

# IOANNIS (YANNIS) CH. PASCHALIDIS

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## Current Positions

BOSTON UNIVERSITY Boston, MA

- **Associate Professor** with a joint appointment in Manufacturing Engineering and in Electrical and Computer Engineering (1/00–present).
- **Co-Director**, Center for Information and Systems Engineering (CISE) (9/04–present). CISE is an interdisciplinary research center with about 30 affiliated faculty in Engineering, Sciences, and Business responsible for a number of sponsored research projects that amount to \$3–\$4 million on an annual basis.
- **Academic Director**, The Sensor Network Consortium (SNC, 11/04–present). SNC is an industry consortium I founded with 14 member companies with diverse business activities and strong interest in wireless sensor networks. Current members include Amperion South East, Arch Rock Corp., Ember Corp., ExxonMobil, Handshake Solutions, The Hartford, Honeywell Intl., IBM Corp., Millennial Net, Inc., The Mitre Corp., Schlumberger, Siemens, Sun Microsystems, and Textron Systems (see <http://www.bu.edu/snc> for further details).
- **Affiliations:** Affiliated with the Boston University BioMolecular Engineering Research Center (BMERC) and the Center for Information and Systems Engineering (CISE).

## Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA  
Ph.D. in Electrical Engineering and Computer Science, May 1996.  
Ph.D. Thesis: “Large Deviations in High Speed Communication Networks”.  
Advisors: Prof. Dimitris Bertsimas and Prof. John Tsitsiklis.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA  
S.M. in Electrical Engineering and Computer Science, February 1993.  
S.M. Thesis: “Scheduling of Multiclass Queueing Networks: Bounds on Achievable Performance”.

NATIONAL TECHNICAL UNIVERSITY OF ATHENS Athens, Greece  
Diploma in Electrical and Computer Engineering, June 1991.

## Main Research Interests

Systems and control, networking, applied probability, optimization, operations research, computational biology, and bioinformatics. Specifics topics of interest include:

- Design, performance analysis and control of communication and sensor networks.
- Protein docking, metabolic and gene networks.
- Queueing theory and stochastic systems; Large deviations theory.

- Design, stability, performance analysis and control of manufacturing systems, supply chains, and distribution systems.
- Optimization and decision theory.
- Pricing and revenue management.

**Teaching Experience**

- *Optimization Theory and Methods.*  
Linear Programming; Linear large scale optimization methods; Introduction to nonlinear programming; Interior-point methods; Integer Programming.
- *Advanced Optimization Theory and Methods.*  
Nonlinear programming; Cone and semi-definite programming; Large scale optimization methods; Stochastic approximation.
- *Communication Networks Control.*  
A systems and control perspective into communication and sensor networks research. Topics include: Network Services and Layered Architectures, Traffic Management and Congestion Control, Traffic Modeling, Admission Control, Flow Control and TCP/IP, Routing, Sensor Networks, Wireless Networks, Network Economics and Pricing.
- *Probability and Statistics.*  
Probability and Statistics; Quality Control.
- *Discrete Stochastic Processes.*  
Poisson processes; Renewal Theory; Markov chains; Markov processes; Martingales.

**Work Experience**

	VARIOUS BUSINESSES	
1/95–Present	Consultant to a variety of companies in my areas of interest.	
	COLUMBIA UNIVERSITY	New York, NY
9/03–12/03	Visiting Scholar, Columbia Business School.	
	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Cambridge, MA
1/03–6/03	Visiting Scholar, Laboratory for Information and Decision Systems.	
	COGENTRIC, INC.	Portsmouth, NH
9/00–12/01	Principal Scientist.	
	BOSTON UNIVERSITY	Boston, MA
9/96–12/99	Assistant Professor of Manufacturing Engineering.	
	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Cambridge, MA
6/96–8/96	Post-Doctoral Associate, Laboratory for Information and Decision Systems.	
9/91–6/96	Research assistant; research on the design and control of manufacturing systems and high speed communication networks.	
1/94–6/94	Teaching Assistant.	
1/95	AT&T BELL LABORATORIES	Murray Hill, NJ
	Consultant in the Mathematics of Networks and Systems Department. Worked in a quick simulation project.	
	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	Athens, Greece

**Honors and Awards**

- Invited Participant, *Workshop on Mathematics of Molecular and Cellular Biology, Protein Folding*, Institute for Mathematics and Its Applications (IMA), January 14-18, 2008. Workshop organized as part of the IMA thematic year on Molecular and Cellular Biology; participation is by invitation only.
- First prize in the *3rd Critical Assessment PRedicted Interaction (CAPRI) Evaluation Meeting*, April 20-21, 2007, Toronto, Canada, for presented poster publication on “Refinement of rigid-body protein docking predictions using semi-definite underestimation” (with Y. Shen, P. Vakili, and S. Vajda). CAPRI is the community-wide experiment in which all computational protein docking groups compete.
- IEEE Senior Member (2006).
- Invited Participant, *2002 U.S. Frontiers of Engineering Symposium*, National Academy of Engineering (NAE). An annual symposium organized by the NAE that brings together 100 of the U.S.-based outstanding young engineers –ages 30-45– from industry, academia, and government.
- *National Science Foundation (NSF) CAREER Award* (Directorate for Computer & Information Science & Engineering, Networking Research), 2000.
- Plenary Speaker, *1998 and 2002 LIDS Student Conference*, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology (MIT).
- Second Prize, *1997 George E. Nicholson* paper competition. Awarded by INFORMS, the Institute for Operations Research and the Management Sciences, to the best Operations Research & Management Science papers on work done as a doctoral student.
- Elected Full Member of *Sigma Xi*, a honor society, (1996, MIT Chapter).
- Graduated ranking first (out of 206), class of 1991, Department of Electrical and Computer Engineering (ECE), National Technical University of Athens (NTUA), Greece.
- Four times recipient (1986-1990) of a scholarship from the *National Scholarship Foundation of Greece* (awarded to the top five students in the ECE Department at NTUA).
- Three times recipient (1988-1990) of an award from the *Technical Chamber of Greece* (based on performance as an undergraduate student at NTUA).
- Included in Who’s Who in America, Who’s Who in Science and Engineering, Who’s Who in American Education, and Who’s Who of Emerging Leaders.

**Professional Activities**

- Associate Editor:
  - *IEEE Transactions on Automatic Control* (1/06–present);
  - *Operations Research Letters* (2/02–present);
  - *Automatica* (8/02–12/07).
- Professional Leadership positions:
  - Liaison position between the IEEE Control Systems Society and the Institute for Operations Research and the Management Sciences (INFORMS) (11/2007–present);
  - Chair, *Technical Committee on Networks and Communication Systems*, IEEE Control Systems Society, (1/06–present);
  - Member, International Federation of Automatic Control (IFAC) Technical Committee on Stochastic Systems;
  - Chair, Working Group on Finance Systems under the Network and Communications Technical Committee of the *IEEE Control Systems Society* (1997–2004).
- Conference Organizing Committees:

- Organizer, Mini-workshop on “Security and Wireless Sensor Networks”, *National Colloquium for Information Systems Security Education*, hosted at Boston University, June 2007;
- Registration Chair, *46th IEEE Conference on Decision and Control*, December 2007, New Orleans, Louisiana;
- Co-Organizer, Workshop on “Challenges and Opportunities in Distributed Sensor Networks”, *The Center for Nonlinear Studies, Los Alamos National Laboratory*, Los Alamos, New Mexico, USA, March 2006;
- Co-Organizer, *Emerging Technologies Symposium* on “Sensor Networks: What’s real and what lies ahead”, Boston University, November 2005;
- Organizer, *Emerging Technologies Symposium* on “Sensor Networks: Where Technologies Meet and Applications are Endless”, Boston University, May 2004;
- Chair, Local Arrangements Committee, *43rd IEEE Conference on Decision and Control*, December 2004, Paradise Island, Bahamas;
- Member of the organizing committee, *1998 Information Theory Symposium*, Boston, MA.
- Program Committees:
  - Member of the Technical program committee, *Workshop on End-to-End, Sense-and-Respond Systems, Applications, and Services (in conjunction with MobiSys ’05)*.
  - Member of the Technical program committee, *2002 American Control Conference*.
  - Member of the Technical program committee, *IEEE INFOCOM 2002* conference.
  - Member and Group Leader (i.e., area editor) of the Technical program committee, *IEEE INFOCOM 2001* conference.
  - Member of the program committee, *Internet II: QoS and Future Directions Conference, SPIE 2000 Voice, Video, and Data Communications Symposium*.
  - Member of the program committee, *37TH IEEE Conference on Decision and Control (1998)*.
  - Member of the program committee, *9TH INFORMS Applied Probability Conference (1997)*.
- Served in many peer review panels for the *National Science Foundation (NSF)*. Reviewed proposals for various NSF programs. Served in Review Visiting Committees to evaluate DOE funded projects at Universities and at the National Labs. Referee for many technical journals. Session Organizer and Chair in many sessions at the IEEE Conference on Decision and Control, the INFORMS National Meeting, and the INFORMS Applied Probability conference.
- Senior member of the *IEEE (Institute of Electrical and Electronics Engineers)*. Member of *INFORMS (Institute for Operations Research and the Management Sciences)*, Sigma Xi, and of the *Technical Chamber of Greece*.

### Sponsored Projects

**Summary:** PI or Co-PI for \$ 15,241,689 in sponsored projects since 1997.

- [F1] “EFRI-ARESCI: Event-Driven Sensing for Enterprise Reconfigurability and Optimization”, Co-PI (with C. G. Cassandras and A. Bestavros at Boston University and R. Gao and W. Gong at UMass Amherst), *NSF Emerging Frontiers of Research and Innovation Initiative*, 11/1/07–10/31/11, \$ 1,999,573.
- [F2] “Final-Stage Optimization Methods for Protein Docking Exploiting Energy Funnels”, **Principal Investigator (PI)**, (Co-PI P. Vakili), *National Institutes of Health (NIH), National Institute of General Medical Sciences (NIGMS)*, 2/07–1/09, \$ 437,852.
- [F3] “Distributed Wireless Sensor Networks for Long-term Deployments”, **Principal Investigator (PI)**, (Co-PI C.G. Cassandras), *Department of Energy (DOE)*, 9/06 – 8/09, \$ 752,117.

- [F4] The Sensor Network Consortium, **Academic Director**, An industry consortium of 14 companies supporting the consortium activities and research on Sensor Networks, 11/04–present, \$ 188,000 (to date).
- [F5] “NeTS-NOSS: SensorNet Architectures for Indoor Location Detection: From Resolution to Robustness”, Co-PI (with D. Starobinski and A. Trachtenberg), *NSF, Research in Networking Technology and Systems (NeTS)*, 9/1/04–8/31/07, \$ 600,000.
- [F6] “ITR: COLLABORATIVE RESEARCH: Diagnosis and Assessment of Faults, Misbehavior and Threats in Distributed Systems and Networks”, **Principal Investigator (PI)**, (with C. Hadjicostis, C. Beck, R. Sreenivas at the University of Illinois at Urbana-Champaign, J. Tsitsiklis at MIT, S. Tatikonda at Yale, and K. Thulasiraman at the Univ. of Oklahoma), *NSF, Information Technology Research for National Priorities (ITR)*, 9/15/04–8/31/08, \$ 1,100,000.
- [F7] “SENSORS: A Control and Optimization Science Base for Sensor Networks in Adverse and Stochastic Environments”, Co-PI (with C. G. Cassandras, J. Baillieul and D. Castanon at Boston University and R. Gao, W. Gong, and A. Deshmukh at UMass Amherst), *NSF Sensors and Sensor Networks Initiative*, 9/1/03–8/31/08, \$ 2,487,459.
- [F8] “Planning, Coordination, and Control of Supply Chains”, **Principal Investigator (PI)**, (Co-PI: M. C. Caramanis), *NSF, Directorate for Engineering (ENG), Division of Design, Manufacture and Industrial Innovation (DMII), Manufacturing Enterprise Systems (MES) Program*, 8/1/03–7/31/07, \$ 350,000, REU Supplement \$ 12,000, 6/1/04.
- [F9] Equipment and Software donation by *Hewlett-Packard Labs* to support pricing and resource allocation work in communication networks, **Principal Investigator (PI)**, 2002, valued \$ 360,000.
- [F10] “Communicating Networked Control Systems”, Co-PI (with J. Baillieul and T. Bifano at Boston University, R.W. Brockett at Harvard University, P.R. Kumar at the University of Illinois at Urbana-Champaign, and P.S. Krishnaprasad, J.S. Baras, D. Hristu-Varsakelis, P. Narayan, and G.C. Walsh at the University of Maryland, College Park), *DoD Multidisciplinary University Research Program (MURI) FY01*, 5/1/01–4/30/06, \$ 5,000,000.
- [F11] “CAREER: Pricing and Resource Allocation in Multiservice Broadband Communication Networks”, **Principal Investigator (PI)**, *NSF CAREER Award*, Advanced Networking Infrastructure and Research (ANIR) Division, Directorate for Computer and Information Sciences and Engineering (CISE), 7/1/00–6/31/05, \$ 450,000.
- [F12] “Quality of Service Provisioning, Scheduling, and Pricing in Communication Networks”, **Principal Investigator (PI)**, (Co-PIs: C.G. Cassandras, J.Q. Hu), *Nokia Research Center (Boston)*, 9/1/99–12/31/01, \$ 55,000.
- [F13] “Synergistic and Decentralized Decision Making in Complex Stochastic Systems”, Co-PI (with M.C. Caramanis, C.G. Cassandras and F.J. Alexander at Boston University, D.P. Bertsekas and J.N. Tsitsiklis at MIT, and Y.M. Ioannides at Tufts), *NSF Knowledge and Distributed Intelligence (KDI) Initiative*, 10/01/98–04/30/03, \$ 1,162,000.
- [F14] “Efficient Resource Allocation and Yield Management in Internet Services”, **Principal Investigator (PI)**, *MIT Internet Telephony Consortium*, 1/1/97–7/31/98, \$ 47,542.
- [F15] “Admission Control in High Speed Multimedia Networks”, **Principal Investigator (PI)**, *NSF Directorate for Computer and Information Sciences and Engineering (CISE), Networking Research Program*, 9/1/97–8/31/01, \$ 200,146.
- [F16] “United Technologies Sponsored Seminar Series in Manufacturing and Systems Engineering”, **Principal Investigator (PI)**, *United Technologies*, 9/1/97–8/31/02, \$ 40,000.

## Citations

(Last updated January 2008.)

More than 719 according to Google scholar. My  $h$ -index, defined as

$$h\text{-index} = \max\{h \mid h \text{ papers each having } \geq h \text{ citations}\},$$

is equal to 14. (See [http://en.wikipedia.org/wiki/Hirsch\\_number](http://en.wikipedia.org/wiki/Hirsch_number) for more information on the  $h$ -index).

## Book Chapters

- [B1] “Statistical Location Detection” (with S. Ray, W. Lai, and D. Guo), in *Localization Algorithms and Strategies for Wireless Sensor Networks: Monitoring and Surveillance Techniques for Target Tracking*, Guoqiang Mao and Baris Fidan, eds., IGI Global, forthcoming.
- [B2] “Supply Chain Production Planning Modeling Facility Lead Time and Quality of Service” (with O. Anli and M. Caramanis), in *Analysis, Control and Optimization of Complex Dynamic Systems*, El Kebir Boukas and Roland P. Malhamé, eds., Kluwer Academic Publishers (2005), pages 106-136.

## Journal Articles

(Some of the papers below include Google Scholar citation counts for all versions of the work including related conference papers.)

- [J1] “Spatio-Temporal Network Anomaly Detection by Assessing Deviations of Empirical Measures” (with S. Smaragdakis), 2006, *IEEE/ACM Transactions on Networking*, to appear.
- [J2] “Optimally Balancing Energy Consumption versus Latency in Sensor Network Routing” (with W. Lai) *ACM Transactions on Sensor Networks*, Vol. 4 (2008), No. 4, in print.
- [J3] “SDU: A Semi-Definite Programming-Based Underestimation Method for Stochastic Global Optimization in Protein Docking” (with Y. Shen, P. Vakili and S. Vajda), *IEEE Transactions on Automatic Control*, Vol. 52 (2007), No. 4, pages 664–676.
- [J4] “Asymptotically Optimal Transmission Policies for Large-Scale Low-Power Wireless Sensor Networks” (with W. Lai and D. Starobinski), *IEEE/ACM Transactions on Networking*, Vol. 15 (2007), No. 1, pages 105–118.
- [J5] “Enforcing Service-Level Constraints in Supply Chains with Assembly Operations” (with C. Del Vecchio), *IEEE Transactions on Automatic Control*, Vol. 51 (2006), No. 12, pages 2000–2005.
- [J6] “Statistical Location Detection with Sensor Networks” (with S. Ray and W. Lai), *IEEE Transactions on Information Theory, Joint special issue with IEEE/ACM Transactions on Networking on Networking and Information Theory*, Vol. 52 (2006), No. 6, pages 2670–2683,  
**Cited by 14.**
- [J7] “Importance Sampling for the Estimation of Buffer Overflow Probabilities via Trace-Driven Simulations” (with S. Vassilaras), *IEEE/ACM Transactions on Networking*, Vol. 12 (2004), No. 5, pages 907–919.
- [J8] “Target-Pursuing Scheduling and Routing Policies for Multiclass Queueing Networks” (with C. Su and M.C. Caramanis), *IEEE Transactions on Automatic Control*, Vol. 49 (2004), No. 10, pages 1709–1722.
- [J9] “Inventory Control for Supply Chains with Service Level Constraints: A Synergy between Large Deviations and Perturbation Analysis” (with Y. Liu, C.G. Cassandras, and C. Panayiotou), *Annals of Operations Research (Special Volume on Stochastic Models of Production-Inventory Systems)*, Vol. 126 (2004), pages 231–258,  
**Cited by 14.**

- [J10] “Large Deviations-based Asymptotics for Inventory Control in Supply Chains” (with Y. Liu), *Operations Research*, Vol. 51 (2003), No. 3, pages 437–460,  
**Cited by 19.**
- [J11] “Pricing in Multiservice Loss Networks: Static Pricing, Asymptotic Optimality, and Demand Substitution Effects” (with Y. Liu), *IEEE/ACM Transactions on Networking*, Vol. 10 (2002), No. 3, pages 425–438,  
**Cited by 50.**
- [J12] “On the Estimation of Buffer Overflow Probabilities from Measurements” (with S. Vassilaras), *IEEE Transactions on Information Theory*, Vol. 47 (2001), No. 1, pages 178–191,  
**Cited by 11.**
- [J13] “Probabilistic Service Level Guarantees in Make-to-Stock Manufacturing Systems” (with D. Bertsimas), *Operations Research*, Vol. 49 (2001), No. 1, pages 119–133,  
**Cited by 35.**
- [J14] “Congestion-Dependent Pricing of Network Services” (with J.N. Tsitsiklis), *IEEE/ACM Transactions on Networking*, Vol. 8 (2000), No. 2, pages 171–184,  
**Cited by 179.**
- [J15] “Class-Specific Quality of Service Guarantees in Multimedia Communication Networks”, *Automatica* (Special Issue on Control Methods for Communication Networks), V. Anantharam and J. Walrand Eds., Vol. 35 (1999), No. 12, pages 1951–1969,  
**Cited by 19.**
- [J16] “Large Deviations Analysis of the Generalized Processor Sharing Policy” (with D. Bertsimas and J.N. Tsitsiklis), *Queueing Systems*, Vol 32 (1999), pages 319–349,  
**Cited by 39.**
- [J17] “Asymptotic Buffer Overflow Probabilities in Multiclass Multiplexers: An Optimal Control Approach” (with D. Bertsimas and J.N. Tsitsiklis), *IEEE Transactions on Automatic Control*, Vol 43 (1998), No. 3, pages 315–335,  
**Cited by 35.**
- [J18] “On the Large Deviations Behaviour of Acyclic Networks of G/G/1 Queues” (with D. Bertsimas and J.N. Tsitsiklis), *The Annals of Applied Probability*, Vol. 8 (1998), No. 4, pages 1027–1069,  
**Cited by 46.**
- [J19] “Branching Bandits and Klimov’s Problem: Achievable Region and Side Constraints” (with D. Bertsimas and J.N. Tsitsiklis), *IEEE Transactions on Automatic Control*, Vol. 40 (1995), No. 12, pages 2063–2075,  
**Cited by 28.**
- [J20] “Optimization of Multiclass Queueing Networks: Polyhedral and Nonlinear Characterizations of Achievable Performance” (with D. Bertsimas and J.N. Tsitsiklis), *The Annals of Applied Probability*, Vol. 4 (1994), No. 1, pages 43–75,  
**Cited by 112.**
- [J21] “Congestion Avoidance for ATM Networks” (with E.D. Sykas, K.M. Vlakos, and G.K. Mourtzinou), *Computer Communications*, Vol. 17 (1994), No. 9, pages 657–662.
- [J22] “Distribution-dependent robust linear optimization with applications to inventory control” (with Seong-Cheol Kang), 2007, submitted journal publication.
- [J23] “Tractable Supply Chain Production Planning Modeling Non-Linear Lead Time and Quality of Service Constraints” (with O. Anli and M. C. Caramanis), 2007, submitted journal publication.
- [J24] “Protein docking by the underestimation of free energy funnels in the space of encounter complexes” (with Y. Shen, P. Vakili, and S. Vajda), 2007, submitted journal publication.

**Submitted  
Journal  
Articles**

- [J25] “Robust and Distributed Localization in Sensor Networks: Theory and Experimental Results” (with Dong Guo), 2007, submitted journal publication.
- [J26] “Distributed Actor-Critic Methods and Applications in Sensor Network Coverage Problems” (with P. Pennesi), 2008, submitted journal publication.
- [J27] “On Optimal Transmission Scheduling in Wireless Sensor Networks over Multiple Frequency Channels” (with W. Lai, and X. Song), 2008, submitted journal publication.

### Conference Proceedings (refereed)

(**Notes:** Networking conferences like the IEEE Infocom, the ACM Mobihoc, and the ACM Sigmetrics are very competitive with an about 15% acceptance rate. The IEEE Conference on Decision and Control is the flagship conference of the Control Systems Community and is also rigorously reviewed and competitive.)

- [P1] “A Robust Approach to Markov Decision Problems with Uncertain Transition Probabilities” (with Seong-Cheol Kang), *Proceedings of the 17th IFAC World Congress*, July 2008, Seoul, Korea, in print.
- [P2] “Distribution-Dependent Robust Linear Optimization with Asymmetric Uncertainty and Application to Optimal Control” (with Seong-Cheol Kang and Keyong Li), *Proceedings of the 17th IFAC World Congress*, July 2008, Seoul, Korea, in print.
- [P3] “A decomposition method for transmission scheduling in multi-channel wireless sensor networks” (with W. Lai and X. Song), *Proceedings of the IEEE INFOCOM Conference*, April 2008, Phoenix, Arizona.
- [P4] “A Control and Optimization Science Base for Sensor Networks in Adverse and Stochastic Environments: Selected Advances of 2007” (with C. G. Cassandras, J. Baillieul, D. Castanon, R. Gao, W. Gong, A. Deshmukh), *Proceedings of 2008 NSF Civil, Mechanical and Manufacturing Innovation (CMMI) Grantees Conference*, January 2008, Knoxville, Tennessee.
- [P5] “Robust and Distributed Localization in Sensor Networks” (with D. Guo), **Invited**, *Proceedings of the 46th IEEE Conference on Decision and Control*, pages 933–938, December 2007, New Orleans, Louisiana.
- [P6] “Optimizing Noisy Funnel-like Functions on the Euclidean Group with Applications to Protein Docking” (with Y. Shen, P. Vakili, S. Vajda), **Invited**, *Proceedings of the 46th IEEE Conference on Decision and Control*, pages 4545–4550, December 2007, New Orleans, Louisiana.
- [P7] “Solving Sensor Network Coverage Problems by Distributed Asynchronous Actor-Critic Methods” (with P. Pennesi), *Proceedings of the 46th IEEE Conference on Decision and Control*, pages 5300–5305, December 2007, New Orleans, Louisiana.
- [P8] “Optimal Transmission Scheduling Policies for Wireless Sensor Networks with Frequency Diversity” (with W. Lai and X. Song), *Proceedings of the 46th IEEE Conference on Decision and Control*, pages 512–517, December 2007, New Orleans, Louisiana.
- [P9] “Some Results on the Analysis of Stochastic Processes with Uncertain Transition Probabilities and Robust Optimal Control” (with Keyong Li and Seong-Cheol Kang), *Proceedings of 45th Annual Allerton Conference on Communication, Control, and Computing*, September 26–28, 2007, Monticello, Illinois.
- [P10] “Sensor Network Minimal Energy Routing with Latency Guarantees” (with W. Lai), *Proceedings of the ACM MobiHoc 2007 Conference*, pages 199–208, September 9–14, 2007, Montreal, Canada.

- [P11] “A Large Deviations Approach to Statistical Traffic Anomaly Detection” (with G. Smaragdakis), *Proceedings of the 45th IEEE Conference on Decision and Control*, pages 1900–1905, December 2006, San Diego, California.
- [P12] “Routing through noise and sleeping nodes in sensor networks: latency vs. energy trade-offs” (with W. Lai), **Invited**, *Proceedings of the 45th IEEE Conference on Decision and Control*, pages 2716–2721, December 2006, San Diego, California.
- [P13] “Protein-Protein Docking with Reduced Potentials by Exploiting Multi-Dimensional Energy Funnels” (with Y. Shen, P. Vakili, S. Vajda), *Proceedings of the 28th IEEE International Conference of the Engineering in Medicine and Biology Society*, August 30–Sept. 3, 2006, New York City, New York.
- [P14] “On the benefits of distributional information in robust linear optimization” (with Seong-Cheol Kang), **Invited**, *Proceedings of the 5th IFAC Symposium on Robust Control Design*, July 2006, Toulouse, France.
- [P15] “Distributed multi-agent actor-critic algorithms with applications to stochastic path finding problems” (with Paris Pennesi and Yimin Yu), *Proceedings of the 5th IFAC Symposium on Robust Control Design*, July 2006, Toulouse, France.
- [P16] “Combining MPC and LD Analysis in Supply Chain Inventory Control Problem” (with P. Pennesi and G. Conte), *Proceedings of the 14th Mediterranean Conference on Control and Automation*, June 2006, Ancona, Italy.
- [P17] “Robust Linear Programming with Tight Probabilistic Guarantees and Applications in Inventory Control” (with Seong-Cheol Kang), *Proceedings of 2006 NSF Design, Service, and Manufacturing Grantees and Research Conference*, January 2006, St. Louis, Missouri.
- [P18] “A Control and Optimization Science Base for Sensor Networks in Adverse and Stochastic Environments: New Advances” (with C. G. Cassandras, J. Baillieul, D. Castanon, R. Gao, W. Gong, A. Deshmukh), *Proceedings of 2006 NSF Design, Service, and Manufacturing Grantees and Research Conference*, January 2006, St. Louis, Missouri.
- [P19] “Robust Linear Optimization: On the benefits of distributional information and applications in inventory control” (with Seong-Cheol Kang), *Proceedings of the 44th IEEE Conference on Decision and Control*, pages 4416–4421, December 2005, Seville, Spain.
- [P20] “A Semi-Definite programming-based Underestimation method for global optimization in molecular docking” (with Yang Shen, Sandor Vajda, Pirooz Vakili), *Proceedings of the 44th IEEE Conference on Decision and Control*, pages 3675–3680, December 2005, Seville, Spain.
- [P21] “Optimizing transmissions and routing in sensor networks is polynomially solvable” (with Wei Lai and D. Starobinski), **Invited**, *Proceedings of the Intelligent Systems in Design and Manufacturing Conference, SPIE Symposium*, October 2005, Boston, Massachusetts.
- [P22] “Supply Contracts with Service Level Requirements” (with Carmen Del Vecchio), *Proceedings of the IFAC Congress*, July 2005, Prague, The Czech Republic.
- [P23] “Deployment Optimization of Sensornet-Based Stochastic Location-Detection Systems” (with Saikat Ray and Wei Lai), *Proceedings of the IEEE INFOCOM Conference*, pages 2279–2289, March 2005, Miami, Florida.
- [P24] “Asymptotically Optimal Transmission Policies for Low-Power Wireless Sensor Networks” (with Wei Lai and D. Starobinski), *Proceedings of the IEEE INFOCOM Conference*, pages 2458–2469, March 2005, Miami, Florida.
- [P25] “A Control and Optimization Science Base for Sensor Networks in Adverse and Stochastic Environments” (with C. G. Cassandras, J. Baillieul, D. Castanon, R. Gao,

- W. Gong, A. Deshmukh), *Proceedings of the 2005 NSF DMII Grantees Conference*, January 2005, Scottsdale, Arizona.
- [P26] “Optimizing location detection services in wireless sensor networks” (with S. Ray), **Invited**, *Proceedings of the 43rd IEEE Conference on Decision and Control*, December 2004, pages 1478–1483, Paradise Island, Bahamas.
- [P27] “On maximizing the utility of uplink transmissions in sensor networks under explicit fairness constraints” (with Wei Lai and D. Starobinski), *Proceedings of the 43rd IEEE Conference on Decision and Control*, pages 1010–1015, December 2004, Paradise Island, Bahamas.
- [P28] “Integrated Operational and Financial Simulation of Multi-Tier, Demand Driven Supply Networks Using a Collaborative Demand Planning and Inventory Optimization Approach” (with M. C. Caramanis, K. Egilmez, K. Nitschke), *11th ASIM Dedicated Conference on Simulation in Production and Logistics*, October 2004, Berlin, Germany.
- [P29] “Production Coordination and Control of Supply Chains: Preliminary Results and Proof of Concept” (with M. C. Caramanis, O. M. Anli), *Proceedings of the NSF DMII Grantees Conference*, January 2004, Dallas, Texas.
- [P30] “Supply Chain Production Scheduling with Dynamic Lead Time and Quality of Service Constraints” (with M. C. Caramanis, O. M. Anli), *Proceedings of the 42nd IEEE Conference on Decision and Control*, pages 5478–5485, December 2003, Maui, Hawaii.
- [P31] “Enforcing Service-Level Constraints in Supply Chains with Assembly Operations” (with C. del Vecchio), *Proceedings of the 42nd IEEE Conference on Decision and Control*, pages 5490–5495, December 2003, Maui, Hawaii.
- [P32] “New Scheduling Policies for Multiclass Queueing Networks: Applications to Peer-To-Peer Systems” (with C. Su and M.C. Caramanis), *Proceedings of the 42nd IEEE Conference on Decision and Control*, pages 1604–1609, December 2003, Maui, Hawaii.
- [P33] “Target-Pursuing Policies for Open Multiclass Queueing Networks” (with C. Su and M.C. Caramanis), *Proceedings of the IEEE INFOCOM Conference*, pages 196–206, April 2003, San Francisco, California.
- [P34] “Distributed Resource Allocation in Multiservice Communication Networks Using Pricing” (with Y. Liu), **Invited**, *Proceedings of the 41st IEEE Conference on Decision and Control*, pages 2023–2028, December 2002, Las Vegas, Nevada.
- [P35] “Threshold-Based Control for Make-to-Stock Models: A Synergy between Large Deviations and Perturbation Analysis” (with Y. Liu, C.G. Cassandras, and P. Zhang), *Proceedings of the 40th IEEE Conference on Decision and Control*, pages 4523–4528, December 2001, Orlando, Florida.
- [P36] “Quick simulation of a queue fed by arbitrary traffic traces” (with S. Vassilaras), **Invited**, *Proceedings of the 39th Annual Allerton Conference on Communication, Control, and Computing*, pages 172–181, October 2001, Monticello, Illinois.
- [P37] “Model-Based Estimation of Buffer Overflow Probabilities from Measurements” (with S. Vassilaras), *Proceedings of the ACM SIGMETRICS 2001/Performance 2001 conference*, pages 154–163, June 16–20th, 2001, Cambridge, Massachusetts.
- [P38] “Large Deviations-based Asymptotics for Inventory Control in Supply Chains” (with Y. Liu), **Invited**, *Proceedings of the 39th IEEE Conference on Decision and Control*, pages 528–533, December 2000, Sydney, Australia.
- [P39] “Congestion-Dependent Pricing of On-line Internet Services” (with J.N. Tsitsiklis), **Invited**, *Proceedings of the 38th IEEE Conference on Decision and Control*, pages 4026–4031, December 1999, Phoenix, Arizona.
- [P40] “Controlling Make-to-Stock Manufacturing Systems: A Large Deviations Approach” (with D. Bertsimas), **Invited**, *Proceedings of the 38th IEEE Conference on Decision and Control*, pages 462–467, December 1999, Phoenix, Arizona.

- [P41] “A Framework for the Decentralized Control of Manufacturing Enterprises” (with M. Caramanis and O. Anli), **Invited**, *Proceedings of DARPA-JFACC Symposium on Advances in Enterprise Control*, pages 99–109, November 1999, San Diego, California.
- [P42] “On Estimating Buffer Overflow Probabilities under Markov-modulated Inputs” (with S. Vassilaras), **Invited**, *Proceedings of 37th Annual Allerton Conference on Communication, Control, and Computing*, pages 306–315, September 1999, Monticello, Illinois.
- [P43] “Performance Analysis and Admission Control in Multimedia Communication Networks”, **Invited**, *Proceedings of the 36th IEEE Conference on Decision and Control*, pages 1786–1791, December 1997, San Diego, California.
- [P44] “Buffer Overflow Probabilities in Multiclass ATM Switches” (with D. Bertsimas and J.N. Tsitsiklis), *Proceedings of 34th Annual Allerton Conference*, pages 712–721, October 1996, Monticello, Illinois.
- [P45] “Branching Bandits and Klimov’s Problem: Achievable Region and Side Constraints” (with D. Bertsimas and J.N. Tsitsiklis), *Proceedings of the 33rd IEEE Conference on Decision and Control*, Vol. 1, pages 174–179, December 1994, Lake Buena Vista, Florida.
- [P46] “Scheduling of Multiclass Queueing Networks: Bounds on Achievable Performance” (with D. Bertsimas and J.N. Tsitsiklis), **Invited**, *Proceedings of the Workshop on hierarchical control for real-time scheduling of manufacturing systems*, 1992, Lincoln, New Hampshire,  
**Cited by 14.**
- [P47] “Congestion Avoidance in ATM Networks” (with E.D. Sykas, G.K. Mourtzinou, and K.M. Vlakos), *Proceedings of the IEEE INFOCOM Conference*, pages 905–914, May 4-8, 1992, Florence, Italy.

### Abstracts Presented in Conferences

- [A1] “Integrated understanding of the metabolic and gene regulatory systems of *Shewanella oneidensis* MR-1” (with Qasim Beg, David Byrne, Michael Driscoll, Frank Juhn, Yang Shen, Jeremiah Faith, Timothy Gardner, and Daniel Segre), *108th General Meeting of the American Society of Microbiology*, June 1–5, 2008, Boston, Massachusetts.
- [A2] “Systematic identification of regulatory mapping and optimal metabolic engineering strategies in *Shewanella oneidensis* MR-1” (with D. K. Byrne, Q. K. Beg, M. E. Driscoll, F. S. Juhn, Y. Shen, J. J. Faith, D. Segre., T. S. Gardner), *Genomics: Annual Contractor-Grantee Workshop*, Department of Energy, February 10-13, 2008, Bethesda, Maryland.
- [A3] “Robust sensor network localization via composite hypothesis testing”, **Invited**, *Information Theory and Applications Workshop*, January 27 - February 1, 2008, University of California, San Diego, California.
- [A4] “Distributed wireless sensor networks for long-term deployments” (with C.G. Cassandras), **Invited**, *DOE NNSA University Conference*, November 27 - 28, 2007, Central Florida Research Park, Orlando, Florida.
- [A5] “Docking refinement by the underestimation of free energy funnels” (with Y. Shen, P. Vakili, and S. Vajda), *4th Conference on Modeling of Protein Interactions (MPI 2007)*, Sep. 30 - Oct. 2, 2007, Lawrence, Kansas.
- [A6] “A multistep approach to protein-protein docking” (with D. Kozakov, Y. Shen, R. Brenke, D. Beglov, P. Vakili, S. Vajda), *234th American Chemical Society National Meeting*, August 19-23, 2007, Boston, Massachusetts.

- [A7] “New Approaches to Protein-Protein Docking” (with D. Kozakov, R. Brenke, Y. Shen, S.R. Comeau, P. Vakili, S. Vajda), *3DSIG Structural Bioinformatics and Computational Biophysics Meeting*, in conjunction with the *Conference of the International Society for Computational Biology*, July 19-20, 2007, Vienna, Austria.
- [A8] “Statistical Anomaly Detection in Internet Traffic and Sensor Network Topology”, **Invited Plenary**, *National Colloquium for Information Systems Security Education*, June 5, 2007, Boston, MA.
- [A9] “Refinement of rigid-body protein docking predictions using semi-definite underestimation” (with Y. Shen, P. Vakili, and S. Vajda), *3rd Critical Assessment PRedicted Interaction (CAPRI) Evaluation Meeting*, April 20-21, 2007, Toronto, Canada. (Poster presentation, **awarded 1st prize**).
- [A10] “New approaches to protein-protein docking” (with S. Vajda, D. Kozakov, R. Brenke, S. R. Comeau, Y. Shen, P. Vakili), *232nd American Chemical Society National Meeting*, September 10-14, 2006, San Francisco, California.
- [A11] “Sensor Networks: Localization, Transmission Scheduling, and Energy-Aware Routing with QoS Guarantees”, **Invited**, *Workshop on Challenges and Opportunities in Distributed Sensor Networks*, Center for Nonlinear Studies, Los Alamos National Laboratory, March 9–10, 2006, Los Alamos, New Mexico.
- [A12] “Joint Transmission Scheduling and Routing for Low-Power Wireless Sensor Networks is Polynomially Solvable”, **Invited**, *Computer Communications Workshop*, October 2005, Huntington Beach, California.
- [A13] “A semi-definite programming based underestimation method for global optimization in molecular docking” (with Y. Shen, S. Vajda, and P. Vakili), *3rd Conference on Protein Interactions in Genomics*, June 26-28, 2005, Lawrence, Kansas.
- [A14] “Statistical Location Detection in Sensor Networks”, **Invited**, *Workshop on Rare events in communication networks*, EURANDOM, February 2005, Eindhoven, The Netherlands.
- [A15] “Multiservice Loss Networks: From pricing to distributed resource allocation”, **Invited**, *EURO/INFORMS International Joint Meeting*, July 6–10, 2003, Istanbul, Turkey.
- [A16] “Pricing and Congestion Control in Multiservice Loss Networks” (with Y. Liu), **Invited**, *17th IEEE Annual Computer Communications Workshop*, October 2002, Santa Fe, New Mexico.
- [A17] “Pricing of Real-Time Services in Multiservice Communication Networks” (with Y. Liu), **Invited**, *Workshop on Computer-Aided Modeling, Analysis, and Design of Communication Links and Networks (CAMAD)*, May 2002, New York City, New York.
- [A18] “Revenue Management in Multiservice Communication Networks” (with Y. Liu), **Invited**, *INFORMS Conference*, November 2001, Miami, Florida.
- [A19] “New scheduling policies for multiclass queueing networks” (with M. Caramanis and C. Su), **Invited**, *INFORMS Conference*, November 2001, Miami, Florida.
- [A20] “Target-pursuing policies for multiclass queueing networks” (with M. Caramanis and C. Su), *INFORMS 11th Applied Probability Conference*, July 2001, New York, New York, page 21.
- [A21] “Importance Sampling for the Estimation of Buffer Overflow Probabilities in Large Communication Switches” (with S. Vassilaras), *INFORMS 11th Applied Probability Conference*, July 2001, New York, New York, page 19.
- [A22] “Static Pricing in Multiservice Communication Networks” (with Y. Liu), *INFORMS 11th Applied Probability Conference*, July 2001, New York, New York, page 23.
- [A23] “Inventory Control in Supply Chains: A Large Deviations Approach” (with Y. Liu), **Invited**, *INFORMS Conference*, November 2000, San Antonio, Texas.

- [A24] “Large Deviations-based Asymptotics for Inventory Control in Make-to-Stock Manufacturing Systems and Supply Chains”, *Conference on Stochastic Networks*, University of Wisconsin-Madison, June 2000, Madison, Wisconsin.
- [A25] “On the Estimation of Effective bandwidths from Measurements” (with S. Vassilaras), **Invited**, *INFORMS Conference*, November 1999, Philadelphia, Pennsylvania.
- [A26] “Revenue Management and the Internet” (with J.N. Tsitsiklis), **Invited**, *INFORMS Conference*, November 1998, Seattle, Washington.
- [A27] “Optimal control of make-to-stock systems: A large deviations approach” (with D. Bertsimas), *INFORMS Conference*, April 1998, Montreal, Canada.
- [A28] “Revenue Management in Network Services” (with J.N. Tsitsiklis), **Invited**, *Proceedings of the Fourth INFORMS Telecommunications Conference*, March 1998, Boca Raton, Florida.
- [A29] “Congestion Probabilities and Admission control”, *Proceedings of the 9TH INFORMS Applied Probability Conference*, June 1997, Cambridge, Massachusetts, page 169.
- [A30] “On the Large Deviations Behaviour of Acyclic Single Class Networks and Multiclass Queues” (with D. Bertsimas and J.N. Tsitsiklis), **Invited**, *Royal Statistical Society Workshop on Stochastic Networks*, August 1-11, 1995, Edinburgh, U.K.
- [A31] “Branching Bandits and Klimov’s Problem” (with D. Bertsimas and J.N. Tsitsiklis), **Invited**, *Proceedings of the 8TH INFORMS Applied Probability Conference*, June 1995, Atlanta, Georgia.
- [A32] “On the Large Deviations Behaviour of Acyclic Networks of G/G/1 Queues” (with D. Bertsimas and J.N. Tsitsiklis), *Proceedings of the Third INFORMS Telecommunications Conference*, March 1995, Boca Raton, Florida.
- [A33] “Branching Bandits and Klimov’s Problem: Achievable Region and Side Constraints” (with D. Bertsimas and J.N. Tsitsiklis), *ORSA/TIMS conference*, April 1994, Boston, Massachusetts.
- [A34] “Scheduling of Multiclass Queueing Networks: Bounds on Achievable Performance” (with D. Bertsimas and J.N. Tsitsiklis), *ORSA/TIMS conference*, November 1992, San Francisco, California.

### Technical Reports

- [R1] “Performance Benchmarks for Sensor Networks”, Technical Report, The Sensor Network Consortium, February 2005.
- [R2] “Efficient Resource Allocation and Yield Management in Internet Services” (with P. Kavassalis, and J.N. Tsitsiklis), Technical Report, *Internet Telephony Consortium, MIT*, 1997, Cambridge, MA, available at <http://itel.mit.edu/>.
- [R3] “Large Deviations in High Speed Communication Networks”, Technical report (Ph.D. Thesis), Laboratory for Information and Decision Systems, 1996, MIT, Cambridge, MA,  
**Cited by 27.**
- [R4] “Scheduling of Multiclass Queueing Networks: Bounds on Achievable Performance”, Technical report (M.S. Thesis), Laboratory for Information and Decision Systems, 1993, MIT, Cambridge, MA.

### Selected Invited Courses and Tutorials

- [C1] “Production Models”, **Invited Mini-Course**, Athens University of Economics and Business, Summer Session, *Executive M.S. program*, Andros, Greece, July 2000.
- [C2] “Queueing Network Models”, **Invited Mini-Course**, Athens University of Economics and Business, *Executive M.S. program*, Athens, Greece, May 1999.

- [C3] “QoS and Admission Control: Large deviations-based admission control”, **Invited Tutorial**, *Workshop on Control Methods in Communication Networks* (with V. Anantharam, T. Basar, and R. Srikant), 37th IEEE Conference on Decision and Control, December 1998, Tampa, Florida.

### Selected Invited Lectures in Academia

- [L1] “Localization with Wireless Sensor Networks” **Invited Lecture**, *Department of Mechanical Engineering*, Worcester Polytechnic Institute, March 27, 2008.
- [L2] “Protein docking by optimizing noisy funnel-like functions”, **Invited Lecture**, University of Bridgeport, Bridgeport, Connecticut, November 8, 2007.
- [L3] “Optimization of Wireless Sensor Networks”, **Invited Lecture**, *Athens Information Technology (AIT) Center*, Athens, Greece, March 12, 2007.
- [L4] “Optimization for Protein-Protein Docking”, **Invited Lecture**, *Operations Research Center*, Massachusetts Institute of Technology, November 30, 2006.
- [L5] “Optimization of Wireless Sensor Networks”, **Invited Lecture**, *Department of Electrical and Computer Engineering*, Boston University, Boston, Massachusetts, November 2006.
- [L6] “Optimization of Wireless Sensor Networks”, **Invited Lecture**, *Department of Mathematical Engineering*, Université catholique de Louvain, Louvain-la-Neuve, Belgium, October 2006.
- [L7] “Wireless Sensor Networks: A playground for optimization methodologies”, **Invited Lecture**, *Dipartimento di Ingegneria*, Università degli Studi del Sannio, Benevento, Italy, September 2006.
- [L8] “Optimization Adventures in the Wonderland of Wireless Sensor Networks”, **Invited Lecture**, *Department of Electrical and Computer Engineering*, University of Connecticut, November 2005.
- [L9] “Optimizing Wireless Sensor Networks”, **Invited Lecture**, *Graduate School of Business*, Stanford University, April 2004.
- [L10] “Multi-service Communication Networks: What’s the “right” time-scale for pricing and resource allocation decisions ?”, **Invited Lecture**, *School of Business*, Columbia University, November 2003.
- [L11] “Supply Chain Inventory Control Lessons: Distributional Information Matters !”, **Invited Lecture**, *School of Business*, Columbia University, November 2003.
- [L12] “Resource Allocation in Sensor Networks”, **Invited Lecture**, *Department of Electrical and Computer Engineering*, Northwestern University, October 2003.
- [L13] “Supply Chain Inventory Control with Quality of Service Guarantees”, **Invited Lecture**, *Graduate School of Business*, University of Chicago, October 2003.
- [L14] “Multi-service Communication Networks: Resource Allocation through Pricing”, **Invited Lecture**, *Department of Electrical Engineering*, Yale University, April 2003.
- [L15] “Multi-service Communication Networks: What’s the “right” time-scale for pricing and resource allocation decisions ?”, **Invited Lecture**, *Information Systems Laboratory, Department of Electrical Engineering*, Stanford University, March 2003.
- [L16] “On the Pricing of Differentiated Internet Services: A Revenue Management Perspective”, **Invited Lecture**, *Graduate School of Industrial Administration*, Carnegie Mellon University, March 2002.
- [L17] “Inventory Control for Supply Chains with Service Level Constraints: A Large Deviations Approach”, **Invited Lecture**, *Department of Mechanical, Industrial and Manufacturing Engineering*, Northeastern University, February 2002.

- [L18] “Near-optimal charging mechanisms for multiservice communication networks”, **Invited Lecture**, *Department of Electrical and Computer Engineering*, Purdue University, October 2001.
- [L19] “Quality of Service: A Unifying Theme”, **Invited Lecture**, *Division of Engineering and Applied Sciences*, Harvard University, November 2000.
- [L20] “Estimating Effective Bandwidths”, **Invited Lecture**, *Department of Electrical and Computer Engineering*, University of Massachusetts at Amherst, November 1999.
- [L21] “QoS Provisioning in Multimedia Communication Networks”, **Invited Lecture**, *Department of Industrial Engineering and Management Sciences*, Northwestern University, June 1999.
- [L22] “Probabilistic Service Level Guarantees in Make-to-Stock Manufacturing Systems”, **Invited Lecture**, *Operations Management Seminar*, Massachusetts Institute of Technology, March 1999.
- [L23] “Congestion-Dependent Pricing of Internet Services”, **Invited Lecture**, *Operations Research Seminar*, Massachusetts Institute of Technology, March 1999.
- [L24] “Revenue Management in the Internet”, **Invited Lecture**, *Finance Seminar*, School of Management, Boston University, March 1999.
- [L25] “Admission Control in High Speed Communication Networks”, **Invited Lecture**, *Computer Science Department*, Boston University, December 1998.
- [L26] “Providing Statistical QoS in Multimedia Networks (Effective bandwidths and beyond)”, **Invited Lecture**, *Center for Satellite and Hybrid Communication Networks*, University of Maryland at College Park, April 1998, Maryland.
- [L27] “Large Deviations and their applications in the traffic management of High-Speed Communication Networks”, **Invited Lecture**, *Networking Seminar, Department of Electrical and Computer Engineering*, University of Michigan, October 1996, Ann Arbor, Michigan.

### Selected Invited Lectures in Industry and Government Agencies

- [L28] “Control and Optimization of Wireless Sensor Networks”, **Invited Lecture**, *Los Alamos National Laboratory*, March 2008, Los Alamos, New Mexico.
- [L29] “Minimal Energy Routing with Latency QoS Guarantees”, *The Sensor Network Consortium*, November 2006, Boston, Massachusetts.
- [L30] “Sensor networks and applications in homeland security”, **Invited Talk**, Symposium on “UK Technologies for Security” organized by the United Kingdom government, October 30, 2006, *UK Consulate*, Boston, Massachusetts.
- [L31] “The Center for Information and Systems Engineering and the Sensor Networks Consortium”, **Invited Talk**, *Holst Centre*, IMEC Netherlands, October 2006, Eindhoven, Netherlands.
- [L32] “Systems-level opportunities for much needed efficiency gains in sensor networks”, **Invited Talk**, *ARRM06 Industry & IMEC Review Meeting*, October 2006, Leuven, Belgium.
- [L33] “Localization with Sensor Networks and related challenges”, **Invited Talk**, *United Technologies Research Center*, October 2006, Hartford, Connecticut.
- [L34] “Energy-Aware Sensor Network Routing with QoS Guarantees”, **Invited Talk**, *MITRE Corp.*, June 2006, Bedford, Massachusetts.
- [L35] “The role of optimization in sensor networks: Localization and energy-aware routing”, **Invited Talk**, *Netted Sensors Workshop*, October 2005, MITRE Corp., McLean, Virginia.

- [L36] “Research Challenges in RFIDs and Sensor Networks”, **Invited Panelist**, *IDC RFID Update Conference*, June 2005, Boston, Massachusetts.
- [L37] “Localization for Sensor Networks: Accurate or Robust (or both) ?”, *The Sensor Network Consortium*, May 2005, Boston, Massachusetts.
- [L38] “Performance evaluation of Sensor Networks”, *The Sensor Network Consortium*, May 2005, Boston, Massachusetts.
- [L39] “Statistical Location Detection and Optimal Routing in Sensor Networks”, **Invited Talk**, *General Electric Labs*, January 2005, Niskayuna, New York.
- [L40] “Establishing the Sensor Network Consortium”, *Inaugural Meeting, The Sensor Network Consortium*, November 2004, Boston, Massachusetts.
- [L41] “Sensor Networks Applications in Robot Navigation”, **Invited Talk**, *Aberdeen Proving Ground*, May 2004, Aberdeen, Maryland.
- [L42] “Military Supply Chains: A 10,000-Foot View of Algorithmic and Methodological Challenges”, **Invited Lecture**, *Manufacturing Engineering Emerging Technologies Seminar, Boston University*, November 2002, Boston, Massachusetts.
- [L43] “Inventory Control in Supply Chains”, **Invited Lecture**, *Solectron*, August 2002, North Andover, Massachusetts.
- [L44] “Pricing Differentiated Internet Services”, **Invited Lecture**, *Sun Microsystems Labs*, April 2002, Burlington, Massachusetts.
- [L45] “Optimizing Multiservice Communication Networks”, Genuity-BU meeting, March 2002, Boston, Massachusetts.
- [L46] “Pricing the Internet: Can simplicity induce optimality ?”, **Invited Lecture**, *IBM T.J. Watson Research Center, Mathematical Sciences*, March 2001, Yorktown Heights, New York.
- [L47] “Quality of Service in Communication and Manufacturing Systems”, **Invited Lecture**, *Scientific Computing Group, Los Alamos National Laboratory*, February 2001, Los Alamos, New Mexico.
- [L48] “Quick Simulation for the Estimation of the Cell Loss Probability in Large Switches”, **Invited Talk**, *Nokia Research Center*, February 2001, Boston, Massachusetts.
- [L49] “Leaky Bucket Control”, **Invited Talk**, *Nokia Research Center*, June 2000, Boston, Massachusetts.
- [L50] “Resource Allocation Issues in Multiservice Communication Networks”, **Invited Talk**, *Nokia Research Center*, May 1999, Boston, Massachusetts.
- [L51] “Customer-oriented Supply Chain Management”, *Industrial Advisory Board Meeting*, Dept. of Manufacturing Engineering, Boston University, September 1998, Boston, Massachusetts.
- [L52] “Resource and Revenue Management in Internet Services”, **Invited Talk**, *Workshop of the MIT Internet Telephony Consortium*, June 1998, Helsinki, Finland.
- [L53] “Quality of Service Provisioning in Multimedia Communication Networks”, **Invited Talk**, *Basic Research Institute in the Mathematical Sciences (BRIMS)*, Hewlett-Packard Labs, June 1997, Bristol, U.K.
- [L54] “Efficient Resource Allocation and Revenue Management of Internet Services”, **Invited Talk**, *Workshop of the MIT Internet Telephony Consortium*, June 1997, Bristol, U.K.
- [L55] “Right on Schedule”, *Industrial Advisory Board Meeting*, Dept. of Manufacturing Engineering, Boston University, March 1997, Boston, Massachusetts.
- [L56] “Yield Management and Internet Telephony”, *MIT Internet Telephony Consortium*, MIT, November 1996, Cambridge, Massachusetts.

## Other Selected Presentations

- [L57] “SDU: Protein docking by the underestimation of binding free energy funnels” (with Y. Shen, S. Vajda, P. Vakili), Poster presentation, *4th Conference on Modeling of Protein Interactions (MPI 2007)*, Sep. 30 - Oct. 2, 2007, Lawrence, Kansas.
- [L58] “A Semi-Definite programming-based Underestimation method for global optimization in molecular docking” (with Y. Shen, S. Vajda, P. Vakili), Poster presentation, Boston University Science and Engineering Day, March 2005 (**awarded the CISE first prize**).
- [L59] “Pricing and Resource Allocation in Multiservice Broadband Communication Networks”, **Invited Talk**, NSF PI Workshop, Networking Research Program, November 2000, NSF Division of Advanced Networking Infrastructure and Research, Irvine, California.
- [L60] “Controlling Congestion in Multimedia Networks”, **Invited Talk**, 1997 George E. Nicholson paper competition (**awarded 2nd prize**), *INFORMS* conference, May 1997, San Diego, California.

## Theses Supervised

- Ph.D. Theses:

- [TP1] Seong-Cheol Kang, “Robust Linear Optimization under Distributional Information”, Ph.D. in Systems Engineering, Boston University, January 2008.
- [TP2] Yang Shen, “Global Optimization Methods for Protein Interaction Prediction”, Ph.D. in Systems Engineering, Boston University, January 2008.
- [TP3] Wei Lai, “Optimizing Wireless Sensor Networks”, Ph.D. in Systems Engineering, Boston University, January 2007.
- [TP4] Jian Shao, “Optimal Resource allocation in multi-class service systems using pricing”, Ph.D. in Systems Engineering, Boston University, January 2005.
- [TP5] Chang Su, “Target-pursuing policies for scheduling and routing in multiclass queueing networks”, Ph.D. in Systems Engineering, Boston University, May 2004.
- [TP6] Yong Liu, “Pricing and Resource Allocation in Communication Networks and Supply Chains”, Ph.D. in Systems Engineering, Boston University, May 2002.
- [TP7] S. Vassilaras, “Measurement-based Quality of Service Provisioning in Multimedia Telecommunication Networks”, Ph.D. in Electrical and Computer Engineering, Boston University, January 2002.

- M.S. Theses:

- [TM1] Yimin Yu, “On transmission scheduling in wireless networks and route discovery for a fleet of robots”, M.S. in Manufacturing Engineering, Boston University, September 2004.
- [TM2] Ying Liu, “Analysis of Regulation Mechanisms in Communication Networks”, M.S. in Manufacturing Engineering, Boston University, January 2003.
- [TM3] H. Huang, “Yield Management in the Manufacturing and Service Industries”, M.S. in Manufacturing Engineering, Boston University, January 1998.

## Background Information

Date of Birth: April 27, 1968.

Place of Birth: Athens, Greece.

Citizenship: Dual U.S./Greek.

Languages: English, French, Greek.