE TO THE UNIVERSITY AND PROFESSIONAL SOCIETIES

University service (department, college, and university committees and governance organizations); state, regional, national and international professional activities and committee work, including professional associations.

DEPARTMENT SERVICE

1. **Director of Graduate programs, ECE department, 01/2011 – present.**
2. Member, NC State Interdisciplinary Research Advisory Council, 2012.
3. ECE Faculty hiring committee, 01/2011 – 05/2011.
4. Chair, ECE RPT committee, 2009- 2010.
5. Co-PI ECE Research Experiences for Undergraduates, Fall 2007 – present.
6. ECE Coordinator, Spend-a-day in Engineering tours.
7. Chair, ECE Department Open House committee, Jan. 2003 – 2010.
8. ECE Coordinator for Engineering Day at the Legislature, Spring 2009.
9. Vice-Chair, Reappointment, Promotion and Tenure (RPT) committee, 2007-
10. Program coordinator and advisor, Master's program in Computer Networking, 2006-2010.
11. Area leader and coordinator of the ECE Networking faculty group, 2006-2010.
12. Steering committee, Service Sciences, Management and Engineering concentration of MSCN, 2006-
13. ECE Department Undergraduate Research Committee, 2007 –
14. ECE Department outreach committee, September 2005 –
15. NC State University, ECE Department new faculty hiring committee (networking), Nov. 2002 – April 2003.
16. NC State University, ECE Department graduate admissions screening, March-April 2002.
17. NC State University, ECE Department new faculty hiring committee (networking), Nov. 2001 – April 2002.
18. NC State University, ECE Department teaching peer review committee, Oct. 2001 – September 2005.
19. NC State University, ECE Department open house committee, Sept. 2001 – present.
20. NC State University, ECE Department new faculty hiring committee (networking), Feb. 2001 – May 2001.

UNIVERSITY SERVICE

SERVICE AT NC STATE

1. **Member, Faculty Senate, 2012 – present (re-elected for second two year term, April 2014)**
2. **Chair, College of Engineering Graduate Studies Committee, 2014 –**
3. **Member, University Standing Committee on Extension and Engagement, 2012 – present.**
4. Graduate admissions committee, Operations Research program, 2006-2010.
5. Member of the Graduate Faculty, Computer Science Department, 2002 – present.
6. NC State University, College of Engineering Computer Committee: participated twice in the Spring of 2001.

SERVICE AT CARLETON UNIVERSITY

1. Carleton University Network Planning and Design Committee, Oct. 1999 – Oct. 2000.
2. Coordinator, Carleton U. Communications Engineering Program, July 1999 – Sept. 2000.
3. Carleton University, Associate Chair for Undergraduate Studies for the SCE department, July 1998 – June 1999.
4. Carleton University Engineering Academic Planning Committee, July 1998 – June 1999.
5. Carleton University Engineering Committee on Admissions and Studies, July 1998 – June 1999.
6. Carleton University, SCE Departmental liaison for the Training and Learning Resources Center, June 1997 – Dec. 2000.

CROSS-APPOINTMENTS

1. Associate Faculty Member, Computer Science Department, NC State, May 2001 -.
2. Faculty Member, Operations Research Program, NC State, April 2001 - .

3. Adjunct Research Professor, Systems & Computer Engineering, Carleton University, Jan. 2001 - present.

INTERNATIONAL PROFESSIONAL ACTIVITIES

PROFESSIONAL SOCIETIES

1. Vice-chair, previously Secretary, IEEE ComSoc Technical Committee on Transmission, Access and Optical Systems, 2010 – 2013.
2. **Chair, Vice-chair, previously Vice-Chair and Member-at-Large, IEEE Communications Society Globecom-ICC Technical Committee (GITC), 2010 – 2013. Started as new GITC Chair in January 2014.**
3. **Member-at-Large, IEEE Communications Society Education Board, 2008 – 2011, 2014 –**
4. IEEE Communications Society Distinguished Lecturer, 2008 – 2011.
5. IEEE new senior member applications panel, March 2007.
6. Senior Member IEEE (Student Member 1985, Member 1994, Senior Member 2003); member of the IEEE Communication Society
7. Member of ASEE (2003 – present)
8. Member INFORMS (Telecommunications Section)
9. Chairman, IEEE Communication Society Technical Committee on Communication Systems Integration and Modeling, April 2002 – June 2006.
10. Vice-Chairman, IEEE Communication Society Technical Committee on Communication Systems Integration and Modeling, December 1999—April 2002.
11. Member, IEEE Communication Society Technical Committees on Personal Communications, Optical Networking, and Computer Communications, January 2001 – present.
12. Secretary, IEEE Communication Society Technical Committee on Communication Systems Integration and Modeling, November 1996-December 1999.
13. Member Honor Society Sigma Xi
14. Member Honor Society Phi Kappa Phi
15. Member Honor Society Eta Kappa Nu

EDITORIAL BOARDS

1. Guest Editor, Journal of Internet Services and Applications, Special issue on Service Modeling and Design for the Future Internet, 2011.
2. Guest Editor, ACM Transaction on Modeling and Computer Simulation, special issue on Modeling and Simulation of Cross Layer Systems, 2008-2010.
3. Guest Editor, Mobile Networks and Applications, special issue on "New advances in broadband wireless networking", 2008.
4. Area Editor, *ACM Transactions on Modeling and Computer Simulation*, January 2007—present
5. Member of the Editorial Board, IEEE Communications Surveys and Tutorials, Sept. 2006 – present.
6. Member of the Editorial Board, Journal of Internet Engineering, Feb. 2006 – present.
7. Member of Editorial Board, *Intl. Journal of Simulation and Process Modeling*, August 2004 – present
8. Associate Editor, IEEE Communications Letters, 2002 – 2006
9. Associate Editor, ACM Transactions on Modeling and Computer Simulation, 1997 – 2006
10. Guest Editor, *Computer Networks*, Special Issue "Long-Range Dependent Traffic Modeling", Oct. 2004
11. Guest Editor, *Computer Networks*, Issue on "Self-Similar Traffic Modeling and Engineering", Oct. 2002
12. Guest Editor, *ACM TOMACS*, Spec. Issue on Modeling and Simulation of Comm. Networks, April 2000**.**

ORGANIZER, INTERNATIONAL CONFERENCES

1. **Co-chair, Networking Track, EUCNC 2015**
2. **TPC member, IEEE Smart Grid Comm 2014.**
3. **TPC member, IEEE LATINCOM 2014.**
4. Co-Chair, Technical Program Committee, IEEE LATINCOM 2013.
5. TPC member, IEEE Smart Grid Comm 2013.
6. Member, Technical Program Committee, IEEE LATINCOM 2012.

7. Co-organizer and co-chair, Smart Grid Communications Workshop, IEEE Globecom 2012.
8. TPC member, IEEE Smart Grid Comm 2012.
9. TPC chair, Green Communications Track, IEEE Globecom 2012.
10. Member, Technical Program Committee, LATINCOM 2011.
11. General Chair, IEEE CAMAD, Kyoto, Japan, June 2011.
12. Co-Chair, IEEE ICC 2012, Symposium on QoS, Reliability, Performance and Modeling, Ottawa, Canada.
13. Technical Program Committee, IEEE SmartGridComm, Maryland, October 2010.

14. Co-Chair, Quality, Reliability and Performance Symposium, IEEE Globecom 2010, Miami, December 2010.

15. Member of the Technical Program Committee, LATINCOMM 2010.

16. Co-chair, 3d IEEE Workshop on Enabling the Future Service Oriented Internet, EFSOI 2009.

17. Member of the Technical Program Committee, LATINCOMM 2009.

18. Member of the Technical Program Committee, IEEE Infocom 2009.

19. Workshops Chair and Member of the Executive Committee, IEEE Globecom 2008, New Orleans, Nov. 2008.

20. Member of the Technical Program Committee, Global Internet Workshop, in conjunction with IEEE Infocom 2008, April 2008.

21. Member of the Technical Program Committee for the Communications Quality and Reliability Workshop, CQR 2008.

22. Member of the Technical Program Committee, 41st Annual Simulation Symposium, ANSS 2008, Ottawa, April 2008.

23. Member of the Technical Program Committee, IEEE ICC 2008, Beijing, May 2008.

24. Chair of the organizing committee, Workshop on "Enabling the Future Service Oriented Internet" (IEEE Globecom 2007, Washington, DC, Nov. 2007).

25. Member of the Technical Program Committee, IEEE CAMAD 2007.

26. Member of the Technical Program Committee, Broadnets 2007.

27. Member of the Technical Program Committee, Global Internet Symposium 2007.

28. Member of the Technical Program Committee, 40th Annual Simulation Symposium.

29. Member of the Technical Program Committee, International Teletraffic Congress, 2007.

30. Member of the Technical Program Committee, ICN 2007.

31. Co-Chair, "Quality, Reliability and Performance for Emerging Network Services" Symposium, IEEE Global Telecommunications Conference, Globecom 2006, San Francisco.

32. Member of the Technical Program Committee, ACM MASCOTS 2006.

33. Member of the Technical Program Committee, 39th Annual Simulation Symposium.

34. Member of the Technical Program Committee, TridentComm 2006.

35. Member of the Technical Program Committee, IEEE CAMAD 2006.

36. Member of the Technical Program Committee, IEEE ICC 2006.

37. Co-Chair, "QoS, Reliability and Performance Modeling" Symposium, IEEE International Conference on Communications, ICC 2005, Seoul, Korea.

38. Co-Chair, "High-Speed Networking" Symposium, IEEE International Conference on Communications, ICC 2004, Paris, France.

39. Co-organizer and co-chair of the Second World Class Events Workshop, co-located with IFIP Networking 2005, Waterloo, Canada.

40. Member of the Technical Program Committee, ACM MASCOTS 2005.

41. Member of the Technical Program Committee, IEEE ICNS 2004 and ICNS 2005.

42. Member of the Technical Program Committee, IEEE INFOCOM 2003.

43. Member of the TPC, Next Generation Internet Symposium, IEEE ICC 2003.

44. Technical Program Committee member for ICETE 2004, ACM/IEEE MASCOTS 2002, IEEE Internet Performance Symposium 2002, IEEE ICC 2003, IEEE Globecom 2002, IEEE ICC 2002, IEEE Globecom 2000, IEEE ICC 1996.

45. Co-Chair, "Next Generation Internet Symposium", IEEE International Conference on Communications, ICC 2002.

46. Member of the Technical Program Committee, International Teletraffic Congress, ITC-17, 2001.

47. Member of the TPC, Internet Performance Symposium, IEEE Globecom 2002.

48. Organizer/Chair of the 8th IEEE Workshop on Computer-Aided Modeling, Analysis and Design of Communications Links and Networks, CAMAD 2000.

49. Program committee member for ENM-97, the Enterprise Networking mini-conference held in conjunction with IEEE ICC '97, and CSMA 2000, the Conference on Simulation Modeling and Applications, Orlando, October 2000.

50. Session organizer and/or chair for IEEE ICC '94, '95, '97, '98, and '99; IEEE Globecom '96, '97, '99, 2000, 2001, 2002, 2003 and 2004.

REVIEWER

1. Reviewer for several Journals, including: IEEE Communications Surveys, IEEE Trans. On Parallel and Distributed Systems, Simulation Modeling, Practice and Theory, Performance Evaluation, IEEE Transactions on Signal Processing, IEEE Transactions on Automatic Control, ACM Mobile Communications Review, IEEE Transactions on Communications, International Journal of Networking Systems, Telecommunication Systems, IEEE Communications Letters, IEEE Journal on Selected Areas in Communications, IEEE/ACM Transactions on Networking, ACM Transactions on Modeling and Computer Simulation, IEE Electronics Letters, Computer Networks, IEEE Communications Magazine.

2. Reviewer for a large number of conferences, including: IEEE GLOBECOM, IEEE ICC, IEEE INFOCOM, IEEE VTC, ACM SIGMETRICS, ACM SIGCOMM, World Telecommunications Congress, IFIP Networking, ISCC, ICNS, Performance/SIGMETRICS, and the International Teletraffic Congress.