ROBERTS, FRED S.

Birthdate: 19 June 1943

Education: A.B., Summa Cum Laude, Mathematics, Dartmouth College, 1964
M.S., Mathematics, Stanford University, 1967
Ph.D., Mathematics, Stanford University, 1968

Current Positions:
Distinguished Professor of Mathematics, Rutgers University, 1981 ...
Director Emeritus and Senior Advisor, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) (founded as an NSF Science and Technology Center and a Consortium of Princeton, Rutgers, AT&T Labs, Bell Labs, NEC Research Institute, Applied Communications Systems, and Cancer Institute of NJ), September 2011 ...
Director, Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA) (a DHS university center of excellence and a consortium of Rutgers University, Carnegie-Mellon University, City College of New York, Howard University, Morgan State University, Princeton University, Rensselaer Polytechnic Institute, Texas Southern University, Tuskegee University, University of Illinois-Urbana Champaign, U-MASS Lowell, University of Medicine and Dentistry of NJ, University of Southern California, Applied Communications Sciences, AT&T Labs, Bell Labs, TerraGo Technologies), April 2009 ...
Fellow (Member), Rutgers Center for Operations Research, 1982 ...
Member of Rutgers Graduate Faculties in Mathematics, Operations Research, Computer Science, Computational Molecular Biology, Quantitative Biomedicine, Industrial and Systems Engineering, and Education
Member, Cancer Institute of New Jersey, 2008 …

Past Positions:
Postdoctoral Fellow in Mathematical Psychology, Department of Psychology, University of Pennsylvania, 2/1968-6/1968
Professional Staff, Department of Mathematics, The RAND Corp., Santa Monica, CA, 6/1968-9/1971
Invited Fellow, Institute for Advanced Study, School of Social Science, Princeton, NJ, 9/1971-8/1972
Associate Professor of Mathematics, Rutgers University, 1972-1976
Professor of Mathematics, Rutgers University, 1976-1981
Visiting Professor, School of Operations Research & Industrial Engeering, Cornell University, Ithaca, NY, 1979-1980
Director, Rutgers Center for Operations Research, 1982-1983
Visitor, AT&T Bell Laboratories, Murray Hill, NJ 9/1986-1/1987 and 10/1987-2/1988
Associate Director, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), 7/1989-8/1992
Robert G. Stone Visiting Professor of Mathematics (part-time), Northeastern University, 1/1990-6/1995

Acting Director, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), 1/1991-6/1991, 8/1992-8/1993

Director, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), 1/1996-8/2011

Director, Homeland Security Center for Dynamic Data Analysis (DyDAn) (a consortium of Rutgers, Princeton, Rennselaer Polytechnic Institute, Texas Southern University, Texas State University-San Marcos, AT&T Labs, and Bell Labs), 2006-2009

Interim Director, Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), 11/2018-12/2019

Major Research Interests:
Mathematical models in the social, behavioral, biological, epidemiological, and environmental sciences and of problems of communications and transportation; theory of measurement; homeland security and in particular stadium and large venue security, natural disasters, maritime cyber security, and homeland security aspects of global environmental change; utility, decision making and social choice; resilience; socially responsible algorithms; graph theory; supply chains; mathematical psychology; precollege education.

Honors and Awards:
Daniel Webster National Scholar, 1961-1964
Woodrow Wilson Fellow, 1964-1965
Carl N. Jacobs Lecturer, University of Wisconsin, Stevens Point, 1975
Sigma Xi Lecturer, Swarthmore College, 1976
CBMS-NSF Research Conference Lecturer, Colby College, 1977
Nominated for President of SIAM (Society for Industrial and Applied Mathematics), 1981 (lost the election)
Outstanding Mathematician Lecturer, University of New Haven, 1983
Humboldt Fellowship (declined), 1984
Elected Vice President of SIAM, 1984, 1986
ACM/SIGACT Distinguished Service Prize, 1999
University Research Initiative Award, Air Force Office of Scientific Research, 1989-1993
Robert G. Stone Chair, Northeastern University, 1990-1995
NSF Science and Technology Centers Pioneer Award from National Science Foundation, 2001
Commemorative Medal of the Union of Czech Mathematicians and Physicists, Mathematics Research Section, October 2003
Fellow, American Mathematical Society, 2012
Docteur Honoris Causa, University of Paris-Dauphine, June 2013

Grants:

NSF Grants, 1972-1979, 1983 ...
AFOSR Grants, 1979-1983, 1985-1996
ONR Grants, 1993-2003, 2005-2012
ARO Grants, 2011-2012
DHS Grants, 2006 ...
NCHGR Grants, 1995-1998
NSA Grants, 1995-2003, 2006, 2008
DARPA Grants, 1996-2001
Sloan Foundation Grants, 1999-2004
AT&T Foundation Grants, 2000-2004
Burroughs Wellcome Fund Grants, 2002-2004, 2006

Partial List of Grants (List prior to 1999 is incomplete):
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"Signed Digraphs and their Applications to Problems of Society"
    NSF (ENG)
    July 1, 1972 – November 30, 1975
"Structure and Stability in Energy Demand Signed Digraphs"
    NSF (DMS), $19,200
    December 1, 1976 – May 31, 1978
"Meaningfulness of Conclusions from Subjective Judgements"
    NSF (IIS), $150,988
    June 1, 1983 – May 31, 1987
"Scales of Measurement and the Limitations they Place on Information Processing"
    NSF (IIS), $149,659
    July 15, 1986 – June 30, 1990
"Limitations on Problem Solving Imposed by Measurements"
    NSF (IIS), $91,979
    August 15, 1989 – July 31, 1992
"Science and Technology Center for Discrete Mathematics and Theoretical Computer
Science" (note: This was for the final 8 years of DIMACS, not for the first 3 years)
    NSF (CNS), $15,729,208
    February 1, 1992 – July 31, 2000
"Applications of String Matching to Molecular Biology"
    NSF (CCF), $74,678
    June 1, 1992 – November 30, 1994
"Seminar Series in Computational Biology"
    NSF (CCF), $10,928
    August 1, 1992 – June 30, 1994
"Scales of Measurement in Decisionmaking"
    NSF (SES), $180,000
    August 15, 1992 – July 31, 1997
"Combinatorial Computing Environments and Experimental Discrete Mathematics"
    NSF (CCF), $352,898
    August 1, 1993 – January 31, 1997

"DIMACS Fellowships in Research and Education"
    NSF (DRL), $49,600
    September 1, 1993 – February 28, 1995
"DIMACS 'Special Year' in Mathematical Support for Molecular Biology"
    NSF (DBI), $585,000
    August 15, 1994 – July 31, 1999
"MDC: Simulations of Integrated Communications Systems"
    NSF (CNS), $1,557,810
    September 15, 1995 – August 31, 1999
"Mathematical Science: Workshop: Statistical Physics Methods in Discrete Probability, Combinatorics and Theoretical Computer Science"
    NSF (DMS), $14,000
    March 15, 1997 – August 31, 1997
"U.S.-Czech Research on Discrete Mathematics and Theoretical Computer Science"
    NSF (OISE), $70,010
    May 1, 1997 – April 30, 2001
"Modeling, Axiomatic, and Measurement-theoretic Issues in Decisionmaking"
    NSF (SES), $221,034
    September 15, 1997 – August 31, 2002
"Project to Reconnect Two and Four Year College Faculty to the Mathematical Sciences Enterprise"
    NSF (DUE), $174,999
    January 1, 1998 – December 31, 2000
"US-Czech Research Experiences for Undergraduates Program in Discrete Mathematics and Theoretical Computer Science"
    NSF (OISE), $150,162
    June 1, 1999 – May 31, 2002
"DIMACS Special Year on Computational Intractability"
    NSF (CCF), $252,734
    September 15, 1999 - August 31, 2001
"DIMACS Special Focus on Next Generation Network Technologies and Applications"
    ONR, $150,000
    January 1, 2000 – September 30, 2001
"Workshops in DIMACS Special Year in Computational Intractability"
    NSA, $10,000
    January 24, 2000 - January 23, 2001
"DIMACS Connect Institute"
    AT&T Foundation, $90,000
    June 1, 2000 - May 31, 2003
"DIMACS Connect Institute"
    NSF (EHR), $766,292
    June 1, 2000 - May 31, 2004
"DIMACS Special Year on Computational Molecular Biology"
    NSF (DBI), $105,061
    July 1, 2000 - June 30, 2004
"Wireless Technologies and Applications"

NSA, $39,998
August 7, 2000 - August 6, 2001
"DIMACS Special Focus on Mathematics and the Foundations of Computer and Information Science"
NSF (DMS), $120,000
September 1, 2000 - August 31, 2003
"Special Focus in Computational Molecular Biology"
Alfred P. Sloan Foundation, $361,778
September l, 2000-August 31, 2003
"Three Special Focus Programs at DIMACS"
NSF (CCR), $3,788,255
September 1, 2000 - August 31, 2008
"Ubiquitous Networking/Fine-Grained Networking"
DARPA, $60,000
October 1, 2000 - August 31, 2001
"Special Projects: DIMACS Workshop: Complexity in Biosystems: Innovative Approaches at the Interface of Experimental Modeling and Computational Simulation"
NSF (CNS), $30,000
August 1, 2001 - July 31, 2002
"ISI 2007"
NSF (EIA), $10,000
August 15, 2001 - June 30, 2008
"Travel Support for US Participation in Joint EU/NSF Strategic Workshops"
NSF (EIA), $344,052
August 15, 2001 - July 31, 2008
"World Science Forum"
NSF (EIA), $15,000
August 15, 2001 - December 31, 2008
"Three Special Focus Programs at DIMACS
NSF (IIS), $730,134
August 15, 2001 - December 31, 2008
"Working Groups in Data Analysis and Mining"
NSF (IIS), $80,000
September 15, 2001 - August 31, 2004
"Planning Workshop: Quantum Communications, Cryptography and Coding"
NSF (CCF), $24,795
January 15, 2002 - December 31, 2002
"Working Group on Analogies Between Computer Viruses and Immune Systems and Biological Viruses and Immune Systems"
ONR, $25,377
January 15, 2002 - January 14, 2003
"International Conference on Computational and Mathematical Epidemiology"
Alfred P. Sloan Foundation, $45,000
February 1, 2002 - September 30, 2002
"Special Projects: Mathematical Sciences Methods for the Study of Deliberate Releases of Biological Agents and their Consequences"

NSF (IIS), $39,988
March 1, 2002 - February 29, 2004
"DIMACS-DIMATIA International REU Program"
NSF (EIA), $654,305
May 15, 2002 - April 30, 2008
"DIMACS Workshop: Data Depth: Robust Multivariate Analysis, Computational Geometry and Applications"
NSF (DMS), $18,000
July 1, 2002 - September 30, 2003
"Computational Information Theory and Coding
NSF (CCF), $190,197
July 1, 2002 - June 30, 2005
"U.S.-Czech-Hungarian Collaboration on Discrete Mathematics and Theoretical Computer Science Involving DIMACS-DIMATIA-Renyi Center"
NSF (OISE), $155,949
July 1, 2002 - June 30, 2007
"Monitoring Message Streams"
NSF (CCR), $2,047,523
July 1, 2002 - August 31, 2008
"Author Identification"
NSF (CCR), $239,500
July 1, 2002 - August 31, 2008
"Mining Multilingual Resources Using Text Analysis"
NSF (CCR), $749,959
July 1, 2002 - August 31, 2008
"Workshop in Video Mining and Data Depth"
NSA, $20,000
July 3, 2002-July 2, 2003
"Special Project: Satellite Reconnect Project"
NSF (CNS), $636,376
July 15, 2002 - June 30, 2007
"Summer Tutorial on Epidemiology for Mathematical Sciences and the Workshop on Host-Pathogen Dynamics"
Burroughs Wellcome Fund, $35,000
August 1, 2002 - September 30, 2002
"ITR: Special Focus on Computer Science and Epidemiology
NSF (IIS), $3,065,000
September 1, 2002 - August 31, 2010
"DIMACS Workshop on Software Security"
NSF (CNS), $15,737
February 1, 2003 - January 31, 2005
"SGER: DIMACS Exploratory Postdoctoral Program in Computational Epidemiology"
NSF (IIS), $100,000
April 15, 2003 - March 31, 2005
"Workshop on Information Processing in the Biological Organism"
NSF (IIS), $56,609

May 1, 2003 - April 30, 2006
"Three Workshops in Data Analysis and Mining"
NSF (CCF), $45,000
July 1, 2003 - June 30, 2005
"DIMACS Workshop on Computational Geometry and Computer-Aided Design and Manufacturing"
NSF (CCF), $19,200
August 1, 2003 - July 31, 2004
"DIMACS Special Focus on Communication Security and Information Privacy"
NSF (CCR), $350,000
August 15, 2003 - July 31, 2009
"US-France Cooperative Research: Computer Science and Decision Theory Applications of Notions of Consensus"
NSF (OISE), $39,000
February 1, 2004 - January 31, 2007
"DIMACS Special Focus on Computation and the Socio-Economic Sciences"
NSF (SES), $225,000
April 1, 2004 - March 31, 2008
"SGER: Connections between Mathematics and Biology in the High Schools: An Experimental Program"
NSF (DRL), $175,430
August 1, 2004 - July 31, 2007
"Workshop on Computational Tumor Modeling"
NSF (CCF), $23,900
September 1, 2004 - August 31, 2008
"Special Focus on Information Processing in Biology"
NSF (CCF), $339,920
September 1, 2004 - August 31, 2011
"Linking Mathematics and Biology in the High Schools: A Conference to be Convened at the DIMACS Center at Rutgers University, Piscataway, NJ, October 1-2, 2004"
NSF (DRL), $20,000
September 15, 2004 - August 31, 2005
"Partnering Teachers in the Biological and Mathematical Sciences"
NSF (CCR), $86,976
March 15, 2005 - August 31, 2008
"Insightful Understanding of China's Higher Education and Research in Computer Science and Information Technology"
NSF (CNS), $125,000
June 1, 2005 - May 31, 2010
"D^3: New Directions, Dimensions, and Domains for Computer Science"
NSF (CNS), $936,271
June 1, 2005 - September 30, 2011
"Workshops Connecting Theoretical CS to Other Fields"
NSF (CCF), $314,950
June 15, 2005 - May 31, 2010
"A Decision Logic Approach to the Port-of-Entry Inspection Problem"

NSF (SES), $617,999
July 1, 2005 - August 31, 2010
"UMDNJ (EPA) Environmental Bioinformatics Research Center"
UMDNJ, $50,004
October 1, 2005 - September 30, 2011
"Facing the Challenge of Infectious Diseases in Africa: The Role of Mathematical Modeling in Designing Cost-effective Control Strategies and Policies"
Burroughs Wellcome Fund, $10,000
March 1, 2006-December 31, 2006
"US-Africa Workshop: The Role of Mathematical Modeling in Facing the Challenge of Infectious Disease in Africa; Johannesburg, South Africa; September 26-28, 2006"
NSF (OISE), $81,746
August 1, 2006 - July 31, 2007
"DIMACS/Georgia Tech Special Focus on Discrete Random Systems"
NSF (DMS), $191,500
August 1, 2006 - July 31, 2010
"DNA Barcode Data Analysis Initiative: Tools for a New Generation of Biodiversity Data"
NSF (DBI), $27,842
September 1, 2006 - August 31, 2008
"US-Africa Advanced Studies Institute on Mathematical Modeling of Infectious Diseases in Africa: A Shortcourse"
NSF (ISE), $122,048
September 1, 2006 - August 31, 2009
"University-Industry Postdoctoral Fellow in Telecom/Combinatorics and Optimization"
NSF (DMS), $71,000
September 1, 2006 - August 31, 2009
"The Bio-Math Connection"
NSF (ESI), $2,724,813
October 15, 2006 - September 30, 2012
"The Center for Dynamic Data Analysis for Homeland Security"
ONR, $3,000,000
October 16, 2006 - October 15, 2009
"Optimization Problems of Detection Systems"
ONR, $224,863
November 20, 2006 - January 31, 2010
"REU Site: DIMACS/DIMATIA U.S./Czech International REU Program"
NSF (CFF), $390,000
February 15, 2007 - January 31, 2011
"Workshop on Recent Advances in Mathematics and Information Sciences for Analysis and Understanding of Massive and Diverse Sources of Data"
ONR, $20,046
April 2, 2007 - April 2, 2008
"ARI-MA: Sensor Management Problems of Nuclear Detection"
NSF (CBET), $485,767
September 1, 2007 - August 31, 2008
"Second US-China Computer Science Leadership Summit"

NSF (CNS), $99,971
September 1, 2007 - August 31, 2010
"DyDAn Fellowship Program in Homeland Security at Rutgers University"
DHS, $499,950
September 1, 2007 - September 29, 2010
"DIMACS Special Focus on Algorithmic Foundations of the Internet"
NSF (CNS), $311,867
October 1, 2007 - September 30, 2014
"DIMACS Workshop on Streaming, Coding, and Comprehensive Sensing: Unifying Theory and Common Applications to Sparse Signal/Data Analysis and Processing"
ONR, $16,821
May 15, 2008 - May 14, 2009
"Sensor Management for Nuclear Detection"
DHS, $1,510,643
September 1, 2008 - August 30, 2012
"DyDAn Fellowship Program in Homeland Security at Rutgers University"
DHS, $400,000
September 1, 2008 - June 30, 2013
"African Biomathematics Initiative"
NSF (DMS), $940,000
September 15, 2008 - August 31, 2012
"DIMACS Workshop on Hardness of Approximation"
NSA, $10,000
October 1, 2008- September 30, 2009
"Center of Excellence for Command, Control, and Interoperability (CCICADA)"
DHS, $23,082,387
July 1, 2009 - June 30, 2017
"AF: Small: Computer Science and Decision Making"
NSF (CCF), $300,000
September 1, 2009 - August 31, 2013
"REU Site: DIMACS/DIMATIA U.S./Czech International REU Program"
NSF (CCF), $532,637
March 1, 2010 - February 28, 2014
"WTC Commerce and Security Project WTC-CASS"
DHS, $561,434
July 1, 2010 - June 30, 2011
"IRIS to ISI"
DHS, $150,000
September 1, 2010 - May 31, 2011
"CCICADA Fellowship Program in Homeland Security at Rutgers University"
DHS, $400,000
September 1, 2010 - August 31, 2013
"Miscellaneous Projects at CCICADA"
DHS, $250,000
September 15, 2010 – Sept. 14, 2011
"Workshop on Mathematical Challenges for Sustainability"

NSF (DMS), $111,249
September 15, 2010 - August 31, 2013
"The Challenge of Interdisciplinary Education: Math-Bio"
NSF (DRL), $1,634,808
September 15, 2010 - August 31, 2015
"CMISS: DIMACS Project on CS/Math in Service to Society"
NSF (CCF), $800,000
September 15, 2010 - August 31, 2014
"Genome Structure and Variation Workshop to be held in the summer 2011 at Rutgers Center for Discrete Mathematics and Theoretical Computer Science (DIMACS)"
NSF (MCB), $36,190
October 1, 2010 - September 30, 2011
"Workshops: Special Focus on Algorithmic Decision Theory"
NSF (SES), $70,000
October 1, 2010 - September 30, 2013
"Stadium Evacuation"
DHS, $404,000
December 9, 2010 - June 30, 2012
"Stadium Evacuation"
DHS, $120,729
Jan. 1, 2011 – Aug. 20, 2011
"Social Media Alerts and Warnings"
DHS, $425,000
January 7, 2011 - June 30, 2012
"Smart Phone Apps that Connect to the Incident Command Function of the Hippocrates Online System"
State of New Jersey, Department of Health and Senior Services, $249,540
March 1, 2011 - July 31, 2011
"Conference on Effects of Genome Structure"
Burroughs Welcome Fund, $8,000
July 1, 2011 - December 31, 2011
"Conference on Effects of Genome Structure"
International Union of Biological Sciences, $7,100
July 1, 2011 - December 31, 2011
"Fusion Center for Data Analysis"
DHS, $82,781
July 27, 2011 - July 26, 2012
"IRIS"
DHS, $129,200
September 1, 2011 – August 31, 2012
"Three New DIMACS Special Focus Programs"
NSF (CCF), $699,044
September 1, 2011 - August 31, 2017
"A Targeted Risk-based Approach to Fisheries Law Enforcement in the First CG District"
US Coast Guard, $78,840
September 16, 2011 – February 28, 2013

"Algorithmic Decision Theory Workshop: The Science of Expert Opinion, October 2011"
    DOD/ARO, $10,000
    October 1, 2011 - March 31, 2012
"Urban Commerce and Security Study UCASS"
    DHS, $77,000
    February 1, 2012 – June 30, 2012
"ARMOR Wall System"
    DHS, $400,000
    August 1, 2012 - June 30, 2013
"ARMOR Wall System"
    DHS, $14,000
    August 16, 2012 - June 30, 2013
"Safety Act: Best Practices for Stadium Security"
    DHS, $500,000
    August 16, 2012 - June 30, 2013
"Cybersecurity"
    DHS, $50,000
    September 13, 2012 - June 30, 2013
"CCICADA Fellowship Program in Homeland Security at Rutgers University"
    DHS, $500,000
    September 1, 2012 - August 31, 2015
"Mathematics of Planet Earth beyond 2013 (MPE 2013+)"
    NSF (DMS), $467,549
    September 1, 2012 - August 31, 2016
"Mathematical and Computational Methods for Planning a Sustainable Future"
    NSF (DRL), $425,773
    October 1, 2012 - September 30, 2015
"Decision Analysis and Experimental Design: Phase 1 – Evaluation of Rad/Nuc Algorithms"
    (DHS – DNDO), $250,000 (subcontract from University of Southern California)
    February 1, 2013 – January 31, 2014
"High Efficiency Evaluative Design (HEED)"
    (DNDO), $83,000 (subcontract from Battelle – PNNL)
    December 1, 2014 – April 30, 2015
"Development of a Crowd Management Simulation Tool and Facility Data Platform in
Support of the Redesign of the Port Authority Bus Terminal"
    (Port Authority of New York and New Jersey), $481,509
    January 1, 2015 – July 31, 2016
"Stadium Security"
    (DHS), $135,000
    July 1, 2015 – June 30, 2016
"Stadium Security, Phase 2"
    (DHS), $100,000
    July 1, 2015 – June 30, 2016
"Cargo Transport"
    (DHS), $271,000
    July 1, 2015 – June 30, 2016

"Cyber Economic Incentives"
  (DHS), $326,060
  July 1, 2015 – June 30, 2017
"APEX Engines"
  (DHS), $900,000
  July 1, 2015 – June 30, 2017
"ISE Interoperability"
  (DHS), $975,000
  July 1, 2015 – June 30, 2017
"Workshop: Modeling of Infectious Diseases with a Focus on Ebola"
  (NSF), $99,639
  January 16, 2016 – January 15, 2017
"Development of a Crowd Management Simulation Tool and Facility Data Platform in
Support of the Redesign of the Port Authority Bus Terminal: Enhancements"
  (Port Authority of New York and New Jersey), $37,708
  January 6, 2016 – July 31, 2016
"Economics of Security"
  (DHS), $450,000
  July 1, 2016 – June 30, 2017
"Interoperability Tools and Information Sharing Environment"
  (DHS), $1,995,000
  September 26, 2016 – September 25, 2017
"Identity and Access Management (IDAM) APEX Engine"
  (DHS), $1,200,000
  September 27, 2016 – August 26, 2019
"i-Group Learning for Dynamic Real Time Anomaly Detection with Applications in
  Maritime Threat Detection"
  (NSF), $299,967
  July 15, 2017 – July 30, 2020
"Identity and Access Management (IDAM) APEX Engine"
  (DHS), $118,000
  August 10, 2017 – July 30, 2020
"Economics of Security for Large Venues"
  (DHS), $143,000
  August 10, 2017 – March 9, 2018
"SHERLOCK: A Tailored Web Scraper for Government Use"
  (DHS), $370,000
  August 11, 2017 – June 10, 2018
"Data Analytics to Enhance Prevention Risk Based Allocation for Vessel Safety and
  Environmental Compliance Inspections and Examinations"
  (US Coast Guard), $250,000
  September 12, 2017 – September 11, 2018
"Missed Detections: From Data to Actionable Estimates"
  (NSF), $170,811 (subcontract from University of Houston)
  September 15, 2017 – June 30, 2018
"Best Practices for Sharing Digital Evidence"

(DHS), $209,999 (subcontract from George Mason University)
January 1, 2018 – June 30, 2018
"Development of an Algorithm for Enhanced Adjudication for Aviation Security Programs"
(TSA), $536,225
August 27, 2018 – December 17, 2019

Talks:

Noteworthy Talks:
SIAM National Meeting invited address, Cal. Tech., 1974
Sigma Xi lecture, Swarthmore, 1976
CBMS-NSF Research Conference lecturer, Colby College, 1977
Mathematical Association of America National Meeting, invited address, Biloxi, 1979
International Congress on Mathematics Education, Berkeley, 1980
Outstanding Mathematician Lectures, University of New Haven, 1983
International Symposium on Operations Research, Osnabruck, W. Germany, 1984
Beijing Mathematical Society, 1985
Southeastern Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, FL, 1987
First International Symposium on Combinatorics, Seoul, S. Korea, 1995 (series of two plenary lectures)
Royal Nepal Academy of Science and Technology, Kathmandu, Nepal, 1998
Distinguished Computer Science Lecture Program, New York Academy of Sciences, 2001
Rota Lecture at Conference on Interconnections among Codes, Designs, Graphs and Molecular Biology, Hsinchu, Taiwan, 2002
American Mathematical Society Congressional Briefing: "Homeland Security: What Can Mathematicians Do?" Washington, DC, 2004
EUROXXI (21st European Conference on Operations Research sponsored by the Association of European Operational Research Societies, EURO), Rekjavik, Iceland, July 2006
40th Southeastern Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, Florida, March 2009
First International Conference on Algorithmic Decision Theory, Venice, October 2009
Mathematique de la planete Terre, lecture at University of Paris Dauphine on occasion of being awarded Docteur Honoris Causa, June 2013
Plenary Talk at National Football League Security Summit, Carlsbad, CA, June 2014
Willie B. Rajanna Memorial Lecture, Morgan State University, April 2015
Keynote talk at International Conference on Global Challenges and Data-driven Science, Saint Petersburg, Russia, October 2017.

Special Lecture Series:
Cornell University (10 lectures on Mathematical Models in Environmental Science), 1973
Colby College (10 lectures on Graph Theory and its Applications to Problems of Society), 1977
The Citadel (10 lectures on Discrete Mathematical Models in the Social, Biological and Environmental Sciences), 1978
Allegheny College (4 lectures on Graph-theoretical Models of Problems of Society), 1979
Western Maryland College (4 lectures on Applications of Graph Theory), 1981
Associated Colleges of Central Kansas (4 lectures on Applications of Discrete Mathematics), 1985
ORSA National Meeting, Boston (6 lectures on Applications of Graph Theory), 1985
Academia Sinica, Beijing (4 lectures), 1985
Jilin University of Technology, Changchun, China (8 lectures), 1985

Claremont Graduate School (6 lectures on Applications of Discrete Mathematics), 1986

Florida Atlantic University (4 lectures), 1987

Le Troisieme Cycle Romand in Operations Research, Grimentz, Switzerland (14 lectures), 1988

Jackson State University (3 lectures on Graph Theory and its Applications), 1990

William Paterson College (4 lectures on Graph Theory and its Applications), 1992

DIMACS Working Group Meeting on Order-theoretic Aspects of Epidemiology, (6 hours of lectures on The Theory of Measurement and its Applications), 2005

MAA Mathfest, Knoxville, TN (2 hours of lectures on Measurement of Pollution at Short Course in Environmental Modeling), 2006

INFORMS National Meeting, Austin, TX (tutorial series on Meaningless Statements in Epidemiology), 2010

Two Lectures on Data Analysis and Homeland Security at Visual Analytics Summer School, Middlesex University, London, UK, 2010

Invited Addresses:

Bay Area Colloquium in the Philosophy and Methodology of Science, Berkeley, 1967

NSF Workshop on Perceptual Geometries, Miami, 1970

Mathematics Association of Two-Year Colleges of NJ, Fall Meeting, Camden County College, 1972

SIMS (SIAM Institute for Mathematics and Society) Mtg., Sterling Forest, NY, 1973

Organization for Economic Cooperation & Development Seminar on Structural Analysis, Paris, 1973

SIAM National Meeting, Cal Tech, 1974

New York Academy of Sciences, 1974

National Association of Independent Schools Convention, Atlantic City, New Jersey, 1975

Association of Mathematics Teachers of NJ, Caldwell College, 1975

SIMS Research Applications Conference on Energy, Alta, Utah, 1975

National Council of Teachers of Mathematics, New York, 1975

Indiana University Workshop on Applied Mathematics, 1975

Mathematical Association of America, Philadelphia Section, Gettysburg College, 1976

International Conference on Graph Theory and its Applications, Western Michigan University, 1976

Mathematical Association of America, Ohio Section, Marshall University, 1976

New York Academy of Sciences, 1977

NY Academy of Sciences, International Conference on Combinatorial Mathematics, 1978

Mathematical Association of America, National Meeting, Biloxi, MS, 1979

Mathematical Association of America, Texas Section, Texas Tech University, 1979

Mathematical Association of America, Allegheny Mountain Section, Westminster College, 1979

SIAM, Southeastern Atlantic Section, University of Alabama, Birmingham, 1980

International Conference on Graph Theory and its Applications, Western Michigan University, 1980

International Congress on Mathematics Education, Berkeley, 1980

Mathematics Association of Two-Year Colleges of NJ, Fall Meeting, Trenton State College, 1980

Workshop on Fundamental Logical Concepts of Measurement, Turin, Italy, 1983

International Conference on Mathematical Psychology, Brussels, 1983

International Conference on Graph Theory and its Applications, Western Michigan
    University, 1984

NATO Conference on Graphs and Orders, Banff, 1984

International Symposium on Operations Research, Osnabruck, West Germany, 1984

Mathematical Association of America, Northeastern Section, Springfield, MA, 1984

NY Academy of Sciences, International Conference on Combinatorial Mathematics, 1985

Beijing Mathematical Society, 1985

Mathematical Association of America, NJ Section, Hoboken, 1986

Advanced Research Institute in Discrete Applied Mathematics, New Brunswick, New Jersey,
    1986

Eric F. Gardner Conference (NY/Ontario Measurement and Statistics Conference),
    Rochester, NY, 1986

Southeastern Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, FL,
    1987

Mathematical Association of America, Florida Section, Boca Raton, FL, 1987

Mathematical Association of America, Allegheny Mountain Section, Erie, PA, 1987

First International Colloquium on Pseudo-Boolean Optimization and Related Areas,
    Chexbres, Switzerland, 1987

Workshop on Applications of Combinatorics and Graph Theory in the Biological and Social
    Sciences, Institute for Mathematics and its Applications, University of Minnesota l988 (2
    lectures)

International Conference on Graph Theory and its Applications, Western Michigan
    University, 1988

Graph Theory Day, New York Academy of Sciences, New York, 1988

Workshop on Measurement Theory, Center for Advanced Study in the Behavioral Sciences,
    Palo Alto, California, 1988 (2 lectures)

Conference on Applications of Graph Theory to Computer Science and Other Fields, New
    Mexico State University, Las Cruces, 1989

Hartford Conference on the First Two Years: Teaching the Mathematical Core, University of
    Hartford, 1989

Sixth Annual Rose-Hulman Conference on Undergraduate Mathematics, Rose-Hulman
    Institute of Technology, Terre Haute, Indiana, 1989, (2 lectures)

AFOSR Day, Air Force Office of Scientific Research, DC, 1989

Spring Meeting, Mathematical Association of America, New Jersey Section, and American
    Mathematical Association of Two Year Colleges of New Jersey, Princeton University,
    1990

First Alaska Graph Theory Conference: Quo Vadis Graph Theory, Fairbanks, Alaska, 1990

Workshop on Graph Labellings, Northeastern University, Boston, 1991

DIMACS/RUTCOR Workshop on Combinatorial Optimization in Science and Technology,
    New Brunswick, NJ, 1991

Mathematical Association of America, Eastern Pennsylvania/Delaware Section, LaSalle
    College, Philadelphia, 1991

SIAM, Southeast Atlantic Section Spring Meeting, Western Carolina University, Cullowhee,
    NC, 1991

Sixth Clemson Miniconference on Discrete Mathematics, Clemson University, Clemson, SC, 1991

International Conference on Graph Theory and its Applications, Western Michigan University, 1992

European Mathematical Psychology Group, Brussels, Belgium, 1992

Mathematical Association of America, Seaway Section, Ithaca, New York, 1992

Conference on Graphs and Matrices, Boulder, Colorado, 1993

International Conference on Ordinal Data Analysis, University of Massachusetts, Amherst, 1993

New York Academy of Sciences Graph Theory Day, Bard College, Annandale-on-Hudson, New York, 1993

First International Symposium on Combinatorics, Seoul, S. Korea, 1995 (series of two plenary lectures)

Mathematical Association of America, NJ Section, Cranford, NJ, 1996

International Conference on Graph Theory, Combinatorics, Algorithms, and Applications, Kalamazoo, MI, 1996

European Special Interest Group in Multicriteria Analysis (ESIGMA), annual meeting, Brussels, Belgium, 1996

International Conference on Ordinal and Symbolic Data Sets, Darmstadt, Germany, 1997

International Conference on the Future of Discrete Mathematics, Stirin Castle, Czech Republic, 1997

International Workshop on Graph Colouring and Applications, Montreal, May 1997

Cumberland Conference on Combinatorics, Graph Theory, and Computing, Johnson City, Tennessee, 1998

Royal Nepal Academy of Science and Technology, Kathmandu, Nepal, 1998

International Conference on Ordinal and Symbolic Data Analysis, Amherst, MA, 1998

DIMACS Miniworkshop on Mathematical and Computational Approaches to Elections, 1999

DIMACS Research and Education Institute, 1999

International Conference on Combinatorial and Computational Mathematics, Pohang, Korea, 2000

International Conference on Graph Theory, Combinatorics, Algorithms, and Applications, Kalamazoo, MI, 2000

DIMACS Connect Institute, 2000

International Conference 2000 -- The Year of Mathematics (on the occasion of the 50th anniversary of the Mathematical Institute of the Hungarian Academy of Sciences and the 150th Anniversary of the Academy), Budapest, 2000

DIMACS Workshop on Bioconsensus, 2000

Clemson Miniconference on Discrete Mathematics, Clemson, SC, 2000

DIMACS Connect Institute, 2001

DIMACS Workshop on Bioconsensus II, 2001

Conference on Interconnections among Codes, Designs, Graphs, and Molecular Biology, Hsinchu, Taiwan, 2002

DIMACS Workshop on Labelings and Numberings of Graphs, 2002

DIMACS Connect Institute, 2002

West Point Conference on Discrete Mathematics, 2002

DIMACS Connect Institute, 2003

International Conference on Ordinal and Symbolic Data Analysis, Irvine, California, 2003

DIMACS-DIMATIA-Renyi Working Group Meeting on Graph Colorings and their Generalizations, 2003

Conference on Good Ideas in Teaching Precalculus and ..., Rutgers University, 2004

Mathematical Association of America, NJ Chapter, 2004

DIMACS-DIMATIA-Renyi Working Group Meeting on Algebraic and Geometric Methods in Combinatorics, Budapest, 2004

Society for Mathematical Psychology Annual Meeting (Falmagne Festschrift), Ann Arbor, MI, 2004

Workshop on Computer Science and Decision Theory, Paris, 2004

DIMACS Bio-Math Connect Institute, 2004

Workshop on Graph Colorings and their Generalizations, Renyi Institute, Budapest, Hungary, 2005

DIMACS Bio-Math Connect Institute, 2005

Conference on Mathematical Methods in Counter-terrorism, Columbia, SC, 2005

Conference on Probabilistic Combinatorics and Algorithms: A Conference in Honor of Joel Spencer's 60th Birthday, 2006

DIMACS/DIMATIA/Renyi Combinatorial Challenges Conference, 2006

Combinatorial Challenges 2006 (A Meeting in Celebration of Pavol Hell's 60th Birthday), Victoria, BC, Canada, 2006

EUROXXI (21st European Conference on Operations Research sponsored by the Association of European Operational Research Societies, EURO), Rekjavik, Iceland, July 2006

DIMACS Bio-Math Connect Institute, Broomfield, CO, July 2006

Workshop on on Facing the Challenge of Infectious Diseases in Africa: The Role of Mathematical Modeling, Johannesburg, South Africa, September 2006

Workshop on Voting Theory and Preference Modeling, University of Paris - Dauphine, October 2006

Plenary talk at Mathematical Association of America, Allegheny Mountain Section, April 2007

Workshop on Mathematical Modeling of Infectious Diseases in Africa, Stellenbosch, South Africa, June 2007

DIMACS BioMath Connection Field Testers Workshop, July 2007

Plenary talk at European Mathematical Psychology Group meeting, Luxembourg, September 2007

Minisymposium on Discrete Sciences Applications in Homeland Security, Rutgers University, September 2007

Math Awareness Month Workshop on Mathematics and Voting Theory, New Jersey City University, April 2008

Charles Franke Memorial Lecture, Seton Hall University, April 2008

Conference in Honor of F.R. "Buck" McMorris, Illinois Institute of Technology, May 2008

Plenary talk at European Commission Measuring the Impossible Network Training Course, Gena, Italy, June 2008

DIMACS BioMath Connection Field Testers Workshop, July 2008

Plenary talk at 40th Southeastern Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, FL, March 2009

Plenary talk at Conference on Mathematics and Biology: The New Educational Synergy

SUNY Farmingdale, April 2009

DIMACS BioMath Connect Institute, July 2009

Advanced Study Institute in Economic Epidemiology, Makerere University, Kampala, Uganda, July 2009

National Association of Mathematicians, Mathfest, Washington, DC, November 2009

Plenary talk at meeting of NYC Section of the Mathematical Association of America, May 2010.

Math for America, New York University, January 2010

Workshop on Conservation Biology, Southern African Wildlife College, Hoedspruit, Limpopo, South Africa, August 2010

Workshop on Evidence-based Policy Making, University of Paris-Dauphine, December 2010

Workshop on Algorithmic Decision Theory for the Smart Grid, Rutgers, October 2010

DIMACS/CCICADA/DHS Student Conference on Discrete Mathematics: One Way to Exciting Careers in Homeland Security, Rutgers, July 2011

Workshop "Toward the Smart Grid," Lehigh University, Bethlehem, PA, January 2012

Workshop on Quantitative Ecology and Sustainable Environments, University of Kwazulu Natal, Durban, South Africa, July 2012

Workshop on Algorithmic Aspects of Information Fusion, Rutgers, November 2012

International Workshop on Clusters, Orders, Trees: Methods and Applications, in Honor of Professor Boris Mirkin, Moscow, Russia, December 2012

Plenary talk at Conference on Tools for Group Decision (OPDE)/Optimization Days, Montreal, May 2013

Invited talk at Workshop on Workshop on Conception Innovante des Politiques Publiques, University of Paris-Dauphine, June 2013

Invited talk at Workshop on Algorithmic Information Fusion and Data Mining (WAIFDM), DIMACS, September 2013

Invited talk at Workshop on Urban Planning for Climate Events, DIMACS, September 2013

Invited talk at Conference on Meaningfulness and Learning Spaces: A Tribute to the Work of Jean-Claude Falmagne, UC Irvine, February 2014

Plenary talk at New York Area Graph Theory Day, Rutgers University, April 2014

Invited talk at MPE2013+ Workshop on Sustainable Human Environments, DIMACS, April 2014

Invited talk at Workshop on Mathematics of Planet Earth: Data-Aware Energy Use, University of California, San Diego, September 2014

Invited talk at Atlanta Lecture Series in Combinatorics and Graph Theory XIII, November 2014

Plenary talk at International Conference on Cyber Security, Fordham University, January 2015

Invited talk at Conference on Validation: What is it?, University of California - Irvine, February 2015

Invited talk at Workshop on MPE: Natural Disasters, Georgia Tech, May 2015

Invited talk at Big 10 Security Directors Meeting, Piscataway, NJ, August 2015

Invited talk at Workshop on Mathematics of Planet Earth: Management of Natural Resources, Howard University, June 2015

Invited talk at Mathematics of Planet Earth: Education for the Planet Earth of Tomorrow, University of Tennessee, September 2015

Invited talk on Data and Citizens Science, International workshop on Citizen Science, University of Paris, Dauphine, December 2015

Plenary talk at International Conference on Data Intensive Systems Analysis for Geohazard Studies, Sochi, Russia, July 2016.

Plenary talk at TSA-NPPD Public Area Security Summit, Tysons Corner, VA, April 2017.

Plenary talk at Workshop on Advanced Development for Security Applications, Northeastern University, May 2017.

Keynote talk at Conference on Cyber Security Community Awareness, Kean University, October 2017.

Invited talk at Workshop on Social Responsibility of Algorithms, U. of Paris – Dauphine, December 2017.

Invited Breakfast Talk at Society for Naval Architects and Marine Engineers Annual Meeting, Providence, RI, October 2018.

Invited Lecture Series:

Five lectures on "Mathematics and the Social Sciences," Mathematics Association of Two-Year Colleges of NJ, Middlesex County College, 1973

Ten lectures on "Mathematical Models in Environmental Science," Cornell University, 1973

Ten Lectures on "Graph Theory and its Applications to Problems of Society," an NSF-CBMS Research Conference, Colby College, 1977

Ten lectures on "Discrete Mathematical Models in the Social, Biological and Environmental Sciences," The Citadel, 1978

Ten lectures on "Mathematical Models and Contemporary Problems," MD-DC-VA Section of the MAA, Salisbury State College, 1978

Four lectures on "Graph-theoretical Models of Problems of Society," Allegheny College, 1979

Four lectures on "Applications of Graph Theory," Western Maryland College, 1981

Five lectures on "Graph Theory Models in the Social Sciences and Group Decisionmaking," Sloan Applied Mathematics Workshop, Davidson College, No. Carolina, 1983

Outstanding Mathematician Lectures, University of New Haven, 1983

Four-lecture minicourse on "Applications of Discrete Mathematics," MAA Annual Meeting, Louisville, 1984

Four-lecture minicourse on "Applications of Discrete Mathematics," MAA Annual Meeting, Anaheim, 1985

Four lectures on "Applications of Discrete Mathematics," Association Colleges of Central Kansas, McPherson, KS, 1985

Day-long Workshop on "Applications of Graph Theory," ORSA Annual Meeting, Boston, 1985

Eight lectures at Jilin University of Technology, Changchun, Jilin Province, Peoples Republic of China, 1985

Four lectures at Academia Sinica, Beijing, Peoples Republic of China, 1985

Two lectures at University of Shandong, Jinan, Shandong Province, Peoples Republic of China, 1985

Two lectures at Tongji University, Shanghai, Peoples Republic of China, 1985

Six lectures on "Applications of Discrete Mathematics," Claremont Graduate School, 1986

Four lecture minicourse on "Applications of Discrete Mathematics," MAA Annual

Meeting, San Antonio, 1987

Four lectures at Florida Atlantic University, Boca Raton, 1987

Three lectures, MAA, Florida Section, Boca Raton, 1987

Ten lectures on "Applications of Discrete Mathematics," MAA Northeastern Section, University of Maine, Orono, 1987

Fourteen lectures to le Troisieme Cycle Romand, Grimentz, Switzerland, 1988

Twelve lectures for Mathematics Association of Two Year Colleges of New Jersey, Princeton, May 1988 and September 1988

Four lectures to COMAP Faculty Advancement Workshop on Discrete Mathematics, Boston, MA, 1988

Eight lectures, MAA Allegheny Mountain Section, Allegheny College, Meadville, PA, 1988

Four lecture minicourse on "Applications of Discrete Mathematics," MAA Annual Meeting, Phoenix, 1989

Five lectures on Applications of Graph Theory, DIMACS Summer Workshop for High School Teachers, New Brunswick, NJ, 1989

Two lectures as Visiting Distinguished Professor, Clemson University, 1990

Five Lectures on Applications of Graph Theory, DIMACS Summer Workshop for High School Teachers, New Brunswick, NJ, 1990

Four Lectures on Applications of Graph Theory and Counting, DIMACS Summer Workshop for High School Students, New Brunswick, NJ, 1990

Three lectures on Graph Theory and its Applications, Jackson State University, Jackson, Mississippi, 1990

Two lectures on Applications of Graph Theory, DIMACS Summer Workshop for High School Teachers, New Brunswick, NJ, 1991

Four lectures on Graph Theory and its Applications, William Paterson College, Wayne, NJ, 1992

Five lectures on Applications of Graph Theory, DIMACS Summer Workshop for High School Teachers, New Brunswick, NJ, 1992

Two Lectures on Order Relations and Utility Functions at Random Utility 2000, Duke University, 2000

Two lectures on Applications of Graph Theory at Short Course on A Sampling of Applications of Graph Theory, MAA National Meeting, San Diego, CA, 2002

Two lectures on Bioconsensus and Channel Assignments at University of Paris, Dauphine, 2002

Six hours of tutorial lectures on The Theory of Measurement and its Applications at DIMACS Working Group Meeting on Order-theoretic Aspects of Epidemiology, DIMACS, 2005

Two hours of lectures on Measurement of Pollution, MAA Mathfest, Short course on Environmental Modeling, Knoxville, TN, 2006

Three lectures on Mathematics and Homeland Security at Conference on Mathematics and Homeland Security at Department of Homeland Security Center of Excellence for Dynamic Data Analysis, May 2007

INFORMS National Meeting, Austin, TX (tutorial series on Meaningless Statements in Epidemiology), November 2010

Two Lectures on Data Analysis and Homeland Security at Visual Analytics Summer School, Middlesex University, London, UK, September 2010

Other Invited or Key Lectures:

Panelist, MAA Summer Meeting, Dartmouth College, 1972

Invited talk at George Washington University Conference on Graphs and Combinatorics, Washington, DC, 1973

Symposium participant, Mathematical Psychology Meetings, Montreal, 1973

Panelist, MAA Annual Meeting, San Francisco, 1974

Invited talk at Operations Research Society of America Meeting, Chicago, 1975

Panelist, MAA Annual Meeting, San Antonio, 1976

Invited talk at Operations Research Society of America Meeting, New York, 1978

Discussant, Energy Information Administration Symposium on Computer Assisted Analysis and Model Simplification, University of Colorado, 1980

Invited talk at AMS Special Session on Graph Theory and Combinatorics, Bryn Mawr, 1982

Invited panelist at MAA New Jersey Section Meeting, Georgian Court College, 1982

Invited talk at Silver Jubilee Combinatorics Conference, University of Waterloo, 1982

Invited talk at Operations Research Society of America Meeting, Chicago, 1983

Invited talk at Operations Research Society of America Meeting Orlando, FL, 1983

Panelist at Meeting of Department Chairmen, AMS/MAA Annual Meeting, Louisville, 1984

Invited talk at First Hoboken Symposium on Graph Theory, Stevens Inst. of Technology, 1984

Invited panelist at Amer. Educational Research Asso./Nat'l Council on Measurement in Education Joint Annual Mtg., Chicago, 1985

Panelist at NY Academy of Sciences Internat'l Conference on Combinatorial Mathematics, 1985

Invited talk at special session at AMS National Meeting, New Orleans, 1986

Invited minisymposium speaker, SIAM Nat'l Mtg., Denver, 1987

Invited talk to West Windsor-Plainsboro High School, NJ, 1988

Invited talk to Princeton High School, Princeton, NJ, 1988

Invited talk to High School Institute for Science and Math, Douglass College, 1988

Invited Faculty Workshop, Westfield High School, NJ, 1989

Invited talk to Rahway High School, NJ, 1989

Invited talk to High School Institute for Science and Math, Douglass College, 1989

Invited talk to Spotswood High School, Spotswood, NJ, 1990

Invited talk to International Symposium on Functional Equations, Graz, Austria, 1990

Invited talk at Joint Policy Board in Mathematics Press Briefing on Mathematics and the Environment, Baltimore, MD, 1992

Invited talk at ECCO V, meeting of European Chapter on Combinatorial Optimization, Technische Universitat of Graz, Graz, Austria, 1992

Invited talk at Fourth Annual Stony Brook Biomathematics Conference, SUNY, Stony Brook, NY, 1992

Invited talk at 4th Intern. Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, Palma de Mallorca, Spain, 1992

Series of four invited talks at workshop on Mathematical Systems Underlying Axiomatic Measurement Theories, University of California, Irvine, CA, 1992

Invited talk at conference on Discrete Mathematics in the Schools, DIMACS, 1993

Invited panelist at Conference on Graduate Programs in the Applied Mathematical Sciences,

Clemson University, Clemson, SC, 1993

Invited talk at special session on Graph Theory at American Mathematical Society Meeting, Washington, DC, 1993

Invited talk at Cresskill High School, Cresskill, NJ, 1994

Invited talk at special session on Graph Theory at American Mathematical Society Meeting, Orlando, FL, 1995

Invited talk at Ocean Township High School, Oakhurst, NJ, 1995

Invited talk at at Livingston High School, Livingston, NJ, 1995

Invited talk at DIMACS Leadership Program Reunion, Piscataway, NJ, 1995

Invited talk at Rutherford High School, Rutherford, NJ, 1996

Invited talk at International Conference on Combinatorics, Balatonlelle, Hungary, 1996

Invited talk at session on Mathematics and the Social Sciences, American Mathematical Society Mathfest, Seattle, Washington, 1996

Invited talk at DIMACS workshop on Mathematical Hierarchies and Biology, Piscataway, NJ, 1996

Invited talk at special session on Partially Ordered Sets, American Mathematical Society Meeting, San Diego, CA, 1997

Invited talk at special session on Mathematical Aspects of Consensus Theory, American Mathematical Society Meeting, Washington, DC, 2000

Invited talk to Math Academy 2000, Archdiocese of Newark, Program for Teachers, Seton Hall University, 2000

Invited panelist, Conference on Challenges for Theoretical Computer Science, Portland, OR, 2000

Invited talk at Conference on Ordinal and Symbolic Data Analysis, Brussels, Belgium, 2000

Invited panel organizer and panelist at Chairs Colloquium (for Chairs of Departments in the Mathematical Sciences), National Academy of Sciences, Washington, DC, 2000

Invited talk at special session on Graph Theory, American Mathematical Society Meeting, Hoboken, NJ, 2001

Invited talk at Collegiate School, New York, NY, 2001

Invited talk at DIMACS Working Group Meeting on Mathematical Sciences Methods for the Study of Deliberate Releases of Biological Agents and their Consequences, 2002

Invited talk at Symposium on Bioconsensus: Bringing Social Choice Theory to Biology, AAAS National Meeting, Boston, 2002

Invited talk at Rutgers Symposium on Homeland Security, 2002

Invited talk at DIMACS International Conference on Computational and Mathematical Epidemiology, 2002

Invited talk at Minisymposium on Applications of Mathematics to the Study of Deliberate Releases of Biological Agents and Related Topics, SIAM 30th Anniversary Meeting, Philadelphia, 2002

Invited talk at Conference on Mathematical Modeling of the Spread of Selected Bioterrorism Agents, MITRE Corporation, 2002

Invited Talk at Knowledge, Discovery and Dissemination Symposium, 2003

Invited talk at MITRE Corporation Meeting on Modeling and Prediction of Disease, McLean, VA, 2003

Invited talk at DIMACS Workshop on Tree of Life, 2003

Invited talk at Knowledge, Discovery and Dissemination Symposium, McLean, VA, 2003

Invited talk at Rutgers University Symposium on Homeland Security Research, Sept. 2003

Invited talk at State of New Jersey Symposium on Homeland Security Research, Oct. 2003

Invited talk at NIH BISTI (Biomedical Information Science and Technology Initiative) Symposium: Digital Biology: The Emerging Paradigm, Bethesda, MD, 2003

Invited talk at Minisymposium, ENST-Bretagne, Brest, France, 2004

Invited panelist at ASA Workshop on Statistics and Counter-terrorism, New York, 2004

Invited talk at Knowledge, Discovery and Dissemination Symposium, McLean, VA, 2004

Invited talk at INFORMS Special Session on Diagnosis Models for Port of Entry Inspections, San Francisco, November 2005

Invited talk at Knowledge, Discovery and Dissemination Symposium, McLean, VA, 2005

US-China Computer Science Leadership Summit, Beijing, China, May 2006

Invited talk at Knowledge, Discovery and Dissemination Symposium, McLean, VA, 2006

Talk at Conference on Probabilistic Combinatorics & Algorithms: a Conference in Honor of Joel Spencer's 60th Birthday, April 2006

Invited talk at DHS Workshop on Consequence Modeling, March 2007

Invited panelist at DHS University Programs Summit, Washington, DC, March 2007

Talk at Advanced Study Institute on Mathematical Modeling of Infectious Diseases of Africa, at African Institute for Mathematical Sciences, Muizenberg, South Africa, June 2007

Talk at Workshop on Puzzling Mathematics and Mathematical Puzzles: A Gathering in Honor of Peter Winkler's 60th Birthday, Rutgers, June 2007

Invited Talk at National Visual Analytics Consortium Meeting, Pacific Northwest National Labs, November 2007

Talk at Domestic Nuclear Detection Academic Research Initiative Conference, April 2008

Talk at DIMACS Workshop on New Directions in Algorithms, Combinatorics and Optimization: A Conference Honoring the 65th Birthday of William T. Trotter, Georgia Tech, May 2008

REU Seminar, DIMACS, June 2008

Invited talk on modeling the impat of policy options at Workshop on Modeling the Impact of Policy Options during Public Health Crisis, Banff International Research Station, July 2008

Invited talk on climate and disease at Workshop on Modeling the Impact of Policy Options during Public Health Crisis, Banff International Research Station, July 2008

Response Talk at Workshop on Algorithmic Decision Theory, University of Paris-Dauphine, October 2008

Workshop on Port Security/Safety, Inspection, Risk Analysis and Modeling, Rutgers, November 2008

Workshop on Mathematical Science Methods to Enhance Nuclear Detection, Rutgers, November 2008

Invited talk at Workshop on Boolean and Pseudo-Boolean Functions in Memory of Peter L. Hammer, January 2009

Talk at Domestic Nuclear Detection Academic Research Initiative Conference, April 2009

REU Seminar, DIMACS, June 2009

Invited talk at Visual Analytics Community (VAC) Consortium Meeting, University of Maryland, August 2009

Invited talk at International Conference on Stochastic Modeling and Optimization Dedicated

to the 80th Birthday of Andras Prekopa, November 2009

Invited talk at Kickoff Conference for DHS Center for Visual Analytics for Command, Control, and Interoperability Environments (VACCINE), Purdue University, November 2009

Talk at NJ Office of Homeland Security and Preparedness, Hamilton, NJ, January 2010

Invited talk at Department of Homeland Security University Network Summit, Washington, DC, March 2010

Talk at Domestic Nuclear Detection Academic Research Initiative Conference, April 2010

Talk at New York City Police Department, April 2010

REU Seminar, DIMACS, June 2010

Invited talk at Advanced Study Institute on Conservtion Biology, Southern African Wildlife College, Hoedspruit, Limpopo, South Africa, August 2010

Invited talk at US Coast Guard Research and Development Center, New London, CT, September 2010

Talk at New York City Police Department, November 2010

Invited talk at DHS University Programs Summit, Washington, DC, March 2011

Talk at Domestic Nuclear Detection Academic Research Initiative Conference, April 2011

Invited talk at Visual Analytics Community (VAC) Consortium Meeting, University of Maryland, May 2011

Invited talk at Technologies for Incident Preparedness Conference, National Harbor, MD, September 2011

Invited talk at Workshop on Effective Engagement and Collaboration of US CISE-China Researchers, Arlington, VA, May 2011

Invited talk at Workshop on Information and Communication Technologies for Sustainability, held in Conjunction with IEEE SECON 2011, Sal Lake City, June 2011

Invited talk at Maritime Risk Symposium, Rutgers, November 2011

Invited talk at 10 Years Later: A National Conference on Preparedness and Response, New Brunswick, NJ, December 2011

Talk at Domestic Nuclear Detection Academic Research Initiative Conference, July 2012

Invited Talk at Immigration and Customs Enforcement, Washington, DC, October 2012

Invited talk at DHS Office of Strategic Planning, Analysis, and Risk, October 2012

Invited talk at Special Session Mathematics of Planet Earth: Energy, Population, Sustainability, at Joint Mathematics Meetings, San Diego, CA, January 2013

Talk at Third International Conference on Algorithmic Decision Theory, Brussels, Belgium, November 2013

Invited panel talk at National Strategic Maritime Risk Conference, Purdue University, November 2013

Invited talk at American Mathematical Society Special Session on My Favorite Graph Theory Conjectures, Baltimore, MD, January 2014

Invited talk at MPE2013+ Workshop: Challenges and Opportunities, Arizona State University, January 2014

Invited panel talk at Conference on Cyber/Homeland Security - Opportunities for U.S.-Israel Partnerships, New Jersey Inst. of Technology, January 2014

Invited talk at Fusion Fest: Marrying Methods to Solve Real-world Problems, Rutgers University, October 2014

Invited panel talk at CREATE-TSA Summer Symposium, University of Southern California, July 2015

Talk at International Conference on Information, Intelligence, Systems and Applications, 1st International Workshop on Modeling, Computing and Data Handling for Marine Transportation, Corfu, Greece, July 2015

Invited talk at INFORMS National Meeting, Philadelphia, November 2015

Opening talk at Workshop on Modeling of Infectious Disease with a Focus on Ebola, Dakar, Senegal, March 2016.

Invited panel talk at Opportunities for U.S.-Israel Technology Partnerships for Advancing Innovation for First Responders & Homeland Security, NJIT, January 2016

Invited talk to Rutgers College Class of 1961, Rutgers Day, April 2016

Contributed paper at 2016 IEEE International Symposium on Technologies for Homeland Security, Boston, May 2016, winner of best paper award.

Invited talk to Summit Old Guard, September 2016.

Invited presentation (given by others for me) at Cyber Security Conference at NATO Maritime Interdiction Operational Training Centre (NMIOTC), Souda Bay, Crete, October 2016.

Opening talk at Workshop on Chesapeake Fisheries: From Oysters to Economics, Morgan State University Pearl Lab, Saint Leonard, MD, August 2017.

Invited talk at US Coast Guard Sector Long Island Sound in Cyber Security Workshop, Niantic, CT, December 2017.

Opening talk at Workshop on Mathematics of Planet Earth: The Future, DIMACS, July 2018.

Opening talk at Workshop on Automated Biometric Identification of Individual Cheetahs and Leopards, Duke University, August 2018.

Invited talk at session on Risk Analysis for Uncertain Futures at Society for Risk Analysis Annual Meeting, New Orleans, December 2018.

Invited talk (given by others for me) at session on Uncertain Futures at Society for Benefit Cost Analysis Annual Meeting, Washington, DC, March 2019.

Misc. seminar talks at:
Bell Labs*, Columbia, Cornell*, CUNY*, Dartmouth*, DIMACS*, Duke, Educational Testing Service, Fordham, IBM, Ithaca College, Los Alamos National Laboratory, Miami University, Montclair State College, National Telecommunications and Information Administration, Northeastern*, Orange Coast College, Princeton*, RAND Corp.*, Rutgers*, Stanford*, Stevens, Stony Brook*, Telcordia Technologies, UC Berkeley, UC Irvine, UCLA*, UC Riverside, Waterloo
 (* indicates more than once)

Departmental or School-Wide Colloquia or Seminars:
1967-68	Dartmouth
1968-69	Dartmouth
1969-70	Cornell, Dartmouth
1971-72	Binghamton, Cornell, Dartmouth, Denver
1972-73	Baylor, Cornell, MIT, Texas
1973-74	Cornell, Gettysburg, Hunter, Lawrence, Montclair State, North Carolina State, Rutgers (Math), Rutgers (Computer Science), Seton Hall

1974-75   Adelphi, Colby, Cornell, Franklin and Marshall, Johns Hopkins, Miami of Ohio,
          Tennessee, Vanderbilt, Villanova, Virginia Tech., Wesley, Westinghouse
          Research Labs, Wilkes
1975-76   Connecticut, Salisbury State, Swarthmore, Union, Vassar, Wisconsin (Stevens
          Point), Western Carolina
1976-77   Bowling Green, Colgate, General Motors Res. Labs., Manhattan, Montclair State
1977-78   Harvard, North Carolina State
1978-79   Lehigh, Rider
1979-80   Bell Labs, Cornell, Exxon
1980-81   Hunter, Miami of Ohio, Rutgers (Indus. Engr.)
1981-82   The Citadel, Clemson, Mitre Corporation, Northeastern, South Carolina
1982-83   Rutgers (Operations Research)
1983-84   Lausanne, Missouri, Stevens, Wesleyan
1984-85   Aachen, Bonn, Johns Hopkins, McPherson, University of CA/Irvine, Rutgers
          (Industrial Engineering), East China Normal University (Shanghai, China),
          Beijing Institute of Tech (China)
1985-86   Rutgers (Operations Research)
1986-87   Free University of Brussels, Hartford, Maine
1987-88   Colorado (Denver), Miami University, Worcester Poly
1988-89   Glassboro State, Johns Hopkins, Supercomputing Research Center, Wright State
1989-90   Dickinson, Fordham, Northeastern, University of Puerto Rico, Williams
1990-91   Dartmouth, Waterloo, Xavier (New Orleans)
1991-92   Seton Hall
1992-93   Pittsburgh, Tennessee
1993-94   University of Colorado (Denver), Dartmouth, GERAD (University of Montreal)
1994-95   Louisville
1995-96   Kyung-Hee University (Seoul, S. Korea), Pohang Inst. of Science and
          Technology (Pohang, S. Korea), Dartmouth
1996-97   College of Staten Island (CUNY)
1997-98   Fordham, Jawaharlal Nehru University (Delhi, India)
1999-00   DIMATIA (Charles University, Prague, Czech Rep.), Indiana University of
          Pennsylvania, Cheju National University (Cheju Island, Korea), Kyung-Hee
          University (Seoul, Korea), Seoul National University (Seoul, Korea)
2001-01   Illinois Institute of Technology, South Carolina
2001-02   Dartmouth, University of Greenwich (UK), University of Michigan, National
          Taiwan University
2002-03   Colgate, Montclair State
2003-04   RPI
2004-05   Lawrence Livermore National Laboratory
2005-06   Trinity, Xi'An Xiaotong (China)
2007-08   Department of Homeland Security, Seton Hall
2008-09   Los Alamos National Lab
2009-10   Pacific Northwest National Lab
2013-14   West Chester University
2014-15   University of Texas – San Antonio
2017-18   Drew University

2018-19   RPI

Professsional Activities:

Advisory Boards:
    1992-00:   External Advisory Board, Center for Theoretical Studies in the Physical Sciences, NSF Minority Excellence Center at Clark Atlanta University
    2003-06:   Chair, Advisory Committee, NSF Office of International Science and Engineering
    2003...:   Representative to NJ State Regional Homeland Security Technology Council
    2004-07:   Advisory Committee, NJ Department of Homeland Security Center for Biological, Radiological, Nuclear, and Environmental (CBRNE) Training
    2006...:   Member, State of New Jersey Health Emergency Preparedness Advisory Council
    2007-10:   Co-Chair, NJ Office of Homeland Security and Preparedness (OHSP) Preparedness College
    2009-12:   Member, NSF Mathematical and Physical Sciences Advisory Committee
    2010-12:   Member, NSF Advisory Committee for Environmental Research and Education
    2011-17:   Member, Scientific Advisory Committee to International Institute for Applied Systems Analysis
    2012...:   Member, Board on Mathematical Sciences and Applications, National Academy of Sciences

Member of:
American Mathematical Society (AMS)
Consortium for Mathematics and its Applications (COMAP)
Mathematical Association of America (MAA)
Institute for Operations Research and Management Science (INFORMS)
Society for Industrial and Applied Mathematics (SIAM)
Society for Mathematical Psychology
Classification Society of North America
Association for Computing Machinery (ACM), Special Interest Group in Algorithms and Computational Theory (SIGACT)
Association for Women in Mathematics
Society for Mathematical Biology

Editorships:
Editor, SIAM Review, 1972-1979
Editor, special issue of SIAM Jour. on Applied Math., Sept., 1975
Associate Editoriate SIAM Jour. on Applied Math., 1975-1983
Editorial Board, Encyclopedia of Math and its Applications, 1975-1983
Editorial Board, Discrete Applied Mathematics, 1978 ...
Advisory Editor and Editorial Board, Jour. of Math. Social Sciences, 1979-1997
Editorial Board, Mathematical and Computer Modelling, 1979-2014
Editorial Board, SIAM Journal on Algebraic & Discrete Methods, 1980-1987
Editorial Board, Marcel Dekker Series in Pure and Applied Mathematics, 1980-1986
Editorial Board, Annals of Operations Research, 1983 ...

Editorial Board., Journal of Mathematical Psychology, 1986 ...
Editorial Board, SIAM Journal on Discrete Mathematics, 1987-1997
Editorial Board, Journal of Combinatorics, Information, and Systems Science, 1990 ...
Editorial Board, Journal of Computational Biology, 1993 ...
Advisory Editorial Board, CRC Handbook of Discrete and Combinatorial Mathematics, 1993-1999
Editorial Board, Discrete Mathematics, Algorithms and Applications, 2009 ...
Advisory Board, Computational Social Networks, 2013 ...

Positions in Professional Societies:
1977-81:	Secretary of SIAM
1980...:	Member, COMAP (formerly UMAP) Consortium Council
1981:	Candidate for President of SIAM
1981-82:	Member, CBMS Council
1982:	Candidate for SIAM Board of Trustees
1983-92:	Member, Board of Directors of SIMS (formerly SIAM Institute for Mathematics and Society; now Societal Institute for the Mathematical Sciences)
1984-87:	Vice President of SIAM
1987:	Candidate for SIAM Board of Trustees
1987-92:	Secretary of SIAM Institute for Mathematics and Society (SIMS)

Other Activities for Professional Societies:
1976-81:	Member, Committee on the Undergraduate Program, MAA
1976-80:	Member, CUPM Panel on a General Mathematical Sciences Program
1979-81:	Chairman, MAA-SIAM Committee on Applications of Mathematics in the College Curriculum
1979-80:	Member, SIAM Education Committee
1982-84:	Member, SIAM Program Committee
1982-85:	Chairman, SIAM Committee on Relations with the Federal Government
1984-87:	Chairman, SIAM Major Awards Committee
1984-86:	Member, Steering Committee, SIAM Activity Group in Discrete Mathematics
1986-90:	Member, SIAM Committee on Science Policy
1988:	Member, SIAM Nominating Committee
1990-92:	Member, AMS Committee on Cooperative Symposia
1993:	AMS Representative to Organizing Committee for International Conference on Ordinal Data Analysis
1997:	Member, AMS/AAAS Liaison Committee
2000...:	Member, SIAM Committee on Science Policy
2006-08:	Member, AMS Science Policy Committee
2002-03:	ACM/SIGACT Distinguished Service Award Prize Committee

"Special Focus Programs" Organized:
1993-00:	DIMACS "Special Year" on Mathematical Support for Molecular Biology, Chair of Organizing Committee

1999-03:	DIMACS Special Focus on Computational Molecular Biology, member of Organizing Committee
2002-10:	DIMACS Special Focus on Computational and Mathematical Epidemiology, Chair of Organizing Committee
2004-08:	DIMACS Special Focus on Computation and the Socio-Economic Sciences, co-Chair of organizing committee
2004-10:	DIMACS Special Focus on Information Processing in Biology, Chair of Organizing Committee
2006-12:	DIMACS/MBI African BioMathematics Initiative, Chair of Organizing Committee
2010-13:	DIMACS Special Focus on Algorithmic Decision Theory, Chair of Organizing Committee
2012-15:	DIMACS Special Focus on Energy and Algorithms, Organizing Committee
2012-18:	Mathematics of Planet Earth 2013+, Chair of Organizing Committee
2013:	Mathematics of Planet Earth, Organizing Committee

Conferences Organized:

1974:	Program Committee, SIAM Annual Meeting
1975:	Conference Chairman, SIMS Res. Applications Conference on Mathematics and Energy
1977:	Program Chairman, SIAM 25th Anniversary Meeting
1978:	Program Committee, SIAM Fall Meeting
1978:	Symposium Chairman, IGT Symposium on Energy Modeling and Net Energy Analysis
1979:	Symposium Chairman, IGT Symposium on Energy Modeling II
1979-81:	Member, Steering Committee, Environmetrics '81
1980:	Symposium Chairman, IGT Symposium on Energy Modeling III
1981:	Symposium Chairman, SIAM Symposium on Applications of Discrete Mathematics
1981-82:	Symposium Chairman, IGT Symposium on Energy Modeling IV
1982-83:	Symposium Chairman, Second SIAM Symposium on Applications of Discrete Mathematics
1984-86:	Conference Co-Chairman, Third SIAM Conference on Applications of Discrete Mathematics
1985:	Program Committee, Graph Theory Day X
1985:	Organizer of Minisymposium on Applications of Discrete Mathematics to Problems of Society, SIAM National Meeting
1985-86:	Organizer, Advanced Research Institute on Discrete Applied Mathematics, Rutgers University
1986...:	Program Chairman, Workshop on Applications of Combinatorics and Graph Theory in the Biological and Social Sciences, Institute for Mathematics & its Applications, University of Minnesota
1986-87:	Organizer, Second Advanced Research Institute on Discrete Applied Mathematics, Rutgers University
1987:	International Advisory Committee, First International Conference on Creative Studies, Shanghai, 1987.

1987-88:   Organizer, Third Advanced Research Institute on Discrete Applied
                 Mathematics, Rutgers University
1988-89:   Organizer, Fourth Advanced Research Institute on Discrete Applied
                 Mathematics, Rutgers University
1988-90:   Program Committee, First Alaska Graph Theory Conference: Quo Vadis
                 Graph Theory
1989:   Co-Organizer, DIMACS Workshop on Reliability of Computer and
                 Communication Networks, Rutgers University
1989-90:   Organizer, Fifth Advanced Research Institute on Discrete Applied
                 Mathematics
1990-91:   Organizer, Sixth Advanced Research Institute on Discrete Applied
                 Mathematics
1990-91:   Organizer, Workshop on Graph Labellings, Northeastern University
1991:   Organizer, Genome Day, DIMACS
1991-92:   Organizer, Seventh Advanced Research Institute on Discrete Applied
                 Mathematics
1992-93:   Consulting Organizer, Conference on Graduate Programs in the Applied
                 Mathematical Sciences, Clemson University, Clemson, SC
1993:   Organizing Committee, International Conference on Ordinal Data Analysis,
                 Amherst, Massachusetts
1996:   Organizing Committee, DIMACS workshop on Mathematical Hierarchies
                 and Biology
1996-97:   Organizing Committee, DIMACS/DIMATIA Conference on the Future of
                 Discrete Mathematics, Stirin Castle, Czech Republic
1996-98:   Organizing Committee, Conference on Combinatorial and Global
                 Optimization, Chania, Greece
1997:   Organizing Committee, DIMACS Workshop on Mathematical Hierarchies
                 and Biology
1998:   Organizing Committee, Hong Kong University of Science and Technology
                 DIMACS Far-East Workshop on Algorithms and Combinatorics, Hong
                 Kong, 1998
1998:   Organizing Committee, International Conference on Combinatorics
                 Statistics, Pattern Recognition, and Related Areas, Mysore, India
1998:   Organizing Committee, DIMACS Workshop on Combinatorial Clustering
                 and Multi-domain Protein Structure
1998:   Organizing Committee, DIMACS Workshop on Advances and Opportunities
                 at the Biology-Math-Computation-Physical Sciences Interface
1998:   Chair, A Celebration of DIMACS (DIMACS' 10th Anniversary Meeting)
1999:   Organizing Committee, DIMACS Miniworkshop on Mathematical and
                 Computational Approaches to Elections
1999-00:   Organizing Committee, International Conference on Ordinal and Symbolic
                 Data Analysis, Brussels, Belgium
2000:   Organizing Committee, DIMACS Workshop on Bioconsensus
2000:   Organizing Committee, DIMACS Workshop on Policy-driven Decision
                 Making and Dynamic Interoperability
2001:   Organizing Committee, DIMACS Workshop on Integration of Diverse

	Biological Data
2001:	Organizing Committee, DIMACS Workshop on Bioconsensus II
2001-02:	Organizing Committee, DIMACS-National Chiao Tung University Conference on Interconnections among Codes, Designs, Graphs and Molecular Biology, Hsinchu, Taiwan
2001-02:	Organizer, Short Course: A Sampling of Applications of Graph Theory
2005:	Organizer, DIMACS-DIMATIA-Renyi Working Group Meeting on Graph Coloring and their Generalizations, Budapest
2005:	Organizing Committee, Governor Codey's School Security Summit, Rutgers University
2005-06:	Scientific Committee for Program on National Defense and Homeland Security, SAMSI (Statistical and Applied Mathematical Sciences Institute)
2005:	DIMACS Working Group on DNA and the Barcode of Life
2005:	DIMACS Epidemiology Minisymposium
2005:	Conference on Linking Mathematics and Biology in the High Schools, DIMACS
2006:	Experimental Analysis of Algorithms: Interfaces between Statistics and Computer Science, DIMACS
2006:	Workshop on Computational Optimization and Logistics Challenges in the Enterprise, Exxon-Mobil Research and Engineering, Annandale, NJ
2006:	DIMACS DIMATIA Renyi Combinatorial Challenges Meeting
2006:	The DNA Barcode Data Analysis Initiative (DBDAI): Developing Tools for a New Generation of Biodiversity Data, Paris
2006:	New Jersey Universities Homeland Security Research Consortium Symposium, Fairleigh Dickinson University
2006:	US-China Computer Science Leadership Summit, Beijing, China
2006:	Chair, DIMACS/AIMS/SACEMA Workshop on Facing the Challenge of Infectious Diseases in Africa: The Role of Mathematical Modeling, Johannesburg, South Africa
2006:	New Jersey Universities Homeland Security Research Consortium Symposium, Rutgers University
2006:	DIMACS/LAMSADE Workshop on Voting Theory and Preference Modeling Universite of Paris – Dauphine
2007:	Chair, DHS Center for Dynamic Data Analysis Kickoff Conference, Rutgers
2007:	Meeting Co-Chair, IEEE Conference on Intelligence and Security Informatics, New Brunswick, NJ
2007:	Chair, DIMACS/AIMS/SACEMA Advanced Study Institute and Workshop on Mathematical Modeling of Infectious Diseases of Africa, Cape Town and Stellenbosch, South Africa
2007:	Organizer, DIMACS Workshop on Recent Advances in Mathematics and Information Sciences for Analysis and Understanding of Massive and Diverse Sources of Data, Rutgers
2007:	Organizer, Workshop on The Mathematics of Homeland Security: Topics for High School Teachers, Department of Homeland Security Center of Excellence for Dynamic Data Analysis, Rutgers University
2007:	Organizer, DIMACS Bio-Math Connection (BMC) Field Testers Workshop

	(Computational Biology), Rutgers
2007:	Organizer, Reconnect Conference on Data Analysis and Law Enforcement, Rutgers
2007:	Organizing Committee, Symposium: The State of the Art in the Decision Sciences Location, University of Luxembourg
2007:	Organizer, Mini Symposium on Discrete Science Applications in Homeland Security, Department. of Homeland Security Center of Excellence for Dynamic Data Analysis, Rutgers University
2008:	Organizer, US-Africa Advanced Study Institute on Mathematical Modeling of Infectious Diseases in Africa, African Institute for Mathematical Sciences, Muizenberg, South Africa
2008:	Organizer, Reconnect Conference on Mathematical Methods in Biosurveillance, Rutgers
2008:	Organizer, Second US-China Computer Science Leadership Summit, Arlington, VA
2008:	Organizer, DIMACS Bio-Math Connection (BMC) Field Testers Workshop (Epidemiology)
2008:	Organizing Committee, Workshop on Modeling the Impact of Policy Options during Public Health Crises, Banff International Research Station
2008:	Organizer, Workshop on Algorithmic Decision Theory, University of Paris-Dauphine
2008:	Organizer, Workshop on Port Security/Safety, Inspection, Risk Analysis and Modeling, Rutgers
2008:	Workshop on Mathematical Science Methods to Enhance Nuclear Detection, Rutgers
2008:	Organizing Committee, Eighth New Jersey Universities Homeland Security Research Consortium Symposium Homeland Security: From Face Recognition to Disease Detection, Natural Disasters to Transit Security, Princeton University
2009:	Organizer, DIMACS/CINJ BioMedical Informatics Summit, The Cancer Institute of NJ (CINJ), New Brunswick, NJ
2009:	Organizing Committee, Clinic on Meaningful Modeling of Biological Data, African Institute for Mathematical Sciences
2009:	Organizer, DIMACS Bio-Math Connection (BMC) Field Testers Workshop (Ecology and Population Biology), Rutgers
2009:	Organizer, Advanced Study Institute and Workshop on Economic Epidemiology, Makerere University, Kampala, Uganda
2009:	Organizer, Reconnect Conference on Visual Analytics and Applications, Rutgers
2009:	Organizing Committee, International Conference on Algorithmic Decision Theory, Venice
2009:	Organizer, DIMACS 20th Birthday Conference, Rutgers
2010:	Organizing Committee, Miniworkshop on Algorithms and Energy, Rutgers
2010:	Chair, Third US-China Computer Science Leadership Summit, Beijing, China
2010:	Organizing Committee, DIMACS/MBI Clinic on Meaningful Modeling of

	Epidemiological Data, Muizenberg, South Africa
2010:	Chair, CCICADA Kickoff Conference, Rutgers
2010:	Chair, DIMACS/MBI Advanced Study Institute and Workshop on Conservation Biology, Southern African Wildlife College, Hoedspruit, Limpopo, South Africa
2010:	Chair, Conference on Mathematical Challenges for Sustainability, Rutgers
2010:	Co-Chair, Workshop on Evidence-based Policy Making, University of Paris Dauphine
2011:	Organizing Committee, Advanced Study Institute on Conservation Biology, Kenya Wildlife Service Training Institute, Naivasha, Kenya
2011:	Chair, US-China Computer Workshop on Collaborations in CS and Sustainability, Rutgers
2011:	Co-Chair, DIMACS Sustainable Planet Education Program Workshop, Rutgers
2011:	Co-Chair, International Conference on Algorithmic Decision Theory, Rutgers
2011:	Organizing Committee, DIMACS/MBI Workshop on Genetics and Disease Control, Elmina, Ghana
2011:	Co-Chair, Workshop on Smart Cities, University of Paris-Dauphine
2011:	Organizing Committee, Maritime Risk Symposium – Developing Public-Private Partnerships in Homeland Security: How Risk Impacts Government Policy and Business Requirements, Rutgers
2012:	Chair, DIMACS/MBI Workshop on Quantitative Landscape Ecology and Environmental Sustainability, University of Kwa-Zulu-Natal, Durban, South Africa
2012:	Organizing Committee, Workshop on Algorithmic Aspects of Information Fusion, Rutgers
2012:	Steering Committee, Maritime Risk Symposium: Reducing Costs and Increasing Effectiveness in the Maritime Environment, University of Southern California, Los Angeles
2014:	Workshop Introducing Topics of Mathematics of Planet Earth 2013+, Arizona State University
2014:	Organizing Committee Mathematics of Planet Earth 2013+ Workshop on Sustainable Human Environments, Rutgers
2015:	Organizing Committee, Mathematics of Planet Earth 2013+ Workshop on Data-Aware Energy Use, UC San Diego
	2015:Organizing Committee, Mathematics of Planet Earth 2013+ Workshop on Global Change, UC Berkeley
2015:	Organizing Committee, Mathematics of Planet Earth 2013+ Workshop on Natural Disasters, Georgia Tech
2015:	Organizing Committee, Mathematics of Planet Earth 2013+ Workshop on Management of Natural Resources, Howard University
2015:	Organizing Committee, Mathematics of Planet Earth 2013+ Workshop on Education for the Planet Earth of Tomorrow, University of Tennessee
2015:	Organizing Committee, International Workshop on Citizens Science, University of Paris-Dauphine

2015:	Chair, Learning Seminar and Symposium on Maritime Cyber Security, Rutgers
2015:	Research Chair, Maritime Cyber Research Summit, Cal Maritime
2015-16:	Research Chair, Research Working Group on Maritime Cyber Security, Port of Long Beach, CA
2015-16:	Research Chair, Research Working Group on Maritime Cyber Security, University of Southern California
2015-16:	Co-chair, International Workshop on Modeling of Infectious Diseases, with a Focus on Ebola, Dakar, Senegal
2016:	Organizing Committee, A Conversation on Venue Security After Paris, MetLife Stadium, NJ
2016:	Organizing Committee, Workshop on Zika, UC Berkeley
2016:	Planning Committee, Maritime Risk Symposium, University of North Carolina
2016:	Research Chair, Research Working Group on Maritime Cyber Security, University of North Carolina
2017:	Organizing Committee, Workshop on Chesapeake Fisheries: From Oysters to Economics, Morgan State University PEARL Lab, Saint Leonard, MD
2016-17:	Planning Committee, Maritime Risk Symposium, Tiffin University
2017:	Advisory Committee, Workshop on Social Responsibility of Algorithms, University of Paris-Dauphine
2017-18:	Organizer and Research Chair, Research Working Group on Maritime Cyber Security, DIMACS, Rutgers University
2017-18:	Planning Committee, Maritime Risk Symposium, Oak Ridge National Laboratory
2018:	Organizer, Workshop on Maritime Cyber Security: Coast Guard/University Research Initiative, CCICADA, Rutgers University
2018:	Organizer, Workshop on Mathematics of Planet Earth: The Future, DIMACS, Rutgers University
2018	Organizing Committee, Workshop on Automated Biometric Identification of Individual Cheetahs and Lions, Duke University
2018	Organizing Committee, Workshop on Drones for Safety and Security: A New Agenda, Rutgers
2018-19:	Planning Committee, Maritime Risk Symposium, SUNY Maritime

Miscellaneous Professional Activities:

1974-76:	SIAM Lecturer
1975:	Outside Evaluation Committee, Mathematics Department, Allegheny College
1975:	Outside Evaluation Committee, Program in Math and the Social Sciences, Dartmouth College
1976:	Participant, MAA Workshop on Applied Math Modules, Cornell University
1976...:	Member, MAA Consultant's Bureau
1977-78:	Oversight Committee, NSF-RANN Project on Structural Models of Technology Assessment
1979-81:	Member, State Energy Models Tech. Committee, Colorado School of Mines Research Institute

1980:	Outside Evaluation Committee, Mathematics Department, SUNY/Plattsburgh
1982:	Outside Evaluator, State University College at Buffalo
1983:	Outside Member, Ph.D. Committee at New York University
1984:	Member, Office of Naval Research Review Panel on Research Options
1984...:	Member, Steering Committee, Mathematical Competition in Modeling
1985-87:	Member, Committee on Applications of Mathematics, National Research Council
1985:	Outside Evaluation Committee, Mathematics Department, Colgate University
1985:	Outside Evaluation Committee, Computer Science Department, Hunter College
1986:	Board of Visitors, Office of Naval Research Advisory Board
1987:	Consultant visit to University of Hartford
1988:	Board of Visitors, Office of Naval Research Advisory Board
1991:	Committee of Visitors, Instructional Materials Development Program, National Science Foundation
1991-95:	Visiting Lecturers Panel, MAA
1991:	Member, National Science Foundation Review Panel on Statewide Initiatives in Science, Mathematics, and Engineering Education
1992...:	External Advisory Board, Center for Theoretical Studies in the Physical Sciences, NSF Minority Excellence Center at Clark Atlanta University
1992:	Chair of NSF Panel on the Role of Faculty from the Mathematical Science Disciplines in the Undergraduate Education of Science and Mathematics Teacher
1993:	Committee of Visitors, Office of Special Projects, Division of Mathematical Sciences, NSF
1993:	Co-Chair, External Review Committee, Graduate Program in the Mathematical Sciences, Clemson University, Clemson, SC
1993-97:	Member, Working Group in Discrete Mathematics (Advisory Group for Discrete Mathematics in the Schools)
1994:	NSF Panel on Instructional Materials Development
1994:	Co-chair, External Review Committee, Department of Mathematics, University of Colorado, Denver
1994:	Committee of Visitors, Instructional Materials Development Program, Division of Elementary, Secondary, and Informal Science Education, NSF
1999:	Senior Researcher and Panel Organizer, NSF Career PI Meeting
2001:	Participant, NSF International REU Best Practices Workshop
2002:	Participant, NIH Consultation on Smallpox Modeling
2002:	Participant, Secretary of HHS Emergency Preparedness Modeling Group
2003:	Participant, NSF-NIH Symposium on Math-Biology Linkages
2003:	Participant, NIH Models of Infectious Disease Agents Study Review Committee, 2003
2003:	Participant in Conference on Mathematical Modeling of Spread of Agricultural Bioterrorism Agents, MITRE Corporation, McLean, VA
2003:	Panelist at NIH BISTI (Biomedical Information Science and Technology Initiative) Symposium: Digital Biology: The Emerging Paradigm, Bethesda, MD

2003...: Representative to NJ State Regional Homeland Security Technology Council
2004: Invited participant at ASA/INFORMS Workshop on OR-Stat, Santa Fe, NM
2004...: Co-Chair, New Jersey Universities Homeland Security Research Consortium
2004...: Steering Committee, Rapid Response Institute, Monmouth University
2005: Invited participant: AFMIC, ITIC, DHS Conference on Avian Influenza: Threat to Homeland Security, Chantilly, VA
2006: Leader, National Science Foundation-CISE US Computer Science Leadership Delegation to China
2006...: Member, State of New Jersey Domestic Security Preparedness Planning Group
2007: Invited participant, Center for Disease Control (CDC) Preparedness Modeling Conference, Atlanta, GA
2011-12: Chair NSF Mathematical and Physical Sciences Advisory Committee Subcommittee on Name of Division of Mathematical Sciences
2012-15: Co-Chair, NSF Committee on Support for the Statistical Sciences at NSF
2014-16: Member, Science and Technology Project Management Committee, NJ Office of Homeland Security and Preparedness
2016: Chair, Panel to Evaluate NSF STC Applications
2016: Delegate to Next Einstein Forum, Dakar, Senegal
2016: Lecture at NSF meeting of directors of new STCs on running an STC
2018: International Selection Committee for AIMS-Canada Climate Change Science Chairs
2019: Participant in Meeting: Rencontres Initiative Planete A, Quebec
2019: Participant in Meeting: Sustainability in the Digital Age: Resilience Facing Global Challenges

Educational Programs Organized:
1989...: Organizer and Lecturer, DIMACS Leadership Program (high school teachers, later K-8)
1989...: Organizer and Lecturer, DIMACS Young Scholars Program (high school students)
1992-11: Director, DIMACS Research Experiences for Undergraduates International REU Program
1996-99: Director, DIMACS Research and Education Institute (DREI) (researchers plus high school teachers), Director
1998...: Director, Reconnect Program for College Faculty (after 2009 Assistant Director)
1999...: DIMACS Educational Modules Series
2000-04: Director, DIMACS Connect Institute (DCI) (researchers plus high school teachers)
2004-07: Director, DIMACS BioMath Connect Institute (researchers plus high school teachers)
2006…: Director, DyDAn and CCICADA Research Experiences for Undergraduates Program
2006-12: Director, DIMACS BioMath Connection (modules for high schools)
2010-14: Director, DIMACS Program on Integrating Mathematics and Biology

(modules, a course, and a book for high schools)

2011-13: Co-Chair, DIMACS Sustainable Planet Education Program: One Day Sustainability Modules for Mathematics Classes

Selected Homeland Security Research Programs Directed:

2007-10: A Decision Logic Approach to the Port of Entry Inspection Problem, supported by NSF and ONR

2007-10: Enhancing Force Deployment in Law Enforcement and Counter-terrorism Using Data Analytics, with Port Authority of New York/New Jersey

2007-12: Sensor Management for Nuclear Detection, supported by Domestic Nuclear Detection Office (DNDO)

2010-11: Stadium Evacuation Analysis Project, DHS

2010-12: Urban Commerce and Security Study for DHS Office of University Programs

2011: Development of Smart Phone Apps that Connect to the Incident Command Function of the Hippocrates Situational Awareness System, NJ Department Of Health and Senior Services

2011-12: Using Social Media for Alerts and Warnings, for DHS First Responders Group

2011-12: Modeling of Offsite Container Inspection Processes for US Customs and Border Protection (CBP)

2011-12: Fusion Center Data Analysis and Assessment, DHS Office of Intelligence & Analysis

2011-12: Flood Mitigation on the Raritan River, for Federal Emergency Management Agency (FEMA)

2012: Coast Guard Boat Allocation Problem

2012: A Targeted Risk-based Approach to Fisheries Law Enforcement in the First Coast Guard District

2012-14: SAFETY ACT: Best Practices for Stadium Security, for DHS Office of SAFETY Act Implementation

2012-14: Aviation Capability and Capacity Assignment Module (ACCAM), US Coast Guard

2013-14: Unaccompanied Alien Children, ICE, CBP, HHS

2013-15: Metrics for the Southern Border, CBP, US Coast Guard

2013-15: Coast Guard Boat Allocation Problem II: Sharing

2014-15: SAFETY ACT: Metrics for Stadium Security, for DHS Office of SAFETY Act Implementation

2015…: Maritime Cyber Security: with US Coast Guard

2015-...: Identity and Access Management, with Cyber Security Division

2015-16: Government Inspections of Domestic Cargo: Impact and Implications

2015-16: Crowd Simulation for the Port Authority Bus Terminal in New York City

2016-17: Interoperability Tools and Information Sharing Environments, with ODNI

2016-18: SAFETY Act: Economics of Security and Randomization for Large Venue

2018-… Development of an Algorithm for Enhanced Adjudication for Aviation Security Programs: with TSA

Rutgers Activities:

Departmental:

Mathematics Department:
  Applied Math Committee, member since 1972 and chairman 5 terms
  Personnel Planning Committee - various terms
  Undergraduate Committee - various terms
  Graduate Committee, 1984-1986
  Many ad hoc committees

RUTCOR:
  Executive Committee, many terms
  Personnel Committee, many terms
  Admissions Committee, many terms
  Many ad hoc committees

Graduate School of Education:
  Search Committee, Faculty in Mathematics Education, 2000-2003

University-Wide:

Physical Sciences Curriculum Committee, 3 terms
Provost's Committee on School of Business, 1984-1985
Director, Rutgers Center for Operations Research, 1982-1983
Executive Committee, Center for Computer Aids to Industrial Productivity, 1982-1985
Graduate Director, Interdisciplinary Ph.D. Program in OR, 1984-1989
CAIP Review Panel, 1986
University Speakers Bureau, 1988 ...
Representative to Executive Committee, Center for Discrete Mathematics and Theoretical Computer Science, 1988-1993, 1994-1995
Associate Director, Center for Discrete Mathematics and Theoretical Computer Science, 1989-1992
Member, Search Committee for Dean of School of Business, Rutgers Camden, 1989
Member, New Brunswick Faculty Senate Committee on Educational Policy, 1990-1991
Acting Director, Center for Discrete Mathematics and Theoretical Computer Science, 1991, 1992-1993
Member, Faculty Advisory Board, Center for Computer Aids to Industrial Productivity, 1991-2005
Member, Provost's Committee on the National Transit Institute, 1992
Research Advisory Board, 1992-1993, 1993-1994, 1998 ...
University Awards Committee, 1992-1993, 1993-1994
Provost's Committee on Strategic Planning in Continuing Education, 1993
Advisory Committee on Appointments and Promotions to Professor I - Math and

Natural Sciences, Faculty of Arts & Sciences, 1993-1994

Organizer, Ad hoc Interdisciplinary Committee to Update the BioMath Major, 1994-1995

Program Committee for Science and Engineering Resource Center, Phase II (SERC II), 1995-1996

President's Committee on Implementation of the Strategic Plan: Information Science and Related Fields, 1995

Director, Center for Discrete Mathematics and Theoretical Computer Science, 1996-2011; Emeritus Director 2011 ...

Rutgers Council on Governmental Relations, 1996 ...

Participant, Rutgers Delegation to Coalition for National Science Funding, Congressional Display, 1996

Member, Search Committee for Dean of Engineering, 1996-1998

Member, Science Cabinet, 1997-1999

Member, Information Sciences Council/Information Sciences and Technology Council, 1997-2007

Executive Committee, Center for Math, Science and Computer Education (CMSCE), 1999 …

Organizer, Rutgers Delegation to Coalition for National Science Funding, Congressional Display, 2000

Member, High Speed Network Applications Committee, 2000-2001

Presentation on Mathematical Sciences and Bioterrorism to National Issues Subcommittee, Board of Trustees, Rutgers, 2002

Chair, Rutgers University Homeland Security Research Initiative (RUHSRI), 2003...

Coordinator, Rutgers Telecommunications Proposals to NJ Commission on Jobs, Growth, and Economic Development, 2003

Member, Rutgers-Picatinny Arsenal Coordinating Committee, 2003-2005

Faculty Advisor, Rutgers Student University Anti-Terrorism Coalition, 2004-2005

Member, Committee to Evaluate CAIP, 2004

Chair, Research Advisory Board Investigating Committee, 2004-2005

Member, Committee to Evaluate Dean of Arts and Sciences, 2005-2006

Computing Consortium Committee, 2005 ...

Rutgers Representative to Executive Board of University Center for Disaster Preparedness and Emergency Response (a joint activity of Rutgers, University of Medicine and Dentistry of NJ, and Robert Wood Johnson University Hospital), 2006 ...

Chair, Search Committee for Director of Institute of Marine and Coastal Sciences, 2007-2008

Co-Director, Laboratory of Port Security, 2006 ...

Rutgers Discovery Informatics Institute (RDII) Internal Advisory Board, 2015 ...

Chair, Provost's Search Committee for Henry Rutgers Data Science Professorship, 2015-2016

Co-organizer, Vice Chancellor's Ideation Forum, 2018

Member, SAS Committee on Issues Involving AI, Data Science, and Machine Learning, 2019…

Member, Organizing Committee, Initiative on Women in Computer Science, 2019…

Ph.D. Students:

Student	Year of Ph.D.	Current Position
Rochelle Leibowitz	1978	Professor, Wheaton College
Margaret Cozzens	1981	Research Faculty, DIMACS, Rutgers University; formerly President of Colorado Institute of Technology; Provost, University of Colorado-Denver; and Division Director, at NSF
Robert Opsut	1984	Assistant to Surgeon General, US Air Force
Arundhati Raychaudhuri	1985	Professor, College of Staten Island
Suh-ryung Kim	1988	Professor, Seoul National University, Seoul, S. Korea
Barry Tesman	1989	Professor, Dickinson College, holder of the Mathias Chair
Sam Rosenbaum	1990	Instructor, Bard High School Early College
Garth Isaak	1990	Professor and Associate Dean for Research and Graduate Studies, Lehigh University
Chi Wang	1991	Associate Professor, University of Louisville, and New Media Department, J. Walter Thompson, USA, Detroit, MI
Denise Sakai Troxell	1992	Associate Professor, Babson College
Dale Peterson	1995	Faculty, U.S. Air Force Academy
Aleksandar Pekec	1996	Associate Professor, Duke University (School of Business)
Shaoji Xu	1998	Senior SAS Programmer at Allergan
Li Sheng	1998	Associate Professor, Drexel University
Paul Dreyer	2000	Senior mathematicians, RAND Corporation, and Professor of Public Policy at Pardee RAND Graduate School

| Stephen Hartke | 2004 | Associate Professor, University of Colorado, Denver |

Publications:

Books Authored:

1. *Discrete Mathematical Models, with Applications to Social, Biological and Environmental Problems*, Prentice-Hall, Englewood Cliffs, NJ, 1976.

1a. Russian translation of #1, Nauka, Moscow, 1986.

2. *Graph Theory and its Applications to Problems of Society*, NSF-CBMS Monograph #29, SIAM Publications, Philadelphia, 1978.

3. *Measurement Theory, with Applications to Decisionmaking, Utility, and the Social Sciences*, Addison Wesley, Reading, MA, 1979. (Book in the Encyclopedia of Mathematics and its Applications series.)

3a. Digital printing, Cambridge University Press, 2009.

4. *Applied Combinatorics*, Prentice-Hall, Englewood Cliffs, NJ, 1984.

5. *Applied Combinatorics, Second Edition*, (with Barry Tesman), Pearson Prentice Hall, Upper Saddle River, NJ, 2004.

5a. New edition, 2009: Chapman&Hall/CRC, an imprint of Taylor&Francis, including added section with answers to selected exercises, 2009, 860 pages.

5b. Chinese paperback edition (in English), Pearson Education Asia, 2005.

5c. Simplified Chinese edition (in Chinese), Pearson Education Asia and China Machine Press, 2007.

Books Edited:

1. *Energy: Mathematics and Models*, F.S. Roberts (ed.), SIAM Publications, Philadelphia, 1976.

2. *Energy Modeling and Net Energy Analysis*, F.S. Roberts (ed.), Inst. of Gas Technology, Chicago, 1979.

3. *Energy Modeling II: The Interface Between Model Builder and Decision Maker*, F.S. Roberts (ed.), Inst. of Gas Technology, Chicago, 1980.

4. *Energy Modeling III: Dealing with Energy Uncertainty*, F.S. Roberts (ed.), Inst. of Gas Technology, Chicago, 1981.

5. *Energy Modeling IV: Planning for Energy Disruptions*, F.S. Roberts (ed.), Inst. of Gas

Technology, Chicago, 1982.

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