Ioannis (Yannis) N. Miaoulis

Born: July 24, 1961, Athens, Greece, U.S. Citizen
Two Children

Academic Degrees

Ph.D. (Mechanical Engineering)	Tufts University	1987
M.A. (Economics)	Tufts University	1986
M.S.M.E	M.I.T.	1984
B.S.M.E. (summa cum laude)	Tufts University	1983
H.S. Diploma	Athens College/Greece	1980

Honorary Degree

Dr. of Science, State University of New York (SUNY) Polytechnic Institute, 2015

Current Employment

President and Director	Museum of Science (Boston)	2003-present
Director	National Center for Technological Literacy	2003-present

Academic Appointments

Associate Provost (Tufts Univ)		2001-2002
Dean (Tufts Univ.)	School of Engineering	1994-2002
Dean-Interim (Tufts Univ.)	Graduate School of Arts and Sciences	2001
Associate Dean (Tufts Univ.)	School of Engineering	1993-94
Professor (tenured-Tufts Univ.)	Mechanical Engineering	1997- 2002
Associate Professor (tenured-Tufts Univ.)	Mechanical Engineering	1993-97
Assistant Professor (Tufts Univ.)	Mechanical Engineering	1987-93
Visiting Scientist (M.I.T.)	Materials Science	1990-92
Visiting Asst. Prof. (Tufts Univ.)	Mechanical Engineering	1987-spring
Lecturer (Tufts Univ.)	Mechanical Engineering	1984-86
Lecturer (Tufts Univ.)	Experimental College	1985-Fall

Other Major Appointments

National STEM Education Advisory Panel, 2018-
International Space Station National Laboratory (CASIS) Board, Chair of Education Committee
NASA Advisory Committee (NASA Board), 2007-2009
NASA Education and Public Outreach Committee, 2009-2013
Presidential Appointee to the National Board of Museum and Library Services, 2006-2012
Board of Trustees, Tufts University, 2006-2016
Board of Trustees, Wellesley College, 2007-2013
Board of Trustees, WGBH, 2003-2007
National Steering Science Committee for the National Education Assessment Progress, 2005-2006
Lesley University Leadership Council, 2011-

Honors and Awards

Research-related awards

- Outstanding Career Award, Graduate School of Arts and Sciences, Tufts University, 2006
- Outstanding Achievement in Mechanical Engineering Practice Alumni Award, 1997
- Allan MacLeod Cormack Award for Excellence in Collaborative Research, 1995
- Presidential Young Investigator Award, awarded by two divisions (Chemical/ Thermal Systems, and Manufacturing) of the National Science Foundation, 1991
- Sigma Xi, The Scientific Research Society, Member, 1991

- Inventors Association of New England Annual Award, Inventors Weekend, Boston Museum of Science, 1990
- Mellon Grant/Fellowship Recipient for Fall 1990
- S.T.E.P. Award, American Society of Mechanical Engineers, 1984
- A.S.M.E. Regional Student Competition for Best Undergraduate Research Project in New England- First Place, Tufts Representative, 1983
- Tau Beta Pi - Engineering Honor Society, Member
- Burden Prize for Best Engineering Design Project- First Place, 1981
- Sigma Xi Research Award, 1981
- John Vakis Natural Sciences Award, 1980
- Listed in *Who is Who in the World, Who is Who in America*

Education-related awards

- U.S. News STEM Leadership Hall of Fame, 2017
- Philip Hauge Abelson Award, American Association for the Advancement of Science (AAAS), 2016
- ASEE President's Award (jointly with NCTL) recognizing entities that encourage K-12 students to pursue engineering careers and/or influence public opinion and create recognition of the critical role that engineering plays in today's technology, June 2014
- ASME Ralph Coats Roe Medal, recognizing an outstanding contribution toward a better understanding and appreciation of the engineer's worth to contemporary society, June 2011
- The Museum of Science's National Center for Technological Literacy® (NCTL®) in Boston won the "2010 Smaller Business Association of New England (SBANE) Innovation Award." Out of 170 companies, the Museum was one of two non-profits and six companies recognized by SBANE for innovation, growth, stability, and impact.
- Golden Key Honorary Society, Honorary Member, May 1994
- A.S.M.E. "Old Guard" Competition for the Best Undergraduate Research Project in the Nation- First Place, Project Advisor, 1988
- Society of Women Engineers, Best Undergraduate Research Paper Competition- First Place, New England Region; Fourth Place in the Nation, Project Advisor, 1988
- A.S.M.E. Regional Student Competition for Best Undergraduate Research Project in New England- First Place, Project Advisor, 1988
- Lillian Leibner Award for Excellence in Teaching, Nominee of the Mechanical Engineering Department, 1988
- G.T.E. "Engineering Teaching as a Life Choice" grant, 1985
- Lifetime Achievement Award, Alpha Omega Council, Boston, 2018

Community Service-related awards and recognition

- Alpha Omega Life time Achievement Award, 2018
- The 2015 National Science Board Public Service Award (Received on behalf of the Museum of Science, Boston's National Center for Technological Literacy)
- Catalyst Award, Science Club for Girls, 2012
- Fellow, Massachusetts Academy of Sciences, 2010
- NASA's Exceptional Public Service Medal, 2009
- PanCretan Association Annual Award, Boston, 2006
- Distinguished Fellow, Wheaton College, 2004-05
- Retirees School Volunteer Association (RSVA) recognition for enhancement of S.T.E.M. education, October 2004
- "Sophia" Award, Greek Institute, 2004
- Distinguished Alumni Service Award, Tufts University Alumni Association, May 2003
- Outstanding Young Leader Award, Boston Jaycees, June 1999
- Official Citation for Outstanding Contributions to the West Somerville Neighborhood School, Somerville School Committee, May 1997
- William P. Desmond Award for Outstanding Contributions to Public Education, June 1996

- Toastmasters International Community and Leadership Award, March 1995
- Outstanding Contribution in Elementary and Secondary Education Award, Clinton Area Educational Forum, May 1992
- Award for Contributions in Science Education at the Middle School level, Stow S.P.T.O., May 1991

Consulting Activity
National Governors Association
WGBH
Acton Discovery Museums
Dennison Manufacturing Co.
Devonrue Consulting Corp.
Galileo Electro-Optics Corp.
Kopin Corp.
Prentice Hall, Pearson

Research Interests and Activities
PreK-12 Science and Engineering Education
Founder of the Thermal Analysis of Materials Processing Laboratory (T.A.M.P.L.)
Director and founder of the Comparative Biomechanics Laboratory
Microscale Heat Transfer Phenomena
Modelling of Thermal Processing of Electronic and Fiber/Optical Materials
Management of Technology and Innovation
Air Pollution Control
Marine Biomechanics

Teaching Activity (at Tufts University)
Life in Moving Fluids (course originator)
Gourmet Engineering (course originator)
Comparative Biomechanics Laboratory (course originator)
Advanced Heat Transfer
Advanced Heat Conduction (course originator)
Heat Transfer
Project Laboratory
Thermodynamics
Applied Thermodynamics
Management of Technology and Innovation (course originator)
Entrepreneurship (course originator), Marketing (course originator)

Funded Research and Activities (at Tufts University)
"Integrating Algebra and Engineering into the Classroom," GE Foundation, (2002-2005)

"K-12: Distance Learning Program," Lockheed Martin Corp. and Lockheed Martin Foundation (2002-2005)

"Virtual Markets in Wireless Communications and Computational GRIDS," (2003-2005)

"Women in Engineering; Web Site and Electronic Community," G.E. fund (2001-02)

"Creation of an Entrepreneurial Leadership Program," Fidelity Foundation (2000-02)

"Engineering Fellows: a k-12 Resource for Integrating Technology, Mathematics, and Science," National Science Foundation, (1999-02)

" Infrustructure Development for Introducing Engineering into preK-12 Environments," Noyce Foundation (1999-01)

“Girls get SET (Science, Engineering, Technology) for life,” Lucent Technologies Foundation, (1999-02)

“REU Site: Thermal Analysis of Materials Processing and Manufacturing,” National Science Foundation, (1998-01)

“Microscale Reflectance Spectrometry of Biological Thin Films,” National Science Foundation, (1997-99)

“Development of a Multimedia Laboratory,” Panasonic Corp. (1997)

“Engineering Project Development Center; Equipment Support,” Canon USA Inc. (1997)

“Development of Middle School Science Curricula,” Prentice Hall (1997)

“Development of a Program in Engineering Educational Outreach,” JSM Trust (1997-2001)

“Tufts/RPI Thermal Manufacturing Research-Curriculum Development Program,” National Science Foundation (1997-2001)

“Investigation of Microscale Radiation Phenomena Affecting Thermal Processing of Patterned Wafers,” National Science Foundation, (1996-99)

“Research Experiences for Undergraduates,” National Science Foundation (1997)

“Girls in Engineering: Hands on Museum Exhibit Development for Middle School Students,” National Science Foundation, (1996-98)

“Development of a Minor in Interactive Multimedia,” VIACOM Corp., (1996)

“Creation of the Laboratory for Creative Exploration,” Beveridge Foundation, (1996)

“Women in Engineering Initiative,” NYNEX foundation (1996)
“Teaching Science Through Toys,” Arthur D. Little Foundation (1995)

“Development of an Engineering Presentation Preparation Laboratory,” GTE Foundation, (1995)

"Thermal Analysis of Diamond Film Processing,” Department of Defence/Air Force and Raytheon Corp. (1994-95)

"Exploring Technology; a Novel Introduction of Future Engineers and Teachers to Science and Technology,” National Science Foundation (1993-95)

"Understanding the Way things Work: An Innovative Approach to Early Science Education- Exploring Toys," Department of Education, Eisenhower Program (1995)

"Teachers in Science Initiative," Pew Charitable Trusts (1992-96)

"Testing of the Tufts Catalytic Converter Preheater," Cincinnati Environmental Protection Agency (1993-95)

"Development of a Novel Catalytic Converter Preheater for Emission Reduction during Vehicle Cold Starts," U.S. Environmental Protection Agency / Tufts C.E.M (1992-94)

"Understanding the Way things Work: An Innovative Approach to Early Science Education- Exploring the bicycle," Department of Education, Eisenhower Program (1993-94)

"Understanding the Way things Work: An Innovative Approach to Early Science Education- Exploring the Bathroom," Department of Education, Eisenhower Program (1992-93)

"A New Way to Teach Science to Middle School Students-Crossroads II program," Apple Computer Co. (1992-93)

"Presidential Young Investigator Award," National Science Foundation (1991-96)

"Experimental Investigation of the Solid/Liquid Interface of Thin Films During Thermal Processing," National Science Foundation (1990-93)

"Development of a Novel Diesel Engine Preheater Using Exhaust Waste Heat," U.S. Environmental Protection Agency / Tufts C.E.M (1990-91)

"Experimental Investigation of the Convective Phenomena in the Optical Fiber Drawing Furnace," Galileo Electro-Optics Corp. (1990-91)

"Thermal Analysis of Zone-Melting-Processing of Thin Silicon Films," Mellon Fellowship (1990)

"Exemplary Engineering Laboratory awards," Apple Computer Corp. - Equipment Grant (1990)

"Heat Transfer Analysis of Transient Thermal Processing of Multilayer Thin Film Structures," National Science Foundation (1988-90)

"Research Experience for Undergraduates in Thermal Analysis of Materials Processing," National Science Foundation (1988-90)

"Thermal Analysis of the Isolated Silicon Epitaxy Process," Kopin Corp. (1988-90)

AT&T Bell laboratories- Equipment Grant (1988)

"Feasibility Study of the Use of Reversible Chemical Reactions for Thermal Energy Storage," Link Foundation and private industry (1987)

"Tufts Entrepreneurship Program," American Can Foundation (1986)

College and University Committee Appointments and Special Activities (at Tufts University)

Provost's Council	2001-02
University Research Council	1999-02
PreK-12 Education Council	1997-02
Tufts University Council	1994-02
Budget and University Priorities Committee	1994-02
Computer Facilities and Usage Committee	1994-02
Educational Policy Committee	1994-02
Faculty Research Awards Committee	1994-02
Faculty Research Support and Facilities Advisory Committee	1994-02
Tenure and Promotion Committee	1994-02
Undergraduate Admissions and Financial Aid Committee	1994-02
Arts and Sciences Policy Council	1993-02
Engineering Graduate Studies Committee	1993-02
Engineering Executive Committee	1993-02
Dudley Wright Center for Science Education Advisory Board	1990-02
Electro-Optics Technology Center - Member	1989-02
Laboratory for Materials and Interfaces- Member	1990-02

Director, Comparative Biomechanics Laboratory	1993-02
Chair, Arts and Science Committee on Undergraduate Admissions and Fin. Aid	1992-93
Materials Research Working Group	1992-94
University Committee on Tuition Benefits	1991-92
Strategic Planning Committee for the College of Engineering	1992-95
Director, Tufts Thermal Analysis of Materials Processing Laboratory	1990-95
Undergraduate Admissions and Financial Aid committee member	1990-93
University Presidential Search Committee	1991-92
Search Committee for the director of the Dudley Wright Center	1990-92
Educational Policy Committee (Arts and Sciences)	1988-89
Committee on Faculty Research and Facilities (Arts and Sciences)	1986-87
TEAM Tufts committee for under-represented middle school students	1991-93
Planning Committee for the PEW charitable trust A&S proposal	1991
Tufts Environmental Literacy Institute - Member	1990-93
Experimental College Course Selection Committee	1990-91
Committee on the Program in Engineering Management	1987-93
Experimental College Course Review Committee	1991-spring
Entrepreneurship Program Director	1986-88

Departmental Committees and Special Activities

Director, Graduate Program	1992-93
Graduate Program Committee (M.E. department)	1988-93
Laboratory Enhancement Committee (M.E. department)	1989-92
Committee on the Manufacturing Program (M.E. department)	1989-91
Advisor, Student section of the American Society of Mechanical Engineers	1988-92

Search Committee Chair/Member for various faculty/staff members
Various projects on major purchases and space renovations

Professional and Civic Activities

Center for the Advancement of Science in Space (CASIS) Board

American Association for the Advancement of Science Committee on Science and Technology Engagement

Governor's Readiness Project Leadership Council

Massachusetts Governor's Science Technology Engineering and Mathematics Council, Executive Committee

Smith College, Member of the Engineering Advisory Board

Wheelock College, Member of the International Advisory Board

Sloan Foundation Cornerstone Project, Member of the Advisory Board

National Center for Engineering Education, Member of the Advisory Board

Reviewer/panelist for the

- National Science Foundation
- National Science Board
- International Science Foundation
- Journal of Heat Transfer
- Journal of Materials Research
- Journal of Thermophysics and Heat Transfer
- Journal of Applied Physics
- Journal of Fluid Mechanics
- Canadian Journal of Chemical Engineering

- National Governors Association

American Society of Engineering Education, member

American Society of Mechanical Engineers, member
ASME/Fluid Mechanics Division
ASME/Heat Transfer Division

Materials Research Society, member

Association of Science and Technology Centers, member

Science Museum Exhibit Collaborative, president (2004-2007)

Massachusetts Math and Science Advisory Council, member, elected by the State Board of Education (1995-1999)

Massachusetts Technology/Engineering Education Advisory Council, Chair, elected by the State Board of Education (1999- 2008)

Massachusetts Educational Frameworks Revision; Advisor to the Science and Technology Education Frameworks Revision Committee (1999- 2007)

Massachusetts Comprehensive Assessment System (MCAS) Performance Standards Committee, member, appointed by the Commissioner of Education, August 1998

U.S. Center for International Visitors-Scholars, Educational Advisor on Superconductivity (1987-89)

Sigma Xi Honor Society, member

Tau Beta Pi Engineering Honor Society, member

Tufts University Alumni Council, Elected Member (1993-2003)

Pompositticut School Council elected member (1993-1997)

Stow School System, Science and Technology Education Enhancement Program, founder, director (1988-1993)

Nashoba Area K-12 Regionalization Committee, Stow School Committee Representative (1990-91)

Hale Middle School, Science Program Advisor- Volunteer (1988-2002)

Central Massachusetts Regional Science and Engineering Fair Committee, Member (1989-1991)

Union 47 (Bolton-Stow) School Superintendent Search Committee, Chair (1993)

Athens College (high school) Alumni Association, Chairman of the Board, N.E. Section (1987-90)

Books, Patents, Articles, Reports, and Presentations

i) Books

1. Miaoulis, Ioannis, program author, **Science Explorer,** 16-book series on Middle School Science**,** Prentice Hall**:**

The Nature of Science and Technology; From Bacteria to Plants; Animals; Cells and Heredity; Human Biology and Health; Environmental Science; Inside Earth; Earth's Changing Surface; Earth's Waters; Weather and Climate; Astronomy; Chemical Building Blocks; Chemical Interactions; Motion, Forces, and Energy; Electricity and Magnetism; Sound and Light

2. Miaoulis, Ioannis 2010. K-12 Engineering—the Missing Core Discipline. In *Holistic Engineering Education: Beyond Technology,* edited by Domenico Grasso and Melody Brown Burkins, pp. 37-51. Springer Science & Business Media, LLC

ii) Patents

1. "Engine Preheating Process and System" I. Miaoulis, M. Selvidge*****, **U.S. Patent** #4,991,644 (1991)

2. "Automotive Vehicle Auxiliary Component Preheating Method and System" I. Miaoulis, **U.S. Patent** #5,398,747 (1995)

iii) Refereed Articles

3. "Applications of Charging in Low Conductivity Fluids for Velocity Measurements, " B. Abedian and I. Miaoulis, in *Mass Flow Measurements*, FED-Vol 17, A.S.M.E. (1984)

4. "Heat Source Power Requirements for High Quality Recrystallization of Thin Silicon Films for Electronic Devices," I. Miaoulis and B. Mikic, **Journal of Applied Physics**, Vol. 59, 1658, (1986)

5. "Temperature Distribution in Silicon on Insulator Systems During Recrystallization Processing," I. Miaoulis and B. Mikic, **Journal of Applied Physics**, Vol. 59, 1663, (1986)

6. "Electric Charging in Laminar Pipe Flow," E. Potsdam^{+}, I. Miaoulis and B. Abedian **International Journal of Physicochemical Hydrodynamics,** Vol.9, 589, (1987).

7. "Thermal Analysis of Zone-Melting-Recrystallization Processing of Multilayer Thin Film Structures," I. Miaoulis and J. Lipman*****, in *Selected Topics in Electronic Materials*, M.R.S. EA-18 (1988)

8. "Zone-Melting Processing of Thick High-Tc Superconducting Films," I. Miaoulis, J Lipman^{+}, D. A. Flodman^{+}, P.Y. Wong^{+}, M.W. Wolfson^{+}, J. Barrett III^{+}, A. Nelson^{+}, **Journal of Physics D: Applied Physics**, Vol.22 (1989)

9. "A Novel Diesel Engine Cold Start Aid System Using Engine Waste Heat," M. Selvidge*****, I. Miaoulis; in *Waste Heat Utilization*, A.S.M.E. HTD-Vol 118 (1989)

10. "Texture Enhancement of Thick High-Tc Superconductive Films by Zone-Melting," I. Miaoulis, J Lipman^{+}, D. A. Flodman^{+}, P.Y. Wong^{+}, M.W. Wolfson^{+}, J. Barrett III^{+}, A. Nelson^{+}; in *Collected Papers in Heat Transfer* A.S.M.E. HTD-Vol. 123 (1989)

11. "Numerical Simulation of the Radiation Effects in Graphite Strip Zone-Melting- Recrystallization," J. Lipman*****, P. Wong*****, I. Miaoulis, J. Im; in *Collected Papers in Heat Transfer* A.S.M.E. HTD-Vol 123 (1989).

12. "Evaluation of Reversible Hydration Reactions for Use in Thermal Energy Storage," M. Selvidge*****, I. Miaoulis; **Solar Energy**, Vol. 44, 173 (1990)

13. "Parametric Study of the Zone-Melting-Recrystallization Process of SOI structures," J. Lipman*****, I. Miaoulis, J. Im, in *Beam-Solid Interactions: Physical Phenomena*, M.R.S. Vol 157 (1990)

14. "Modeling of Localized Melting of Thin Silicon Films in Zone-Melting- Recrystallization," J. Im, J. Lipman*****, I. Miaoulis, C. Chen, C.V. Thompson, in *Beam-Solid Interactions: Physical Phenomena*, M.R.S. Vol 157 (1990)

15. "Thermal Modeling of the Optical Fiber Drawing Process," H. Papamichael*****, I. Miaoulis, in *Optical Fiber Materials and Processing*, M.R.S. Vol. 172 (1990)

16. "Thermal Analysis of Thin Film Zone-Melting-Recrystallization," I. Miaoulis, in *Recrystallization '90*, T.M.S. (1990).

17. "Electric Charging in Flow of Low Conductivity Liquids Through Screens: A Comparison of Theory and Experiment," I. Miaoulis, B. Abedian, and M. Darnahal, **Journal of Electrostatics** 25, 287 (1990).

18. "Theory for electric charging in flow of low conductivity liquids through screens," I. Miaoulis, B. Abedian, and M. Darnahal, **Journal of Electrostatics** 25, 295 (1990).

19. "A Passive Probe for Electrostatic Charge Density Measurements," I. N. Miaoulis, B. Abedian, **Review of Scientific Instruments** 61, 3416 (1990).

20. "Microscale Heat Transfer Phenomena in Multilayer Thin Film Processing with a Radiant Heat Source," P. Wong*****, I. Miaoulis, P. Zavracky, in *Microstructures Sensors, and Actuators*, ASME Vol. DSC-19 (1990)

21. "A General Simulation Technique for the Cooling Stage of Optical Fiber Drawing," H. Papamichael*****, I. Miaoulis, ASME paper 90-WA/EEP-11 (1990)

22. "Optical Effects of the Multilayer Structure of SOI Films During Transient Thermal Processing with a Radiant Line Heat Source," P. Wong*****, I. Miaoulis, P. Zavracky, in *Surface Chemistry and Beam-Solid Interactions* , MRS Vol. 201 (1990)

23. "Scanning Speed and Supercooling Effects During Zone-Melting-Recrystallization of SOI Wafers," S. Yoon*****, I. Miaoulis, in *Kinetics of Phase Transformations* , MRS Vol. 205 (1990)

24. "Thermal Modelling of Zone-Melting-Recrystallization processing of Silicon-on-Insulator Film Structures," I. Miaoulis, P. Wong*****, J. Lipman*****, J. Im, **Journal of Applied Physics** Vol. 69, 7273 (1991).

25. "Thermal Behavior of Optical Fibers During the Cooling Stage of the Drawing Process," H. Papamichael*****, I. Miaoulis, **Journal of Materials Research,** Vol. 6, 159 (1991)

26. "Axial Heat Conduction Effects in the Cooling of Optical Fibres," H. Papamichael*****, I. Miaoulis, **Glass Technology** Vol. 32 (1991)

27. "Thermal Analysis of Multilayer Thin Film Structure Processing with an Infrared Source; an Overview " I. N. Miaoulis, P.Wong*****, S. Yoon*****, R. Robinson*****, C. Hess*****, in *Heat Transfer in Thin Films*, A.S.M.E., HTD 184 (1991)

28. "Cross-Correlation Thermal Radiation Phenomena in Multilayer Thin Films Processing with a Radiant Heat Source," P. Wong*****, L. M. Trefethen, I. N. Miaoulis, in *Micromechanical Sensors, Actuators, and Systems*, A.S.M.E., DSC Vol. 32 (1991)

29. " Mixed Convection Cooling Effects during the Drawing of Optical Fibers," H. Papamichael*****, I. Miaoulis, in *Fiber Optics and Glass: from Science to Producibility*, S.P.I.E. (1991)

30. "Optical Effects of Multilayer Thin Films during Zone Melting Recrystallization with an Infrared Heat Source," P. Wong*****, I. Miaoulis, **Journal of Applied Physics** 70, 7594 (1991)

31. "Numerical Simulation of Zone Melting Recrystallization of Thin Silicon Films with a Tungsten Halogen Lamp," R. D. Robinson*****, I. N. Miaoulis, in *Phase Formation and Modification by Beam-Solid Interactions*, MRS Vol. 235, (1991)

32. "Solidification Interface Instabilities during Zone Melting Recrystallization Processing of Multilayer Thin Film Structures," S. Yoon*****, C. Hess*****, I. N. Miaoulis, in *Interface Dynamics and Growth*, Vol. 237, (1991)

33. "Thermally Controlled Morphological Features of a Solid-Liquid Interface of a Thin Gallium Film," R. D. Robinson*****, I. N. Miaoulis, in *Interface Dynamics and Growth*, MRS Vol. 237, (1991)

34. "Thermal Effects of Heat Source Scanning Speed and Constitutional Supercooling during Zone-Melting-Recrystallization of Silicon-On-Insulator Structures," S. Yoon***** and I. Miaoulis, **Journal of Materials Research,** Vol. 7, 124 (1992)

35. "The Cooling of Optical Fibres during the Drawing Process", H. Papamichael*****, I. Miaoulis, **Glass Technology** Vol. 33, 136 (1992)

36. "Thermal Analysis of Zone-Melting-Recrystallization of Silicon-On-Insulator Structures with an Infrared Heat Source; an Overview" I. N. Miaoulis, P. Y. Wong*****, S. M. Yoon*****, R. D. Robinson*****, C. K. Hess*****, **Journal of the Electrochemical Society** Vol 139, 2687 (1992)

37. "Thermal Radiation Modeling in Multilayer Thin Film Structures", P. Wong*****, C. Hess*****, I. N. Miaoulis, **Int. J. Heat Mass Transfer** Vol. 35, 12 (1992)

38. "Thermal Effects of Isolated Step Perturbations within Thin Films during Processing with a Radiant Heat Source", C. K. Hess*****, P. Wong*****, I. N. Miaoulis, in *Transport Phenomena in Materials Processing and Manufacturing*, A.S.M.E., HTD-196 (1992)

39. "Thermal Energy Storage with Reversible Hydration of Lithium Bromide" I. N. Miaoulis, C.S. Thompson^{+}, S. Kwak^{+}, in *Topics in Heat Transfer*, A.S.M.E. Vol. 206-2 (1992)

40. "Effect of Scanning Speed on the Stability of the Solidification Interface during Zone-Melting-Recrystallization of Thin Silicon Films" S. M. Yoon*, I. N. Miaoulis, **Journal of Applied Physics** Vol. 72, 316 (1992)

41. "Cross Correlation of Optical Properties of Thin Films under Thermal Radiation" P.Y. Wong*****, L.M.Trefethen, I.N. Miaoulis, **Journal of Applied Physics** Vol 72, 4884 (1992)

42. "Solidification Front Stability During Zone-Melting Recrystallization of Thin Silicon Films", S. M. Yoon***** and I. N. Miaoulis, **Journal of Crystal Growth** Vol. 126, 275 (1993)

43. "Thermal Analysis of Incandescent Lamp Zone-Melting Recrystallization of Thin Silicon Films," R. D. Robinson*****, I. N. Miaoulis, **Journal of Applied Physics** Vol 73 (1) (1993)

44. "The effects of Natural Convection and Conduction in a Zone-Melting Recrystallization Chamber" B.D. Heilman^{+} , M.A. Marston^{+}, P. Wong *****, I. N. Miaoulis, **Journal of Materials Research** Vol. 8 (3) (1993)

45. "Microscale Radiation Effects in Multilayer Thin Film Structures During Rapid Thermal Processing," P. Y. Wong*, C. K. Hess*, and I. N. Miaoulis, *Proc. of Symp. on Rapid Thermal and Integrated Processing II*, MRS Vol. 303., (1993)

46. "Thermal Radiation Phenomena in Rapid Thermal Processing of Thin Film Structures," I. N. Miaoulis and P. Y. Wong*, *Proc. of 1st International Conference in Rapid Thermal Processing*, September 1993; and also presented in RTP'93 in Scottsdale, AZ, (1993)

47. "Real-Time Image Analysis and Control of the Solid/Liquid Interface During Zone-Melting Recrystallization of Thin Films," P. Y. Wong* and I. N. Miaoulis, *Proc. of Symp. on Sensors and Control for Microelectronic Processing*, Soc. Photo-Instr. Eng., 1993, and presented at Soc. Photo-Instr. Eng. meeting, September Monterey, CA, (1993)

48."A Microscale Radiation Effects On Thermal Regulation Of Insects", B. Heilman* and I. N. Miaoulis, Advances in Biological Heat and Mass Transfer, edited by R. B. Roemer, *The American Society of Mechanical Engineers, Heat Transfer Division, HTD-Vol. 268*, 79-87, (1993)

49."Insect Thin Films A Solar Collectors", B. Heilman* and I. N. Miaoulis, **Journal of Applied Optics** Vol. 33 (28) (1994)

50."A Two-Dimensional Analysis Of The Viscous Problem Of A Glass Preform During The Optical Fibre Drawing Process," S. Rosenberg*, H. Papamichael* and I. N. Miaoulis, **Glass Technology** Vol. 35, No. 6 (1994)

51."Thermal Parameters Affecting Low Temperature Zone Melting Recrystallization Of Thin Films," R. D. Robinson* and I. N. Miaoulis, **Journal of Applied Physics** Vol. 75 (3) (1994)

52. "A Comparative Study Between High And Low Temperature Thermally Controlled Crystallization Of Thin Films," R. D. Robinson* and I. N. Miaoulis, *Amoprhous Materials Crystallization*, MRS Vol. 321 (1994)

53 "An Investigation of the Viscous Problem Associated with the Heating of the Glass Preform during Optical Fiber Processing,"S. Rosenberg+, H. Papamichael* and I. N. Miaoulis, *Amoprhous Materials Crystallization*, MRS Vol. 321 (1994)

54."The Effect of Substrate Temperature on the Crystallinity and Stress of Ion Beam Sputtered Silicon on Various Substrates," , C. G. Madras*, L. Goldman, P. Y. Wong*, and I. N. Miaoulis, MRS 1994, *Proceedings of the Materials Research Society Spring Meeting*, Vol. 338 San Francisco, CA (1994)

55."Thermal-Radiation Absorption Characteristics Of Patterned Wafers During Rapid Thermal Processing", P. Y. Wong* and I. N. Miaoulis, *Proceedings of the Materials Research Society* , Vol. 342, Spring Meeting, San Francisco, CA (1994)

56."Thermal Evaluation Of Zone-Melting Recrystallization Of Thin-Film Structures Over A Wide Range Of Melting Points," R. D. Robinson*, P. Y. Wong* and I. N. Miaoulis, **Journal of Materials Research**, Vol. 10 (4) (1994)

57."Heat Recovery For Automotive Applications Using Reversible Hydration Reaction", M. A. Marston*, S. Armstrong* and I. N. Miaoulis, *Proceedings of ASME Winter Annual Meeting*, Chicago, Ill, 94-WA/HT-28 (1994)

58."Processing Uniformity Issues During Zone-Melting Recrystallization Of Large Thin-Film Areas", P. Y. Wong*, R. D. Robinson*, and I. N. Miaoulis, *Heat Transfer in Thin Films*, A.S.M.E., HTD Vol. 293 (1994)

59. "The Effect Of Microscale And Macroscale Patterns On The Radiative Heating Of Multilayer Thin-Film Structures", P. Y. Wong*, B. D. Heilman*, and I. N. Miaoulis, *Microscale Heat Transfer*, A.S.M.E., HTD Vol. 291 (1994)

60. "Thermal And Deposition Stress Relaxation In Low-Melt-Point Substrates With High-Melt-Point Coatings", S. E. Rosenberg*, P. Y. Wong*, and I. N. Miaoulis, *Thermal Processing of Materials*, A.S.M.E., HTD Vol. 289 (1994)

61. "Hands-On Aeronautics for Middle School Students", Y.D. Pols, C.B. Rogers, I. N. Miaoulis, **Journal of Engineering Education**, Vol.83 (3) (1994)

62."An Investigation of the Air Flow Pattens in the Heating Region of Optical Fiber Drawing," C. Pellon*****, H. Papamichael***** and I. N. Miaoulis, *Proceedings of the Symposium on Properties and Characteristics of Optical Glass III*, SPIE's annual meeting 94, San Diego California Vol 2287 (1994)

63."Heat Transfer In The Heating Region Of The Optical Fiber Drawing Process," H. Papamichael***** and I. N. Miaoulis, *Proceedings of the Symposium on Properties and Characteristics of Optical Glass III*, SPIE's annual meeting 94, San Diego California (1994)

64. "A Novel Automobile Preheating System For Cold Starts," Mathew A. Marston[*], Steven Armstrong[*], and Ioannis N. Miaoulis, *Society of Automotive Engineers*, ***Paper #941995,*** (1994)

65. "Implicit Modified Enthalpy Method with Application to Thin Film Melting", C. K. Hess[*], and I. N. Miaoulis, **Int. J. Numerical Methods for Engineers** Vol. 5 (1995)

66. "A Theoretical Study of the Effect of Thermal Annealing on Curvature Changes in Multilayered Structures," S. E. Rosenberg[*], P. Y. Wong[*], and I. N. Miaoulis, **Thin Solid Films**, Vol 269 (1995).

67. "Analysis Of Deposition Stress During Thin-Film Growth On A Relaxing Substrate," S. E. Rosenberg[*], P. Y. Wong[*], and I. N. Miaoulis, **Journal of Applied Physics**, Vol. 77 (12) (1995)

68. "Measurement of the Effect of Temperature on Stress Distribution and Deformation in Multilayer Optical Thin Film Structures", C.G Madras[*], P.Y.Wong[*], L.M. Goldman, and I.N. Miaoulis, *Thin Films: Stresses and Mechanical Properties*, MRS Vol. 356 (1995)

69. "Coherent Thermal-Radiation Effects On Temperature Dependent Emissivity Of Thin-Film Structures On Optically Thick Substrates," P.Y. Wong[*], C. K. Hess[*], and I. N. Miaoulis, **Optical Engineering**, Vol. 34 (6) (1995)

70. "Transient And Spatial Radiative Properties Of Patterned Wafers During Rapid Thermal Processing," P. Y. Wong[*] and I. N. Miaoulis, *Rapid Thermal and Integrated Processing IV*, MRS Vol. 385 (1995)

71. "Thermal Radiative Analysis Of Rapid Thermal Processing Of Electronic Materials," P. Y. Wong[*] and I. N. Miaoulis, *Transport Phenomena in Electronic Materials Processing*, A.S.ME. HTD Vol. 317-2 (1995)

72. "Microscale Reflectance Spectrometry Of Thin-Film Structures In Butterfly Wing Scales," P. Y. Wong[*] and I. N. Miaoulis, Measurement Techniques and Instrumentation in Bio-Heat and Mass Transfer, A.S.M.E., HTD Vol. 322 (1995)

73. "Rapid Thermal Annealing Of High-Melting-Point Films On Low-Melting-Point Substrates," S. E. Rosenberg[*], P. Y. Wong[*], and I. N. Miaoulis, **IEEE Transactions of Semiconductor Manufacturing**, Vol 9 (1996)

74. "Inelastic Effects in a Thermoplastic Adhesive Used for Bonding a Diamond Disk," C. G. Madras[*], P. Y. Wong, and I. N. Miaoulis, **Optical Engineering,** Vol. 35 (1996)

75**.** " Numerical Modeling of Radiative Properties of Patterned Wafers with Submicron Features" J. Hoppert[+], I. Miaoulis, P. Wong, *Rapid Thermal Integrated Processing V*, MRS Vol. 429 (1996)

76. “Viscoelastic Deformation during Thermal Cycling of Adhesively Bonded Optical Coatings, ” C. G. Madras*, P. Y. Wong, and I. N. Miaoulis, **Materials Letters,** Vol.35, No.8 (1996)

77. "Air Flow Paterns in the Optical Fibre Drawing Furnace " H. Papamichael*, C. Pellon*, and I. N. Miaoulis, **Glass Technology,** Vol.38 (1997)

78. "The Viscosity Of Germanium During Substrate Relaxation Upon Thermal Anneal," S. E. Rosenberg, C. G. Madras*, P. Y. Wong*, and I. N. Miaoulis, **Journal of Materials Research** Vol. 12 (1997)

79. "Prediction of Elastic Strains in Adhesively Bonded Diamond Optical Windows," C. G. Madras*, P. Y. Wong, and I. N. Miaoulis, **Glass Technology,** Vol.38 (1997)

80. “Selective Multilayer Thin-Film Development in Insects,” I. N. Miaoulis, H. Tada*, S. E. Mann+, and P. Y. Wong, Proceedings of Session on Fundamentals of Microscale Biothermal Phenomena, *American Society of Mechanical Engineering, HTD, Vol. 355,* 1997

81. “Viscoelastic Behavior of Polymer Thin-Film under Thermo Stresses,” S. D. Bluestein+, D. P. Y. Bramono+, I. N. Miaoulis, and P. Y. Wong, *Materials Research Society*, Vol. 445, pp. 185-190, 1997

82. “Microscale Radiative Effects in Complex Microstructures of Iridescent Butterfly Wing Scales,” H. Tada*, S. E. Mann+, I. N. Miaoulis, and P. Y. Wong, *Materials Research Society*, Vol. 489 1998

83. “Effect of Surface Patterning in Thin Film Structures on the Thermal Radiative Properties During Rapid Thermal Processing,” H. Tada*, A. R. Abramson*, I. N. Miaoulis, and P. Y. Wong, Session on Radiative Properties of Surfaces, particles, and Films at High and Low Temperatures, *American Society of Mechanical Engineering, HTD Vol. 361-2,* **(**1998)

84. “Butterfly Thin Films Serve as Solar Collectors," I. Miaoulis, and B. Heilman*, **The Annals of the Entomological Society of America,** Vol 91 (1998)

85. “Numerical Simulation of Radiant Thermal Processing of Bilayer Microcantilevers,” H. Tada*, I. N. Miaoulis, and P. Y. Wong, *American Society of Mechanical Engineering, DSC Vol.66,* **(**1998)

86. “The Effects of Butterfly Scale Microstructure on the Iridescent Color Observed at Different Angles ” H. Tada+, S.E. Mann+, I.N. Miaoulis, P.Y. Wong, **Applied Optics** Vol. 37 (1998)

87. "Partial Transparency Effects of Silicon During Rapid Thermal Processing," A. R. Abramson*, I. N. Miaoulis, P. Y. Wong, P. Nieva, and P. Zavracky, *Materials Research Society Symposium Proceedings*, Vol. 525, 1998

88. "Relaxation of Extrinsic and Intrinsic Stresses in Germanium Substrates with Silicon Films," C. G. Madras*, L. Goldman, P. Y. Wong*, and I. N. Miaoulis, **Thin Solid Films,** Vol. 320 (1998)

89. “MEMS as Temperature Sensors During High Temperature Processing,” H. Tada*, A. R. Abramson*, I. N. Miaoulis, P. Y. Wong, P. Nieva, and P. Zavracky, *Proceedings of the Symposiun on Microelectromechanical Structures for Materials Research, Materials Research Society, Vol. 518, pp. 161 – 166,* 1998

90. "Effect of Doping Level During Rapid Thermal Processing of Multi-Layer Structures," A. R. Abramson*, P. Nieva, H. Tada*, P. Zavracky, I.N. Miaoulis, and P. Y. Wong, **Journal of Materials Research**, (1998)

91. "In-Situ Measurement of Thermo-Mechanical Effects and Properties in Thin Film-Polymer," S. D. Bluestein+, E. K. Chan+, I. N. Miaoulis, and P. Y. Wong, **IEEE Transactions on Components, Packaging, and Manufacturing Technology** (1999)

92. "Temperature Measurements During Rapid Thermal Annealing Using MEMS," P. Nieva, P. Zavracky, G. Adams, H. Tada*, A. R. Abramson*, I. N. Miaoulis, and P. Y. Wong, *Proceedings of the 5th ASME/JSME Joint Thermal Engineering Conference*, San Diego, CA (1999)

93. "Effect of Doping Level During Rapid Thermal Processing of Multi-Layer Structures," A.R. Abramson*, P. Nieva, H. Tada*, P. Zavracky, I.N. Miaoulis, and P.Y. Wong, **Journal of Materials Research,** Col. 14, No. 6 (1999)

94. "Mechanical and Thermophysical Properties of Silicon Nitride Thin Films at High Temperatures," H. Tada*, I.N. Miaoulis, P.Y. Wong, P. Nieva, and P. Zavracky, *Materials Research Society Proceedings,* Vol 546, pp. 97-102, (1999)

95. "Determining the High Temperature Properties of Thin Films Using Bi-Layered Cantilevers," H. Tada*, P. Nieva, P. Zavracky, I. N. Miaoulis, and P. Y. Wong, *Materials Research Society Proceedings*, Vol. 546, pp. 39-44, (1999)

96. "Limiting the Effects of Thin Film Patterns on the Temperature Distrubution of Silicon Wafers During Radiant Processing," H. Tada*, A.R. Abramson*, S.E. Mann*, I.N. Miaoulis, and P.Y. Wong, **Optical Engineering**, Vol.39, No.8 (2000)

97. "Novel Imaging System for Measuring Microscale Curvatures at High Temperatures," H. Tada*, A.E. Kumpel, R.E. Lathrop, I.N. Miaoulis, and P.Y. Wong, **Review of Scientific Instruments**, Vol.71, No 1 (2000)

98. "High-Temperature-Dependent Coefficient of Thermal Expansion of Silicon Nitride Films used in Microelectromechanical Systems," M. Bargmann+, A. Kumpel+, H. Tada*, I. N. Miaoulis, P. Y. Wong, P. Nieva, and P. Zavracky, *Materials Research Society Proceedings*, Vol. 605, pp. 235-240, (2000)

99. "Thermal Expansion Coefficient of Polycrystalline Silicon and Silicon Dioxide Thin Films at High Temperatures," H. Tada*, A.E. Kumpel+, R.E. Lathrop+, P. Nieva, P. Zavracky, I.N. Miaoulis and P.Y. Wong, **Journal of Applied Physics**, Vol. 87, No.9 (2000)

100. "Spectral Imaging, Reflectivity Measurements, and Modeling of Iridescent Butterfly Scale Structures," S. Mann*, I. N. Miaoulis, and P. Y. Wong, **Optical Engineering**,Vol. 40, No. 10 (2001)

+ designates undergraduate student of Prof. Miaoulis
*** designates graduate student of Prof. Miaoulis**

iv) Theses and Technical Reports

101. "A New Chabazite-Zeolite Solar Energy Storage System", I. Miaoulis, B.S.M.E. Thesis, Tufts University, (1983)

102. "Heat Transfer Analysis for High Quality Liquid-Phase Recrystallization of Thin Silicon Films for Electronic Devices," I. Miaoulis, S.M.M.E. Thesis and VLSI Report No. 84-210, M.I.T., (1984).

103. "Retail Sales Seasonal Adjustment using the Kalman Filter Algorithm," I. Miaoulis, M.A. Econ. special project report, Tufts University (1986)

104. "Experimental Investigation of Turbulence Spectra of Charge Density Fluctuations in the Equilibrium Range", I. Miaoulis, Ph.D. dissertation, Tufts University (1987)

105. "Thermal Issues of Optical Fiber Fabrication; a Review" I. Miaoulis, report to Galileo Electro-Optics Corp. (1989)

v) Presentations in Professional Conferences and other Similar Activities

• *American Society of Mechanical Engineers Winter Annual Meeting*, New Orleans, 1984
1. "Applications of Charging in Low Conductivity Fluids for Velocity Measurements"

• *Applied Mechanics Colloquium*, Yale University
Invited Presentation
2. "A New Technique for Measurement of Scalar Fluctuation Measurements in a Turbulent Jet"

• *Materials Research Society Fall Meeting*, Boston, 1988
3. "Thermal Analysis of Zone-Melting-Recrystallization Processing of Multilayer Thin Film Structures"
4. "Development of Thick Sr-Bi-Ca-Cu-O Superconductive Films by a Simple Screen Printing Technique"
5. "Grain Growth of Thick High Tc Superconducting Films by Zone-Melting Recrystallization"

• *Kopin Corp.*, Massachusetts, January 1988
Invited presentation
6. "Heat Transfer Analysis of Zone-Melting-Recrystallization of Thin Semiconducting Films"

• *American Society of Mechanical Engineers Winter Annual Meeting*, San Francisco, (1989)
7. "A Novel Diesel Engine Cold Start Aid System Using Engine Waste Heat"
8. "Texture Enhancement of Thick High-Tc Superconductive Films by Zone-Melting"
9. "Numerical Simulation of the Radiation Effects of the Zone-Melting- Recrystallization Process"

• *Materials Research Society Fall Meeting*, Boston (1989)
10. "Parametric Study of the Zone-Melting-Recrystallization Process of SOI structures"
11. "Modeling of Localized Melting of Thin Silicon Films in Zone-Melting-Recrystallization"
12. "Thermal Modeling of the Optical Fiber Drawing Process,"

• *Kopin Corp.*, December 1989
Invited Presentation
13. "Thermal Analysis of the Isolated Silicon Epitaxy Process"

• *International Conference on Recrystallization in Metallic Materials*, Wollongong, Australia, 1990
Invited presentation
14. "Thermal Analysis of Thin Film Zone-Melting-Recrystallization"

• *Inventors' Weekend*, Boston Museum of Science, (1990).
15. "A Rechargeable Thermal Battery for Diesel Engine Cold Starts"

• *American Society of Mechanical Engineers Winter Annual Meeting*, Dallas, Texas, 1990

16. "Microscale Heat Transfer Phenomena in Multilayer Thin Film Processing with a Radiant Heat Source"
17. "A General Simulation Technique for the Cooling Stage of Optical Fiber Drawing"

• *Materials Research Society Fall Meeting*, Boston, Massachusetts, 1990
18. "Optical Effects of the Multilayer Structure of SOI Films During Transient Thermal Processing with a Radiant Line Heat Source"
19. "Scanning Speed and Supercooling Effects During Zone-Melting-Recrystallization of SOI Wafers"

• *Galileo Electro-Optics Corp*., March 1991
Invited Presentation
20. "Flow Visualization of the Convective Currents in an Optical Fiber Drawing Furnace"

• *American Society of Mechanical Engineers Winter Annual Meeting*, Atlanta, Georgia, 1991
21. "Thermal Analysis of Multilayer Thin Film Structure Processing with an Infrared Source; an Overview "
22. "Cross-Correlation Radiation Phenomena in Multilayer Thin Films Processing with a Radiant Heat Source"

• *OE/Fibers, Society of Photo-Optical Instrumentation Engineers*, Boston, Mass.(1991)
23. "Mixed Convection Cooling Effects during the Drawing of Optical Fibers"

• *Schotts Fiberoptics Inc.* Southbridge, Mass. December 1991
Invited Presentation
24. "Thermal Issues in Optical Fiber Processing"

• *Materials Research Society Fall Meeting*, Boston, Mass. , 1991
25. "Numerical Simulation of Zone Melting Recrystallization of Thin Silicon Films with a Tungsten Halogen Lamp"
26. "Solidification Interface Instabilities during Zone Melting Recrystallization Processing of Multilayer Thin Film Structures"
27. "Thermally Controlled Morphological Features of a Solid-Liquid Interface of a Thin Gallium Film"

• *MIT Materials Science and Engineering colloquium*; February 1992
Invited Presentation
28. "Thermal Issues in Multilayer Thin Film Structures"

• *Marine Benthic Ecology Meeting*, Newport, Rhode Island, March 1992
29. "Drag Coefficient Variations of *Candylactus Gigantea* Sea Anemones in Periodic Flow Fields"

• *New England Environmental Conference*, Boston, Mass., April 1992.
30. "Development of a Catalytic Converter Preheater for Emissions Reduction"

• *Kopin Corp.*, Taunton, Mass., May 1992
Invited Presentation
31. "Microscale Heat Transfer Phenomena in Multilayer Thin Film Structures"

• *Eco World'92*, Washington DC, June 1992
32. "A Catalytic Converter Preheater for Emissions Reduction During Engine Cold Starts"

• *National Heat Transfer Conference*, San Diego, August 1992
33. "Thermal Effects Induced by Isolated Step Perturbations within Thin Films during Processing with a Radiant Heat Source"
34. "Thermal Energy Storage with Reversible Hydration of Lithium Bromide"

• *Materials Research Society Fall Meeting*, Boston, Mass. November 1992

35. "The Effect of Processing Conditions on the Thermal Gradients at the Solid/Liquid Interface in Zone-Melting-Recrystrallization Using a Graphite Strip Heater"

• *Materials Research Society Spring Meeting*, San Fransisco, Calif. March 1993
36. "Microscale Radiation Effects in Multilayer Thin Film Structures During Rapid Thermal Processing"
37. "Solidification Front Stability during Zone-Melting Recrystallization of Thin Silicon Films"

• *1st International Conference in Rapid Thermal Processing*, Scottsdale,AZ, September 1993
Invited presentation
38. "Thermal Radiation Phenomena in Rapid Thermal Processing of Thin Film Structures"

• *OE/Fibers, Society of Photo-Optical Instrumentation Engineers*, Monterey, CA, September 1993
39. "Real-Time Image Analysis and Control of the Solid/Liquid Interface During Zone-Melting Recrystallization of Thin Films"

• *American Society of Mechanical Engineers Winter Annual Meeting*, New Orleans, LA, November 1993
40. "Microscale Radiation Effects on Thermal Regulation of Insects"

• *Materials Research Society Fall Meeting*, Boston, MA, November 1993
41. "A Comparative Study Between High and Low Temperature Thermally Controlled Crystallization"
42. "An Investigation of the Viscous Problem Associated with the Heating of the Glass Preform during Optical Fiber Processing"

• *Materials Research Society SpringMeeting*, San Fransisco, CA, April 1994
43. "Development of a thermal battery for cold start emissions reductions"
44. "Thermal stress and creep modeling in thin-film structures on substrates with low melting temperature"
45. "The effect of film growth on the redistribution of stresses in Germanium substrates at elevated temperatures"
46. "Thermal-radiation absorption characteristics of patterned wafers during rapid thermal processing"

• *Raytheon Corp., Advanced Research Division*, Lexington, MA, April 1994
Invited Presentation
47. "Thermal Analysis of Thin Film Structures"

• *Sylvania Corp., Research Division*, Salem, MA, May 1994
Invited Presentation
48. "Thermal Analysis of Opto-Electronic Materials Processing"

• *SPIE Annual Meeting*, San Diego, CA, July, 1994
49. "An Investigation of the Air Flow Pattens in the Heating Region of Optical Fiber Drawing"
50. "Heat transfer in the heating region of the optical fiber drawing process"

• *American Society of Mechanical Engineers Winter Annual Meeting*, Chicago, IL, Nov. 1994
51. "Heat recovery for automotive applications using reversible hydration reaction"
52. "Processing uniformity issues during zone-melting recrystallization of large thin-film areas"
53. "The effect of microscale and macroscale patterns on the radiative heating of multilayer thin-film structures"
54. "Thermal and deposition stress relaxation in low-melt-point substrates with high-melt-point coatings"

• *Disney Corporation, EPCOT Center*, Orlando, FL, May 1994
Invited Presentation

55. “A Novel Approach to Science and Technology Education”

• *Materials Research Society Fall Meeting*, Boston, MA, November 1994
56. "Measurement of the effect of temperature on stress distribution and deformation in multilayer optical thin film structures"

• *American Society of Mechanical Engineers International Mechanical Engineering Congress and Exposition*, San Francisco, CA, November, 1995
57. "Thermal radiative analysis of rapid thermal processing of electronic materials"
58. "Microscale reflectance spectrometry of thin-film structures in butterfly wing scales"

• *Materials Research Society Spring Meeting*, San Francisco, CA, April, 1995
59. "Transient and spatial radiative properties of patterned wafers during rapid thermal processing"
60. "Adhesion and thermal deformation of ceramic/polymer heterostructures"

• *Materials Research Society Fall Meeting*, Boston, MA, November 1995
61. “Temperature and Time Dependent Viscosity of Polymer Adhesives in Multilayer Structures”

• *Helicon*, Cambridge MA, January 1996
Invited talk
62. “Why Girls Shun Science”

• *Materials Research Society Fall Meeting*, Boston, MA, November 1996
63. “In Situ Measuring of Thermo-Mechanical Effects and Properties in Thin Film Polymers”

• *Materials Research Society Spring Meeting*, San Francisco, CA, April, 1996
64. “Numerical Modeling of Radiative Properties of Patterned Wafers with Sub-Micron Features”

• *Citizens Educational Resource Center*, Worcester, MA, June 1996
Invited Talk
65. “A Thematic Approach to Early Science Education”

• *Biomedical Engineering Society Annual Meeting*, University Park, PA, October 1996
66. “BioHeat Transfer in Butterfly Wings for Thermoregulation”

• *Materials Research Society Fall Meeting*, Boston, MA, 1996
67.“*In-Situ* Measuring of Thermo-Mechanical Effects and Properties in Thin-Film Polymers”

• *Optical Society of America, Light and Color in the Open Air*, Santa Fe, NM, February 1997
Invited talk
68. “Multifuncional Thin Films in Butterflies”

• *Materials Research Society Fall Meeting*, Boston, MA, 1997
69.“ Microscale Radiative Effects in Complex Microstructures of Iridescent Butterfly Wing Scales”

• *American Society of Mechanical Engineers International Mechanical Engineering Congress and Exposition*, Dallas, TX 1997
70. "Selective Multilayer Thin-Film Development in Insects"

• *Int. Symposium on Mechanics on Plants, Animals, and Their Environment, San Diego, CA*, January 1998
71. “How Butterflies Optimize Solar Energy Absorption and Convective Heat Transport by Wing Design”

• *Materials Research Society Spring Meeting*, San Francisco, CA, 1998
72. “Effect of Wafer Partial Transparency During Rapid Thermal Processing”
73. “MEMS as Temperature Sensors During High Temperature Processing”

• *Materials Research Society Fall Meeting*, Boston, MA, 1998
75. "Mechanical and Thermophysical Properties of Silicon Nitride Thin Films at High Temperatures"
76. "Determining the High Temperature Properties of Thin Films Using Bi-Layered Cantilevers"

• *American Society of Mechanical Engineers International Mechanical Engineering Congress and Exposition*, Annaheim, CA, 1998
77. “Effect of Surface Patterning in Thin Film Structures on the Thermal Radiative Properties During Rapid Thermal Processing”
78. “Numerical Simulation of Radiant Thermal Processing of Bilayer Microcantilevers”

• *American Society of Mechanical Engineers/Japanese Society of Mechanical Engineers JointThermal Engineering Conference*, San Diego, CA, 1999
74. "Temperature Measurements During Rapid Thermal Annealing Using MEMS"

• *Materials Research Society Fall Meeting*, Boston, MA 1999
79. “High-Temperature Thermomechanical Properties of Silicon Nitride Films used in MEMS”
80. “Microscale Rapid Prototyping Using UV Curing Polymers”

vi) Presentations and Teacher/Student Workshops on preK-12 Science/Engineering Education

1. "Understanding How Things Work; an Innovative Approach to Early Childhood Science Teaching: Exploring the Bathroom" Series of one-day workshops for 60 teachers from 9 Massachusetts school districts (with K. Camara and C. Rogers), funded by the Massachusetts Department of Education, 1993

2. "Streamlining Early Science Education Curricula" one month workshop for 8 teachers and 15 Tufts students (with D. Alexander and C. Rogers), funded by the Pew Charitable Trusts, 1993

3. "Understanding How Things Work; an Innovative Approach to Early Childhood Science Teaching: Exploring the Bicycle" Series of one-day workshops for 60 teachers from 12 Massachusetts school districts (with K. Camara, C. Rogers, B. Chrochetiere) funded by the Massachusetts Department of Education, 1994

4. "Innovative Approaches for Early Science Education", GTE Gifts program; one day workshop for 150 selected math and science teachers (1994)

5. " Development of a novel preschool science curriculum" one month workshop for teachers from the Sunny Hill Preschool, funded by the Pew Charitable Trusts, (1994)

6. "Understanding How Things Work; an Innovative Approach to Early Childhood Science Teaching: Exploring toys" Series of one-day workshops for 80 teachers from 12 Massachusetts school districts (with K. Camara, and B. Chrochetiere), funded by the Massachusetts Department of Education, 1995

7. “Girls in Engineering Initiative” Month-long summer program for high school girls; funded by the Nynex foundation (with P. Wong) 1996

8. “ Development of Engineering Elements in the science curriculum of an all-girl school” in collaboration with the Winsor School for Girls (1996)

9. “Girls in Engineering; Science Museum Exhibit Development”, Collaboration with the Discovery Museums in Acton and five schools (with P. Wong and others) funded by the National Science Foundation (1997)

10. " Middle School Science Curricula Development" partnership with Prentice Hall to develop the new Middle School Science textbook edition (with M. Cyr) (1997-98)

11. "Infusion of Engineering in PreK-12 educational environments" funded by the Noyce foundation and the National Science Foundation (1999-present)

12 "Engineering Fellows" (with M. Cyr and D. Suvaine) partnership with Nashoba Regional School District to integrate engineering in grades K-10, funded by the National Schience Foundation (1999-2003)

13. "Girls Get S.E.T. (Science Engineering and Technology) for Life – Interactive Museum Exhibit Development" for Middle School Girls, partnership with the Discovery Museums, Acton MA, funded by Lucent Technologies (1999-2002)

Invited Testimonies at US Senate and Congress

"Introducing Engineering in K-12; the Massachusetts Victory" Science and Education Committees of the House, and Education Committee of the Senate, Washington DC, April 2001

Testified before the US Senate Science, Technology, Engineering and Math (STEM) caucus and the US Senate Commerce Committee sub-committee on Technology, Innovation and Competitiveness, Washington, D.C., 2006

Testify before the Subcommittee on Research and Science Education, House Committee On Science and Technology, Washington, DC, 2009

Testify before the US Senate Committee on Commerce, Science and Transportation on reauthorization of COMPETES Act, Washington, DC, 2010

Testify before the U.S. House Subcommittee on Early Childhood, Elementary and Secondary Education on the importance of engineering and the NCTL's work, April 2013

Selected Keynote speeches and invited talks on education reform and gender issues in education

"Why Girls Shun Science" invited talk, Worcester Public Schools, 1999

"Introducing Engineering in PreK-12 Educational Environments" Keynote Speaker, Technology Education Association of Massachusetts Annual meeting, Worcester, MA, 2000

"Introducing Engineering in PreK-12 Educational Environments" Northeast Tech Prep Conference, Cape Cod, MA, 2000

"Why Engineering is important in grades K-12?", Massachusetts Board of Education, Boston, MA, December 2000

"Introducing Engineering into the Massachusetts Public Schools; Next Go National," National Science Foundation leadership, Washington DC, February 2001

"Introducing Engineering into the Massachusetts Public Schools; Next Go National," National Academy of Engineering, Washington DC, February 2001

"Introducing Engineering in k-12; the Massachusetts Victory," Corporate Foundation Group organized by National Science Foundation, Washington DC, April 2001

Keynote speeches and invited talks on Introducing Engineering in K-12 Education

National Academy of Science, National Academy of Engineering, Institute of Medicine annual Presidents' circle event, Boston, MA, 2003

Secondary School Administrators Association meeting, Falmouth, MA, 2003

Annual Superintendents Conference, Falmouth MA, 2003

Technology/Prep. Roundtable, Falmouth, MA, 2003

Superintendents' Technology Forum, Southbridge, MA, 2003

Women, Leadership and the Workplace Conference, Federal Reserve Bank, Boston, MA, 2004

Advancing Technological Literacy Conference, ASME, Clearwater, FL, 2004

International Technology Education Association Annual Conference, Albuquerque, NM, 2004

Early childhood educators "Byte-Sized Education event," Revere, MA, 2004

Employer Education Forum, Bridgewater State College, MA, 2004

Technological Literacy Conference, National Academy of Engineering, Washington, DC, 2004

American Association of Museums Ann. Meet., Session on Innovation, New Orleans, LA, 2004

US Department of Education Summit on Assessment for High Schools, Boston, MA, 2004

Association of Science and Technology Centers, Session on University/Museum collaborations, San Jose, CA, 2004

New Jersey High School Summit to Reinvent High School Level Education, NJ, 2004

Technology Education Association of Pennsylvania Annual Meeting Camp Hill, PA, 2004

National DOE High School Leadership Summit, Washington, D.C., 2004

New Hampshire High School Summit, Concord, NH, 2005

Massachusetts Cultural Leadership Conference: "The New Normal: Navigating a Changing World," Boston, MA, 2005

Arkansas High School Summit, Little Rock, AK, 2005

Rhode Island Governor's "Making the Grade" Conference, Providence RI, 2005

Department of Education Title I Dissemination Project, Hyannis, MA, 2005

U.S. Senate Science, Technology, Engineering, and Mathematics (STEM) Caucus, inaugural event, Washington DC, 2005

Guest panelist on Department of Education monthly TV program, Washington, D.C., 2005

NH Math, Science and Technology Coalition, Conference, Manchester, NH, 2005

Indiana High School Summit: "Redesigning Indiana High Schools," Indianapolis, IN, 2005

National Academy Foundation 21st Annual Institute for Staff Development, San Diego, CA, 2005

Vermont Department of Education, “Take the Helm” conference, Stowe, VT, 2005

New Jersey Department of Education, “Generation Next and Reading First” Conference, Atlantic City, NJ, 2005

Association for Supervision and Curriculum Development Conference on Teaching and Learning, San Francisco, CA, 2005

Annual State Conference of the Massachusetts Association of School Superintendents and Massachusetts Association of School Committees, Worcester, MA, 2005

New Hampshire Council for Social Studies, Manchester, NH, 2005

Optical Society of America, Washington, D.C., 2006

Committee on Workforce Development, Providence, RI, 2006

American Society of Engineering Education Regional Conference, WPI, Worcester, MA, 2006

T-STEM Technical Assistance Session, Dallas, TX, 2006

“What’s Working in Education” conference, Charlotte, NC, 2006

Intel International Science and Engineering Fair Educator Academy, Indianapolis, IN, 2006

Rhode Island Tech Collective Annual Award Dinner, Warwick, RI, 2006

New Hampshire Department of Education “Engineering Science Literacy for the 21st Century Summit, Manchester, NH, 2006

National High School Leadership Summit, Raleigh, NC, 2006

2006 William E. Mahoney Seminar, U Mass, Amherst, MA, 2006

Philanthropy Roundtable - K-12 Education Conference, Dallas, TX, 2006

Minnesota Rural Education Association, Alexandria, MN, 2006

T-STEM conference, Dallas, TX, 2006

MIT Innovation Summit, Cambridge, MA, 2006

Christa McAuliffe Technical Conference, Nashua, NH, 2006

NASA/Goddard Space Center Engineering Colloquium, Greenbelt, MD, 2006

eTech Ohio conference, Columbus, OH, 2007

Association of Science Museum Directors, Honolulu, HI, 2007

Philanthropy Roundtable, San Francisco, CA, 2007

Engineering Dean’s Institute, San Juan, Puerto Rico, 2007

BIO 2007 National Biotechnology Teacher Leader Program, Museum of Science, Boston, MA, 2007

Engineering our Future NJ Statewide Conference, Stevens Institute, Hoboken, NJ, 2007

US/UK STEM Conference, Keynote, Boston, MA, 2007

NSF Engineering Education Grantees meeting, Keynote, Arlington, VA, 2007

IDEAS Boston 2007, Panel Member, Federal Reserve Bank, Boston, MA, 2007

Partners in Education Appreciation Breakfast Launching Mobile's Engaging Youth in Engineering Initiative, Keynote, Mobile, AL, 2007

Today's Education, Tomorrow's Workforce: The Future of the Global Workforce", Panel member, Harvard Business School Publishing Conferences, Boston, MA, 2007

National Middle School Association, Annual Meeting, Keynote, Houston, TX, 2007

STEM Legislative Symposium, Keynote, Minneapolis, MN, 2007

Panel Member, A New Day for Schools; The Expanded Learning Time Summit, Massachusetts DOE, U Mass, Boston,2007

Greater Boston Superintendents' Roundtable, Harvard Graduate School of Education, speaker, Cambridge, MA, 2008

Mass. Cultural Council Arts Education Advocacy Caucus, Opening Remarks, Boston, MA, 2008

Berkman Center for Internet and Society Luncheon Lecture Series, Harvard Law School, Cambridge, MA, 2008

Innovation Leadership Distinguished Lecture Series, College of Engineering and Computer Science, Florida Atlantic University, Boca Raton, FL, 2008

"Engineering Education: Achievement by Design" A Symposium Supporting the Engineering Academy Initiative for Alabama, Alabama STEM Coalition, Keynote, Birmingham, AL, 2008

State Science Supervisors Conference, Keynote, Boston, MA, 2008

National Science Teachers Association National Conference, Featured Speaker, Boston, MA, 2008

Student Transfer Symposium, opening remarks, Boston, MA, 2008

Massachusetts Association of School Superintendents Conference, panelist, Marlborough, MA, 2008

STEM Governor's Institute, Commonwealth of Pennsylvania Department of Education, Keynote, Hersey, PA, 2008

Opening Day of School, Andover Public School District, Remarks to teachers, Andover, MA, 2008

American Museum of Natural History/Carnegie Foundation Roundtable, panelist, New York, NY, 2008

Wayland Public Schools, Remarks to teachers, Wayland, MA, 2009

Google, Speech to staff, Cambridge, MA, 2009

New Jersey School Development Council's Annual Leadership Conference, Keynote, Rutgers University, New Brunswick, NJ, 2009

American Dental Society Dinner, Speech, Museum of Science, Boston, MA, 2009

Massachusetts Business Roundtable STEM Breakfast, Keynote, Museum of Science, Boston, MA, 2009

STEM Academy for Educators, Keynote, Lancaster, PA, 2009

Florida Engineering Society Annual Summer Conference, Keynote, Palm Beach, FL, 2009

Back-to-School Superintendent Conference, Keynote, Minneapolis, MN, 2009

CIO Strategy Exchange, Panel participant, New York City, NY, 2009

NASA Administrator Education Summit, Panel participant Washington, DC, 2009

Department of Defense, Education Summit, Keynote, Washington, DC, 2009

University of Rhode Island, Math and Science Learning Institute, Keynote and work session, Kingston, RI, 2009

Economic & Public Policy Breakfast Forum, Keynote, North Shore Chamber of Commerce, Ipswich, MA, 2009

Kenyon Bissell Grogan Symposium, "Innovations in Mathematics, Science, and Technology," Keynote, Brimmer and May School, Chestnut Hill, MA, 2010

Florida Engineering Society, "Engineering: A Powerful Force in Southwest Florida's Classrooms," Keynote, Florida Gulf Coast University, Fort Meyers, FL, 2010

National Space Grant Directors Consortium, Keynote, Washington, DC, 2010

"A New Vision for the Museum of Science—Integrating the Natural and Designed Worlds," Fox Hill Village, Westwood, MA, 2010

Federal Laboratory Consortium for Technology Transfer National Meeting, Panel participant, Albuquerque, NM, 2010

Mathematics and Science and Technology (MaST) MELS Science and Technology Symposium, Keynote, *Engineering is Elementary*, Montreal, QC 2010

North Shore Bank Annual Meeting, Keynote, Boston Marriott, Peabody, MA, 2010

Testimony, Senate Hearing on STEM Education, Washington, D.C., 2010

Florida Department of Education, Orange County Public Schools, Orlando, FL, 2010

Smaller Business Association of New England (SBANE), Massachusetts Breakfast Board, Westin Waltham-Boston, Waltham, MA, 2010

National Middle School Association, Featured Speaker, Baltimore, MD, 2010

Presentation to faculty, Emmanuel College, Boston, MA, 2011

Keynote, MIT Club of SW Florida, Naples, FL, 2011

"STEM at Work" for Engineers Week 2011, Keynote, Imaginarium, Ft. Meyers, FL, 2011

Speak, Brooksby Village, Danvers, MA, 2011

MIT Club of Cape Cod, Keynote, *Science in the K-12 schools; Oh My….do we have it WRONG,* Cape Codder Resort, Hyannis, MA, 2011

ASME, Ralph Coats Roe Lecture as part of the Ralph Coats Roe Award, Dallas, TX, 2011

"Advancing Girls in STEM: an NGCS Symposium," National Coalition of Girls' Schools, Keynote, *Science in the K-12 schools; Oh My….do we have it WRONG,* Wellesley College, Wellesley, MA, 2011

Quebec STEM Symposium 2011, Keynote, Laval, Quebec, 2011

Keynote, *Re-engineering the Curriculum,* Boston Arts Academy, Boston, MA, 2011

Lynn Business Education Foundation, Annual Meeting, Keynote, Lynn, MA, 2011

"The 8th Annual sySTEMnow Conference," Keynote, Milwaukee, WI, 2011

The Successful You: 2011 Women's Leadership Forum, "Fireside Chat," "Trends in Women's Leadership and STEM," Microsoft NERD Center, Cambridge, MA, 2011

"The E4: Excellence in Elementary Engineering Conference," Keynote, University of MN Continuing Education and Conference Center, St. Paul, MN, 2011

"Engineering Leadership for the Conceptual Age", Lecture, College of Engineering, University of Texas at El Paso Lecture Series, El Paso, TX, 2011

Minnesota's Educators of the Gifted and Talented Annual Conference, Keynote, Brainerd, MN, 2012

Vermont Science Teachers Association, VSTA STEM Conference, Keynote, Stoweflake Inn, Stowe, VT, 2012

"Update on Engineering in K-12 Education," Plenary Talk, ASEE Deans Conference, Kauai, HI, 2012

Dana Hall School, Talk to members of Faculty, Wellesley, MA, 2012

National Center for Women and Information Technology (NCWIT), Summit on Women and IT, Keynote, Chicago, IL, 2012

Central Pennsylvania STEM Regional Conference, Keynote, Milton PA, 2012

2nd U.S.-China Experts' Meeting on Science Education, Panel participant, "*Integrating Technology and 21st Century Skills into Instruction,*" Washington, DC, 2012

Orange County Public Schools Professional Development Conference, Keynote, Orlando, FL, 2012

University of Nevada, College of Engineering Distinguished Lecture Series, University of Nevada, Reno, NV, 2012

Florida School Boards Association Annual Joint Conference, Keynote, Tampa, FL, 2012

CSUN Lecture, California State University, Northbridge, CA, 2012

Scholastic Magazine, NYC, 2013

St. Stephans School, presentation to educators and administrators, Bradenton, FL, 2013

McNeese State University, Speech to educators, University Academics, Funders, Politicians, Lake Charles LA, 2013

2013 ECSITE Conference, member on 4 panels giving talks to museum professionals, Goteborg, Sweden, 2013

The Hellenic Alumni Association of Tufts University, Speech, Karamanlis Foundation, Athens, Greece, 2013

American Community School of Athens, Commencement Address, Athens, Greece, 2013

Latin American and Caribbean Consortium of Engineering institutions, Keynote, Cancun, Mexico, 2013

PegaSystems, Speaker, Women's Insight Forum, Cambridge, MA 2013

Didactica 2013, K-12 Keynote Speaker, Toulouse/Paris, France, 2013

Florida Atlantic University, School of Engineering, Distinguished Lecturer, Boca Raton, FL, 2013

Broward County Public Schools, Speaker, "Sharing the vision of STEM Education", Orlando, FL 2013

U.S. News STEM Solutions Conference, ASME Decision Point Dialogues, Panel participant, Washington, D.C, 2014

Treasurers' Club of Boston, Featured Speaker, Lecture Series, Harvard Club of Boston, Boston, MA, 2014

Chelsea Boys and Girls Club, Speaker, Chelsea, MA, 2014

EuroScience Open Forum (ESOF) Conference, Session Speaker, "Learning in the 21st Century", Copenhagen, Denmark, 2014

129th New England Association of Schools and Colleges (NEASC) Annual Meeting and Conference, Keynote, Copley Marriott, Boston, MA 2014

National Hellenic Society "Heritage Greece Program" (PanHellenic Conference), Keynote and panelist, Orlando, FL, 2014

Welcome and Kick Off, Engineering Roundtable, Museum of Science, Boston, MA, 2015

Virginia's Children's Engineering Conference, Keynote, Double Tree Hilton, Williamsburg, VA 2015

Keynote, Tufts Engineers' Symposium on behalf of the Gordon Institute for Innovation, Tufts-Boston Campus, Boston, MA, 2015

Keynote, 1st STEAM Barcelona International Conference, CosmoCaixa, Barcelona, Spain, 2015

Speaker, Altman Distinguished Lecture Series, Newton Lifelong Learning, Newton Centre, MA, 2015

Presenter and institution award recipient for National Science Board Award, National Science Foundation, Washington, D.C., 2015

Commencement Speaker, State University of New York (SUNY) Polytechnic Institute, Utica, NY, 2015

Panelist, Key Decision Maker Panel, University of Massachusetts Boston Club, Boston, MA, 2015

Panelist, 2015 ECSITE Annual Conference Panel, MUSE, Trento, Italy, 2015

Keynote Speech and Panelist, 2015 International Workshop-"Let's Make It", National Taiwan Science Education Center (NTSEC), Taiwan, China, 2015

Storyteller, 5th Annual Babson Food Day, Babson College, Wellesley, MA, 2015

Keynote, Virtual E Conference-"Putting Engineering Back in STEM!", Orlando, FL, 2015

Keynote Address, ACS Athens Colloquium 2016, Athens, Greece, 2016

Speaker, "STEM for Lifelong Learning: needs to cultivate engineering mind", National Science Museum, Bangkok, Thailand, 2016

Speaker, Jackson-Walnut Park Schools, Newton, MA, 2016

Speaker, ECSITE Annual Conference, Gratz, Austria, 2016

Speaker, The Park School, Brookline, MA, 2016

Speaker, KOFAC Conference, Seoul, South Korea, 2016

Keynote Speaker, 2016 ECSITE Directors Forum, Parque de las Ciencias, Granada, Spain, 2016

Speaker, Collaborative Network Team Meeting, Plantation Elementary School, Plantations, FL, 2017

Keynote Speaker, NEMO Annual Meeting, Amsterdam, Netherlands, 2017

Panelist, U.S. News STEM Leadership Hall of Fame Honoree Discussion, San Diego, CA 2017

Panelist, ECSITE Annual Conference, Porto, Portugal, 2017

Keynote Speaker, Luxembourg Science Center Opening, Differdange, Luxembourg

Plenary Session Speaker, Science Centre World Summit, Tokyo, Japan, 2017

Guest Speaker, Mathworks 2018 Annual Meeting, Boston, MA, 2018

Guest Lecture, CATS Academy, Braintree, MA, 2018

Speaker, Hellenic American Chamber of Commerce, New York, NY, 2018

Panelist, Boston Business Journal Forum: How to reposition your organization and revitalize your brand, Boston, MA

Speaker, Fenway High School/Museum of Science Partnership Event, Boston, MA, 2018

Panelist, STEM Education Advisory Panel Committee, Alexandria, VA, 2018
Speaker, "Creating the Next Generation of Problem Solvers, Innovators and Engineers", Massachusetts State House, Boston, MA, 2018

URL Links, Selected Testimony and Video Presentations

May 16, 2010: Commencement speaker, Boston University College of Engineering
Part I: http://www.youtube.com/watch?v=sf6mOZiSVBs
Part II: http://www.youtube.com/watch?v=fGm3cHbPKJQ

May 6, 2010: Testimony before U.S. Senate Committee on Commerce, Science and Transportation regarding the re-authorization of the America COMPETES Act.
http://commerce.senate.gov/public/index.cfm?p=Hearings

October 22, 2009: Testimony before U.S. House Research and Science Education Subcommittee, Committee on Science and Technology, regarding K-12 Engineering Education:
http://science.house.gov/publications/hearings_markups_details.aspx?NewsID=2639 (Click under "Webcast Video)

February 14, 2008: Speech on "Engineering in Education" at the Harvard Berkman Center for Internet & Society
http://blogs.law.harvard.edu/mediaberkman/2008/02/14/ioannis-miaoulis-on-engineering-in-education-podcast-video/