

Milosh T. Puchovsky, PE, FSFPE

Fire Protection Engineer

Professor of Practice: Associate Department Head

Co-Director Center for Global Public Safety

Past President – Society of Fire Protection Engineers

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Summary of Experience

Milosh is Professor of Practice, and Associate Head in the Department of Fire Protection Engineering at Worcester Polytechnic Institute where his academic and professional interests focus on: (a) fire and life safety systems including sprinkler systems, fire pumps and detection; (b) fire hazard analysis and fire behavior including the application of computer fire models; (c) means of egress and occupant evacuation; (d) fire safe building construction; (e) design and installation practices; and (f) building and fire codes. Milosh is also Co-Director of the WPI Tsinghua University Center for Global Public Safety

Milosh was previously Assistant Vice President and Standards Council Secretary at the National Fire Protection Association (NFPA) overseeing the technical and regulatory development of all NFPA codes and standards. While at NFPA, Milosh also served as Principle Engineer responsible for key standards such as NFPA 13 - *Sprinkler Systems*, NFPA 14 – *Standpipe Systems*, NFPA 20 - *Fire Pumps*, NFPA 92 – *Smoke Control Systems*, NFPA 101 - *Life Safety Code*, NFPA 5000 - *Building Code* and the *Fire Test Standards*, among others.

As a practicing engineer, building code consultant and loss control specialist for the insurance industry, Milosh designed, specified and evaluated a wide range of active and passive fire and life safety systems and features, and led building and infrastructure projects across the globe.

Milosh remains professionally active internationally by: (a) developing and teaching engineering courses and technical programs; (b) providing expert analysis of fire protection systems and features, and providing litigation support; (c) leading fire safety research projects; (d) authoring, editing and reviewing technical publications; and (e) serving on industry committees and technical panels that develop regulations and standards of practice including those of the NFPA, SFPE, and Underwriter's Laboratories.

Milosh is past president and a Fellow of the SFPE, and is a member of the Society's Engineering Licensing Committee. Milosh earned two engineering degrees, holds a professional engineering license in Fire Protection, and is a noted author and speaker.

Summary of Qualifications and Skills

- Full-time professor and registered professional engineer holding MS and BS degrees
- Subject matter expert providing litigation support for fire loss, system malfunction and patent infringement
- Fire protection system design analysis and performance evaluation
- Building and fire code consultation
- Calculation of fire behavior using computer models
- Occupant egress analysis including timed egress studies
- 3rd party design and code compliance reviews
- Standardized fire testing protocols and procedures
- Insurance loss control services and inspections
- Course and seminar development and delivery in traditional and on-line formats
- Engineering project management for domestic and international projects
- Business development including engaging prospective clients, writing proposals and marketing services
- Professional society leadership & strategic planning
- Author and technical editor for SFPE Fire Protection Engineering Handbook, and NFPA's response to NIST investigation on World Trade Center Disaster and Station Night Club Fire, among others

Employment History

Worcester Polytechnic Institute, Department of Fire Protection Engineering, Worcester, MA
2017 – Present Associate Department Head, and Co-Director Center for Global Public Safety
2008 – Present Professor of Practice, and Director of Corporate & Professional Education
2003 – 2007 Adjunct Associate Professor

National Fire Protection Association, Quincy, MA
2007- 2008 Assistant Vice President – Codes & Standards Administration; Standards Council Secretary
2003 – 2007 Principal Fire Protection Engineer – Building and Life Safety Codes
2003 – Present Principal Instructor – NFPA Technical Fire Safety Seminars

Arup Fire, (Ove Arup & Partners Massachusetts Inc.) Cambridge, MA
2001 – 2003 Senior Consulting Fire Engineer

National Fire Protection Association, Quincy, MA
2000-2001 Director, Codes and Standards Development – Standard Administration
1996-2000 Senior Fire Protection Engineer - Systems and Applications Engineering
1993-1996 Fire Protection Engineer – Systems and Applications Engineering

Chubb Group Of Insurance Companies, Boston, MA
1992-1993 Loss Control Specialist

Foehl Sherman, Inc. Burlington, Ma
1991 Consulting Fire Protection Engineer and Building Code Consultant

Rolf Jensen and Associates, Inc. Concord, CA (Fire Protection Engineering Consulting Firm)
1988-1989 Fire Protection Engineer & Building Code Consultant

Education

- M.S. (Fire Protection Engineering) Worcester Polytechnic Institute, Worcester, MA, 1991
- B.S. (Mechanical Engineering) Worcester Polytechnic Institute, Worcester, MA, 1988
- Executive Certificate in Management and Leadership, MIT Sloan School of Management (in progress)

Registration

Registered Professional Engineer (Fire Protection), Massachusetts (License number 38530)

Professional Affiliations

National Fire Protection Association: Member
Society of Fire Protection Engineers: President (2016); Past President, New England Chapter

Honors

Fellow – SFPE (2008); Hats Off Award – SFPE (2015); Faculty Achievement Award – WPI (2016)

Teaching, Training and Course Development Responsibilities

WPI Department of Fire Protection Engineering - Graduate Engineering Courses (responsible for development and delivery; traditional face-to-face, on-line and blended delivery methods)

- FP 553 – Fire Protection Systems – Students who complete FP 553 will have developed a practical technical understanding of design principles for automatically activated fire protection systems including sprinkler, standpipe, fire pump and water supply. Relevant physical phenomena, functionality and purpose of these systems are introduced, as are associated calculation and assessment techniques, regulations, equipment requirements, and product approval evaluations. (Co-instructed prior to full time appointment at WPI in 2008)
- FP 554 – Advanced Fire Suppression – Students who complete FP 554 will have developed a practical technical understanding of the purpose and design principles for water spray, water mist, residential sprinkler, clean agent, halon, carbon dioxide, foam, and wet chemical fire suppression systems and devices. Structural support and bracing of fire suppression systems are also introduced.
- FP 555 – Detection, Alarm and Smoke Control - Students who complete FP 555 will have developed a practical technical understanding of design principles for: (a) fire detection systems using flame, heat and smoke detector technology, (b) fire alarm, occupant notification and control systems, and (c) smoke control systems based on buoyancy and pressure differences across barriers for the purpose of occupant survivability.
- FP 570 – Building Fire Safety – Students who complete FPE 570 will have developed a practical technical understanding of the building design process and the roles of project stakeholders in addressing fire and life safety concerns principally through the application of building regulations, standards of practice, construction features, passive and active systems, means of egress, fire test methods, and the use of interior finish materials.
- FP 571 – Performance Based Design – Students who complete FPE 571 will have developed a practical technical understanding of the differences between applying traditional code mandated prescribed fire protection, and the need for implementing computer models and other calculation techniques in developing and assessing solutions for specific fire safety concerns. (Co-instructed prior to full time appointment at WPI in 2008)
- FP 580B – Business Practices in Fire Protection Engineering – Students who complete this course will have developed an understanding of the financial considerations and business aspects associated with the profession of fire protection engineering. Students will prepare professional quality business plans, technical proposals, cost estimates, timelines, project budgets, invoices and engineering reports.

WPI Department of Fire Protection Engineering - Undergraduate Engineering Courses

- FP 3070 – Fundamentals of Fire Safety – Guest lecturer
- FP 3080 – Introduction to Building Fire Safety System Design – Content development and lead instructor

WPI Department of Corporate and Professional Education

- Developed custom tailored programs and courses on various FPE topics to corporate entities.

Northeastern University - Industry Related Seminars (traditional face-to-face program, 1995 - 2002)

- Professional Engineering Exam Preparation Course for Fire Protection Engineering

NFPA – Industry Related Seminars (traditional face-to-face programs, 1993 – present)

- Installation of Sprinkler Systems (NFPA 13)
- Inspection, Maintenance and Testing of Water-Based Fire Protection Systems (NFPA 25)
- Fire Pumps (NFPA 20)
- Sprinkler System Hydraulics
- Automatic Sprinkler Systems & Fire Alarm Systems Plans Review
- Life Safety Code Essentials & Life Safety Code Health Care (NFPA 101)
- Life Safety Code – Focus on Occupancies (NFPA 101)
- Health Care Facilities (NFPA 99)
- National Fire Alarm & Signaling Code (NFPA 72)
- Special Suppression Systems (NFPA 11 - *Low, Medium and High-Expansion Foam Systems*; NFPA 12 – *Carbon Dioxide Systems*; NFPA 15 – *Water Spray Fixed Systems*; NFPA 17 - *Dry Chemical Extinguishing Systems*; NFPA 17A – *Wet Chemical Extinguishing Systems*; NFPA 750 – *Water Mist Systems*; NFPA 2001 – *Clean Agent Fire Extinguishing Systems*; NFPA 2010 – *Fixed Aerosol Fire Extinguishing Systems*)
- Code Requirements for Maintaining Fire & Life Safety Systems
- Smoke Control Systems (NFPA 92)

Technical Committee Memberships

SFPE: President 2016; Board of Directors 2017-2007; Strategic Planning Committee Chair, 2014

UL Standards Technical Panel 199 – Sprinkler Equipment for Fire Protection – Member, 2015 - Present

SFPE Professional Engineering Exam Licensing Committee – Member, 2003 - Present

Underwriters Laboratories Fire Council – Member, 2010 – Present

SFPE Executive Director Search Committee – Member, 2008 – 2009

NFPA TC on Safety to Life Fundamentals (NFPA 101, NFPA 5000) – Member, 2001-2003, 2009 - Present

NFPA TC on Residential Sprinkler Systems (NFPA 13D & 13R) - Staff Liaison, 1996 -2000; Member, 2010 – Present

NFPA TC on Sprinkler System Discharge Criteria (NFPA 13) – Staff Liaison, 1996-2000; Member, 2001-2003, 2014 - Present

NFPA TC on Fire Pumps (NFPA 20) – Staff Liaison, 1996-2001; Member 2001-2003, 2009 - Present

NFPA TC on Commissioning & Integrated Testing (NFPA 3 & NFPA 4), Member 2011 - Present

NFPA Technical Committee on Water Mist Systems (NFPA 750) - Staff Liaison, 1994 - 1997; Member 2009 - Present

NFPA TC on Cultural Resources (NFPA 909, 914) - Staff Liaison, 2003 - 2007; Member 2009 – present

NFPA TC on Contents & Furnishings (NFPA 101 & NFPA 5000) - Staff Liaison, 2003 – 2007; Member 2010 – Present

NFPA TC on Health Care Facilities – Fundamentals (NFPA 99) – Member 2014 - Present

FPRF Technical Advisory Panel on Residential Sprinkler Systems – 2008 - Present

NFPA Standards Council – Secretary, 2007 - 2008

FPRF Research Advisory Panel – Member, 2007 – 2008

ANSI Executive Standards Council – Member, 2007 - 2008

FPRF Technical Advisory Panel on Risk Methods – Member, 2006 – 2007

FPRF Technical Advisory Panel on Evacuation of High Rise Occupants – Member, 2006 - 2007

NFPA High-Rise Building Safety Advisory Committee – Secretary, 2004 – 2007

NFPA TC on Fire Risk Assessment Methods (NFPA 550, NFPA 551) Staff Liaison, 1999-2001, 2003-2007

NFPA TC on Industrial and Storage Occupancies (NFPA 101 and NFPA 5000) Staff Liaison, 2003 – 2007

NFPA TC on Fire Safety Features (NFPA 101 and NFPA 5000) Staff Liaison, 2003 – 2007

NFPA TC on Mercantile and Business Occupancies (NFPA 101 and NFPA 5000) Staff Liaison, 2003 – 2007

NFPA TC on Smoke Control Systems (NFPA 92A, NFPA 92B, NFPA 204) Staff Liaison, 2003 – 2007

NFPA TC on Fire Doors (NFPA 80, NFPA 105) Staff Liaison, 2003 – 2007

NFPA In-house Task Group on Performance-Based Codes – Chair, 1993 – 2001, 2003 – 2007

NFPA In-house Resource Team on Homeland Security and Critical Infrastructure – Member, 2005 - present

SFPE Task Group on Performance-Based Design and Analysis – Member 2003 – Present

TC on Hazards and Risk of Contents and Furnishings (NFPA 555, NFPA 556, NFPA 557) - Staff Liaison, 2003 – 2007

Puchovsky Curriculum Vitae

Inter-jurisdictional Regulatory Collaboration Committee (International Performance-Based Building Codes) - Member, 2003 – 2007

NFPA TC on Fire Tests (30 fire test standards) - Staff Liaison, 2003 – 2005

NFPA TC on Manufactured Housing (NFPA 225, NFPA 501, NFPA 501A) – Staff Liaison, 2003 - 2005

NFPA TC on Automatic Sprinkler Systems (NFPA 13, NFPA 13D, NFPA 13R) Staff Liaison, 1996 -2000, Principle Member, 2001-2003

SFPE Design Team Liaison Task Group – Member, 1999 - 2003

NFPA TC on General Storage (NFPA 231, 231, NFPA 231D, NFPA 231E, NFPA 231F, NFPA 46) Staff Liaison, 1993-2000

ISO TC 21/SC5 – Sprinkler and Water Spray Extinguishing Systems – Secretary, 1996 – 2001

NFPA TC on Standpipe Systems (NFPA 14) Staff Liaison, 1993-1997

NFPA TC on Private Water Supply Piping (NFPA 24, NFPA 291) Staff Liaison, 1993 – 1997

NFPA TC on Water Spray Systems (NFPA 15) Staff Liaison, 1993-1997

NFPA TC on Foam Water Sprinkler Systems (NFPA 16, NFPA 16A) Staff Liaison, 1993-1997

NFPA TC on Record Protection (NFPA 232, NFPA 232A) Staff Liaison, 1993-1997

Selected Engineering Design Experience

OMMA Concert Hall, Athens, Greece

Project leader responsible for conducting an NFPA 101 fire and life safety analysis for Greece's premier concert hall expansion. Served as primary contact for this Athens based architectural and construction firm. The project, most of which was underground, included two new concert halls (one of which was 13 stories in height), parking facilities, banquet facilities, exhibition center and numerous vertical openings. A combination of prescriptive and performance based design methods were employed.

High Museum, Atlanta, GA

Conducted fire engineering analysis involving computational fluid dynamics computer program to form the basis of a code variance for a sprinkler system installation. Fire development and sprinkler response were assessed to identify options for preserving the unique ceiling structure proposed by the architect. Successfully negotiated the approach and solution with the building official.

Downtown Transit Center, New York City, NY

Conducted fire, life safety and risk assessments for the redevelopment of the former World Trade Center site. Included analysis of potential extreme events including those associated with fire, blast and biochemical threats.

Massachusetts Institute of Technology, Main Group Master Plan, Cambridge, MA

Conducted fire protection and life safety master plan for the renovation of MIT's main group buildings. Identified options for preserving the historic character and functionality of this cluster of historic buildings that function as a single structure.

King Abdulaziz Airport, Jeddah, Saudi Arabia

Project included a major airport expansion project including airport terminal building and parking facilities. Client was an architect based in the Hague, Netherlands. Conducted an NFPA 101 analysis and developed equivalent means of protection through the use of fire engineering and computer modeling.

Dulles Airport Expansion, Sterling, Virginia

Code analysis, fire safety strategy development, computational fire and smoke management study for the construction of a new midfield concourse and APM station. Included CFD computer modeling, egress analysis and assessment of fire size and growth for APM vehicles.

Unified Science Center, Hamilton College, Clinton, New York

Smoke management study for the renovation of a 1920's era building. Included strategy development and smoke movement calculations for a complex new atrium.

Honolulu International Airport, Honolulu, HI

Development and expansion of new international airport terminal. Prepared overall fire protection strategy, conducted code analysis, and identified and resolved code issues.

Harvard University, Cambridge, MA

Master plan survey and evaluation of various university buildings including hospitals, dormitories and academic buildings to identify deficiencies with regard to code compliance and fire protection systems.

Leeds School of Business, Boulder, CO

Smoke management system and life safety analysis for a new atrium building.

Ritz Carlton Hotel, San Francisco, CA

Renovation of a historic college building to a new luxury hotel. Prepared overall fire protection program, conducted egress analysis, and developed and negotiated alternative means of fire protection and life safety to preserve historic character of the building.

Downtown Plaza, Sacramento, CA

Development of six city blocks into a new covered shopping mall and entertainment complex. Prepared overall fire and life safety program, conducted egress analysis, and identified and developed alternative means of protection where strict compliance with building and fire code requirements was not possible.

FuelCell Energy, Torrington, CT

Fire hazard analysis of process equipment used in the production of fuel cells. Developed plan to mitigate associated fire and explosion hazards.

ABC Studios, New York, NY

Development of specifications for maintenance and testing of building fire protection systems. Sprinkler system design for storage areas.

Baker Library, Dartmouth College, Hanover, NH

Retrofit of automatic sprinkler system into historic library. Designed sprinkler and fire pump systems to achieve overall fire protection goals while maintaining the unique character of the building.

Publications and Technical Programs

Texts

“Interrelationship of NFPA Standards Pertaining to a Fire Pump Installation” Supplement 2, Stationary Fire Pumps Handbook, 5th Edition, NFPA, 2016.

Automatic Sprinkler Systems for Residential Occupancies Handbook, 2016 Edition, NFPA (Contributing Author)

SFPE Handbook of Fire Protection Engineering, 5th edition, SFPE, 2015 (Section Technical Editor for chapters on Design Calculations for Fire Protection Systems)

“Engineering Considerations for Fire Protection System Selection,” SFPE Handbook of Fire Protection Engineering, 5th edition, SFPE, 2015

Automatic Sprinkler Systems for Residential Occupancies Handbook, 2013 Edition, NFPA (Contributing Author)

Stationary Fire Pumps Handbook, 2013 Edition, NFPA (Contributing Author)

“Section 12, Structural Fire Protection”, Fire Protection Handbook, 20th edition, NFPA, 2008 (Section Technical Editor)

“Performance-Based Fire Codes and Standards,” Section 4, Chapter 13, Fire Protection Handbook, 19th ed, NFPA, 2003

“The Application of Performance-Based Design Concepts for Fire and Life Safety”, Supplement 7, Life Safety Code Handbook, 9th and 10th editions, NFPA, 2003, 2006

“Section 10, Water Based Fire Protection Systems”, Fire Protection Handbook, 19th edition, NFPA, 2003 (Section Technical Editor)

“Fire Pump Controllers and Electric Power Supplies for Fire Pumps”, Section 10, Chapter 8, Fire Protection Handbook, 19th edition, NFPA, 2003 (with James Nasby)

“Automatic Sprinkler Systems”, Section 10, Chapter 11, Fire Protection Handbook, 19th edition, NFPA, 2003

“Pumps for Fire Protection,” 1st edition, NFPA, 2002 (with Ken Isman)

“A Brief Introduction to Sprinkler Systems for Life Safety Code Users,” Supplement 3, Life Safety Code Handbook, 8th edition, NFPA, 2000

“Automatic Sprinkler Systems Handbook” 8th edition, NFPA 1999

"Fire Pump Handbook," 1st edition, NFPA, 1998 (with Ken Isman)

"Automatic Sprinkler Systems Handbook" 7th edition, NFPA 1996

"Performance-Based Fire Codes and Standards," Section 11, Chapter 9, Fire Protection Handbook, 18th ed, NFPA, 1997

"General Indoor Storage," Section 9, Chapter 18, Fire Protection Handbook, 18th edition, NFPA, 1997

"Outdoor Storage Practices," Section 9, Chapter 19, Fire Protection Handbook, 18th edition, NFPA 1997

Reports & Periodicals

“Li-Ion Battery Energy Storage Systems - Effect of Separation Distances based on a Radiation Heat Transfer Analysis: A Graduate Independent Study Research Project” (with V. Hutchison), Worcester Polytechnic Institute, Worcester, MA, June 2017

“The Cookbook Approach: Just Follow the Recipe for Success”, *Fire Protection Engineering Magazine*, President’s Column, SFPE, 4th Quarter, 2016

“The Most Interesting Person in the World”, *Fire Protection Engineering Magazine*, President’s Column, SFPE, 3rd Quarter, 2016

“Home Sweet Home” *Fire Protection Engineering Magazine*, President’s Column, SFPE, 2nd Quarter, 2016

“Do Your Job” *Fire Protection Engineering Magazine*, President’s Column, SFPE, 1st Quarter, 2016

“Forensic Fire Scene Analysis Using Computational Fluid Dynamics (CFD): A Major Qualifying Project Report”, (with F. Kang, R. Kennedy, D. Savva, T. Rabidou, C. Wood), Worcester Polytechnic Institute, Worcester, MA, May 2016

Puchovsky Curriculum Vitae

- “Occupant Egress Time: An Interactive Qualifying Project Report”, (with C. Parisi, L. Renner, A. Teliska, L. Waugh), Worcester Polytechnic Institute, Worcester, MA, May 2016
- “Piping Arrangements for Fire Pumps” *Consulting Specifying Engineer Magazine*, March 2015
- “Inspection, Testing and Maintenance Of Fire Safety Systems in Oil Refineries” *Conference Proceedings - 5th SFPE Saudi Arabian Chapter Conference*, Dammam, Saudi Arabia, September 2014
- “The Effect Wood Pallets Have on Warehouse Sprinkler System Design: Graduate Student Project Report,” Worcester Polytechnic Institute, Worcester, MA, January 2014
- “Deciding on Fire Protection Systems: What Factors Come into Play?” *Consulting Specifying Engineer Magazine*, May 2013
- “New Approaches for Designing Fire Pump Installations”, *Consulting Specifying Engineer Magazine*, December 2012
- “Evaluating Occupant Load Factors For Business Operations” (with T. Muha, B. Merrifield, T. Thackeray and T. Wood), Fire Protection Research Foundation, Quincy, MA, April 2012.
- “New Design Considerations for Clean Agent Fire Suppression Systems”, *Consulting Specifying Engineer Magazine*, May 2011
- “Safety in Tall Buildings”, *NFPA Journal*, March/April 2007
- “Performance Design Anxiety”, *Engineering News Record*, February 21, 2005 (Contributing Author)
- “Smoke Control: to CFD or not to CFD – M/E Roundtable”, *Consulting Specifying Engineer*, January 2005
- “Peak Pump Performance,” *NFPA Journal*, May/June 2000.
- “Performance-Based Design from Start to Finish”, *NFPA Journal*, January/February 2000
- “NFPA 13: What You Need to Know About the 1999 Edition,” *NFPA Journal*, May/June 1999
- “Fire Protection Strategies for Lumber Storage Yards,” *Journal for Lumberyard Operators*, August 1998
- “Restructuring NFPA’s Sprinkler Project,” *Sprinkler Age*, February 1998.
- “What’s New In Sprinklers,” *NFPA Journal*, January/February 1998 (contributing author)
- “Just Ask – Sprinklers Systems,” *NFPA Journal*, September/October 1997
- "Sprinkler Obstructions - How NFPA 13 Deals with Them," *Sprinkler Age*, June 1997
- "Performance-Based Versus Prescriptive Fire Safety Codes," *Skylines*, October 1996
- “Thirty Years of Suppression Systems,” *NFPA Journal*, September/October 1996 (contributing author)
- "NFPA's Perspectives on Performance-Based Codes and Standards," *Fire Technology*, Nov/Dec 1996
- "Changes to NFPA's Sprinkler Standard," *Plumbing Engineer*, June 1996
- "Entering the Next 100 Years of Standardized Sprinkler System Technology," *Sprinkler Age*, March 1996
- “Changes to NFPA 13D,” *Sprinkler Age*, March 1996
- "Developing Performance-Based Documents One Step at a Time," *NFPA Journal*, Jan/Feb 1996
- "NFPA's Future in Performance-Based Codes and Standards," National Fire Protection Association, July 1995 (with A. Cote, R. Coté, R. Fahy, C. Crant, J. Hall, and R. Vondrasek)

Technical Peer Reviews of Journal Manuscripts and Reports

- “Tenability Analysis in a Tobacco Workshop with an Enclosure Fire Zone Model,” *Fire & Materials*, Ms. Ref. No.: FAM-15-0125, February, 2016.

Puchovsky Curriculum Vitae

“Characterization of Water Mist Systems using Full-scale Tests and Computer Modeling”, *Fire Technology*, Ms. Ref. No.: FIRE-D-15-00204, August, 2015.

“2014 Assessment Report of the Halon Technical Options Committee”, United Nations Environment Programme (UNEP), Ozone Secretariate, P.O. Box 30552, Nairobi, Kenya, 2014.

“Probabilistic Assessment of Occupant Load Density in Retail Buildings”, *Fire Safety Journal*, Ms. Ref. No.: FISJ-D-14-00014, April 2014.

“Distinction of Fire Source from Smoke using Discrete Probability Distribution and Neural Networks”, *Fire Technology*, Ms. Ref. No.: FIRE-D-13-00134, January 2014.

“Comparative Investigation of Smoke Control Modes in Long Corridor of High-rise Buildings”, *Fire Technology*, Ms. Ref. No.: FIRE-D-13-00006, April 2013.

“Theoretical Analyses and Experimental Studies on Flashover Inhibition by Water Mist”, *Fire Technology*, Ms. Ref. No.: FIRE-D-12-00589, January 2013.

“A Review of State of Art in Pyrolysis / Evaporation Model and Integrated Artificial Neural Network (ANN)-Genetic Algorithm (GA) for Model’s Property Estimation”, *Fire and Materials*, Ms. Ref. No.: FAM-12-0022, June 2012.

“Assessment of Fire Safety for Mezzanine Floors Compared with Prescriptive Code Requirements”, *Fire Safety Journal*, Ms. Ref. No.: FISJ-D-11-00106, July 2011.

Technical Programs & Presentations

“Lithium-Ion Battery Energy Storage Systems: Characterizing Fire Incidents and Effective Protection Schemes,” (with V. Hutchison), NFPA Conference and Expo, Boston, MA, June 6, 2017

“Fire Safety Engineering Practice – Graduate and Undergraduate Education and Research,” (with T. El-Korchi), *First Workshop on Fire Safety Engineering*, University of Campinas, Campinas, Brazil, March 23, 2017

“Advanced Design Concepts and Calculations for Fire Alarm Systems,” *Seminario: Bombas Contra Incendio Basado en NFPA 72*, Fire Prevention Institute, Mexico City, Mexico, February 28-29, 2017

“An Overview of the Fire Hazards Associated with Lithium Ion Batteries,” (with V. Hutchison), *International Association of Arson Investigators – Massachusetts Chapter Technical Seminar*, Auburn, MA, November 17, 2016

“Advanced Topics on the Application and Use of Fire Pumps,” *Seminario: Bombas Contra Incendio Basado en NFPA 20*, Fire Prevention Institute, Mexico City, Mexico, November 14-15, 2016

“Careers in Fire Protection,” *Massachusetts STEM Summit 2016*, (with A. Kimball, K. Bigda, J.C. Harrington) Worcester, MA, November 1, 2016

“Using FDS for Fire Scene Analysis,” *SFPE Conference and Expo*, (with B. Rabidou, D. Savva, F. Kang, R. Kennedy, C. Wood) Denver, CO, September 2016

“Recent Changes to NFPA 13 and the SFPE Handbook of Fire Protection Engineering,” *SFPE United Arab Emirates Chapter Meeting*, Dubai, UAE, April, 2016

“Computer Fire Modeling & Sprinkler System Design,” *SFPE New York Metro Chapter Technical Seminar*, New York, NY, March 2016.

“New Design Options for Fire Pump Installations,” 2016 NEAFPSD 25th Chapter Anniversary & Fire Protection Symposium, Bartlett, New Hampshire, March 2016

“The Proper Use of Fire Pumps & the 2016 Edition of NFPA 20,” *Fire Sprinkler Americas Conference*, International Fire Sprinkler Association, Medellin, Columbia, February 2016

“SFPE’s Strategic Plan”, *Technical Committee Meeting of the Fire Suppression Systems Association*, Fajardo, Puerto Rico, February 2016

“The Critical Impact of Fire Protection System Maintenance”, *SFPE United Arab Emirates Chapter Meeting*, Dubai, UAE, November 2015

“Designing for Inspection, Testing and Maintenance of Fire Protection Systems”, *NFPA Conference and Exposition*, Chicago, IL, June 2015

Puchovsky Curriculum Vitae

- “Using Fire Modeling to Establish Sprinkler System Design Criteria”, *SFPE Minnesota Chapter Meeting*, Roseville, MN, May 2015
- “New Means of Egress Provisions for NFPA 101”, *SFPE United Arab Emirates Chapter Meeting*, Dubai, UAE, February 2015.
- “SFPE’s New Strategic Plan”, *SFPE Conference and Expo*, Long Beach, CA, October 2014
- “Fire Pumps, NFPA 20 and Tall Buildings”, *SFPE United Arab Emirates Chapter Meeting*, Abu Dhabi, UAE, September 2014
- “Fire Pump Installations for Tall Buildings”, *NFPA Conference and Exposition*, Las Vegas, NV, June 2014.
- “Explosion Hazard Classification and the Use of Electrical Equipment”, *Technical Workshop for Riley Power, Inc.*, Worcester, MA, February 2014.
- “Fire Pumps: What You Need to Know”, *Fire Sprinkler America’s Conference*, Panama City, Panama, February 2014.
- “Setting Sprinkler System Performance Criteria when NFPA 13 Won’t Cut It”, *SFPE Rocky Mountain Chapter 1st Annual Fire Protection Symposium*, Boulder, CO, April 2013.
- “Update on SFPE Activities,” *SFPE New York Metro Chapter Meeting*, New York, NY, March 2013.
- “New Design Considerations for Fire Pump Installations,” *SFPE Engineering Technology Conference*, Savannah, GA October 2012
- “Sprinklers in Fire Engineered Solutions,” *9th International Fire Sprinkler Conference*, Paris, France, June 28-29, 2012
- “Appropriateness of Current Occupant Load Factors for Business Occupancies,” *NFPA Conference and Exposition*, Las Vegas, NV, June 2012
- “New Options for Fire Pump Installations,” *SFPE New York Metro Chapter Annual Seminar*, Brooklyn, NY, February 2012.
- “Systems Selection for Fire Protection – Factors that Should Influence a FPE’s Decision Making Process,” *SFPE Engineering Technology Conference*, Portland, OR, October 2011
- “Fire Protection Overview,” *Consulting Specifying Engineer Magazine, Fire & Life Safety Channel, On-line Video Series*, May 2011.
- “Update on NFPA-2001: Clean Agent Fire Extinguishing Systems,” *Consulting Specifying Engineering Webcast: Update on Fire Codes, Standards and Guidelines*, April 21, 2011.
- “Fire Protection System Selection for Special Hazards,” *SFPE Greater Atlanta Chapter 7th Annual Fire Safety Conference*, Duluth, GA, March 2011.
- “Applying NFPA 101, Life Safety Code,” *General Services Administration Regional Seminar*, Mashantucket, CT, October 2010.
- “Training Future Fire Protection Engineers,” *NFPA Conference and Exposition*, Las Vegas, NV, June 2010.
- “Advocating Sprinklers – A Report on Research, Code Changes and Other Initiatives at NFPA,” *New England Fire Protection Symposium*, West Dover, VT, March 2008.
- “Predicting Detector Actuation,” *Fire Protection Research Foundation Suppression and Detection Symposium*, Orlando, FL, March 2008 (session moderator)
- “NFPA and Fire Safety in High Rise Buildings: A Status Report,” *NFPA World Safety Conference and Exposition*, Boston, MA, June 2007.
- “An Approach for Applying Risk Concepts in the Development of Codes and Standards,” *NFPA World Safety Conference and Exposition*, Boston, MA, June 2007.
- “NFPA Regulations – Notices of Intent to Make a Motion for the National Electrical Code”, *NFPA Electrical Inspectors Forum*, Quincy, MA, May 2007.
- “NFPA High-Rise Building Safety Advisory Committee and the NIST/WTC Recommendations” *Fire Safety Directors Association of Greater New York – Spring Seminar*, New York, NY, May 2007.
- “Fire Detection, Alarm Systems and Human Behavior,” *Fire Protection Research Foundation Suppression and Detection Symposium*, Orlando, FL, March 2007 (session moderator)
- “Code Options for Rehabilitating Historic Buildings,” *Traditional Buildings Exhibition and Conference*, Boston, MA, March 2007

Puchovsky Curriculum Vitae

- “High Rise Buildings – Where Are the Codes Heading?” *Society of Fire Protection Engineers – New England Chapter*, Norwood, MA, November 2006 (with B. Tubbs)
- “NFPA 914 – Code for Fire Protection of Historic Structures and Building Rehabilitation,” *Protection Heritage International Conference*, Ljubljana, Slovenia, May 2006
- “Property and Life Safety in Health Care Facilities” *NFPA Niagara Frontier Chapter 2006 Spring Seminar*, Buffalo, NY, May 2006
- “Status Report on NFPA’s Response to the NIST WTC Recommendations,” *National Institute for Building Sciences – Multi-hazard Mitigation Council*, Washington, D.C., May 2006
- “The Concept of Fire Risk and Its Potential Impact on the Role of Sprinkler Systems,” *NFSA 2006 Annual Seminar*, South Hampton, Bermuda, April 2006
- “New Code Provisions for Building Rehabilitation,” *Traditional Buildings Exhibition and Conference*, Chicago, IL, April, 2006
- “NFPA’s Perspectives on High Rise Safety,” *National Council of Structural Engineering Associations*, Kansas City, MO, October 2005
- “NFPA’s Comments on Building and Fire Codes & Practices”, *Technical Conference on the Federal Building and Fire Safety Investigation of the World Trade Center Disaster*, National Institute of Standards and Technology, Gaithersburg, MD, September 2005
- “NFPA Comments to NIST’s Federal Building and Fire Safety Investigation of the World Trade Center Disaster” National Fire Protection Association, August, 2005 (with R. Solomon, R. Fahy, *et al.*)
- “Rehabilitating Tall Buildings in a Post 9/11 World,” *Traditional Building Exhibition and Conference*, Philadelphia, PA, April 2005
- “NFPA Comments to NIST’s Report of the Technical Investigation of the Station Nightclub Fire,” National Fire Protection Association, March 2005 (with R. Solomon, R. Cote, R. Fahy, *et al.*)
- “Balancing Life Safety with the Historic Preservation of Tall Buildings,” *Council on Tall Buildings & Urban Habitat International Conference on Tall Buildings in Historical Cities - Culture & Technology for Sustainable Cities*, Seoul, South Korea, October 2004
- “A Bottom-Up Analysis for Performance Designs” *5th International Conference on Performance-Based Codes and Fire Safety Design Methods*, Luxembourg, October 2004
- “Making Old Buildings Work: Building Rehab Code Provisions for Safety” *Restoration & Renovation Conference*, Boston, MA, April 2004 (with Marilyn Kaplan)
- “Sprinkler Systems as a Design Option for Historic Buildings”, *New England Fire Protection Symposium*, West Dover, VT, March 2004
- Global Policy Summit on the Role of Performance-Based Building Regulations in Addressing Societal Expectations, International Policy, and Local Needs, Washington, D.C., November 2003 (Session Chair and member of organizing committee)
- NIST Workshop on Fire Safety Design and Retrofit of Structures, Baltimore, MD, September 2003 (Work Group Facilitator)
- “NFPA’s Comments to the American Society for Healthcare Engineering of the American Hospital Association Alcohol-Based Hand Rub Solution Fire Modeling Analysis Report”, NFPA, July 2003 (w/ R. Solomon)
- “An Overview of Hanging and Bracing Requirements for Sprinkler Systems”, *Fire Prevention Association of Massachusetts - 17th Annual Educational Seminar*, Amherst, MA, April 2003
- “Sprinkler Systems – Which System for What Hazard?” *Massachusetts Building Commissioners and Inspectors Association – Monthly Meeting*, Sturbridge, MA, November 2002
- “Design Vision, Building Codes and Fire Engineering”, *Build Boston - Boston Society of Architects*, Boston, MA, November 2002 (with Jeff Tubbs)
- “Consideration of Extreme Events in Building Management and Design”, *Build Boston - Boston Society of Architects*, Boston, MA, November 2002 (with Brian Meacham and Jeff Tubbs)
- “Sprinklers as A Code Solution,” *4th International Fire Sprinkler Conference*, Prague, Czech Republic, July 2002
- “Sprinkler Systems for Storage and Bulk Retail,” *Fire Prevention Association of Massachusetts – 16th Annual Educational Seminar*, Amherst, MA, April 2002

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Performance-Based Design Requirements for the First Edition of the NFPA Building Code, *4th International Conference on Performance-Based Codes and Fire Safety Design Methods*, Melbourne, Australia, March 2002 (with Greg Harrington)

“Using Fire Models to Demonstrate Sprinkler System Effectiveness,” *New England Fire Protection Symposium*, Bartlett, NH, March 2002

“An Overview of NFPA’s New Project on Fire Risk Assessment Methods,” *The International Conference on Engineered Fire Protection Design*, San Francisco, CA, June 2001 (with Ken Richardson)

“Electric Power Supply Requirements for Fire Pumps,” *Society of Fire Protection Engineers - New England Chapter Annual Technical Seminar*, Randolph, MA, March 2001. (with Larry Wenzel)

“An Overview of Organizational and Technical Changes for the 1999 edition of NFPA 13,” *NFPA Fall Meeting*, Orlando, FL, November 2000

“Future Considerations for NFPA 13” *New England Fire Protection Symposium*, Bartlett, NH, March 2000.

“Electrical Power Supply Requirements of NFPA 20”, *New England Fire Protection Symposium*, Bartlett, NH, March 2000

“Automatic Sprinkler Systems” *Wisconsin Code Enforcement Officials Special Seminar*, Madison and Wausau, WI, February 2000

“NFPA Overview and Technical Changes ½ Day Program,” *Wisconsin Building Code Refresher Program*, University of Wisconsin, Madison, WI, February 2000

“Implementing Performance-Based Design through the Application of Fire Safety Regulations,” *2nd Conference on Fire Safety Design in the 21st Century*, Worcester, MA, June 1999

“NFPA 13 – Major Changes for the 1999 edition,” *SFPE Southern Ontario Chapter Meeting*, Toronto, Canada, January 2000

“Technical and Organizational Changes for the 1999 Edition of NFPA 13,” *SFPE New England Chapter Meeting*, Norwood, MA, December 1999

“An Introduction to NFPA 13,” *NFPA Regional Conference*, Kuala Lumpur, Malaysia and Hong Kong, China, November, 1999

“NFPA 13 Plans Review Seminar,” *Rhode Island Fire Marshall’s Association*, Providence, RI, October 1999

“NFPA 13 Changes ½ Day Program,” *American Fire Sprinkler Association*, New Orleans, LO, September 1999. (with R. Huggins and B. Caputo)

“NFPA 13 – The Next Century” *Fire Marshall’s Association of North America - Delaware Valley Chapter Meeting*, Philadelphia, PA, September 1999

“Electric Power Supply for Motor Driven Fire Pumps,” *National Fire Sprinkler Association Annual Seminar*, Chicago, IL, September, 1999

“NFPA 13 / NFPA 25 Surveyor Training Course,” *National Health Care Finance Administration*, Denver, CO, June 1999.

“Major Proposed Changes and Additions to the Next Edition of NFPA 13,” *American Society of Plumbing Engineers - Boston Chapter Meeting*, Randolph, MA, January 1999

“The Reorganization and Expansion of NFPA 13,” *3rd International Fire Sprinkler Conference*, Glasgow, Scotland, July 1998

“Seminar on Fire Protection Systems – Sprinklers and Fire Pumps,” *NFPA Special Meeting*, Bangkok, Thailand, July 1998. (with D. Hague)

“An Overview of NFPA 13, NFPA 231 and NFPA 20,” *NFPA Special Meeting and Workshop*, Kuala Lumpur, Malaysia, July 1998.

“An Introduction to Performance-Based Codes and Design Approaches,” *South Carolina Fire Inspectors Association Spring Seminar*, Myrtle Beach, SC, June 1998.

“Technical Differences Between the 1991 and the 1996 editions of NFPA 13,” *Montana Fire Marshall’s Association – Monthly Meeting*, Helena, MT, June 1998

“Domestic Fire Protection Using Residential Sprinklers and Inspection, Testing and Maintenance Procedures for Water Based Fire Protection Systems,” *Fire-X '98*, Birmingham, England, May 1998

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- "Sprinkler Technology and the Application of NFPA's Sprinkler Standards," *NFPA Regional Conference*, Mexico City, Mexico, April 1998
- "Reorganization of NFPA's Sprinkler Project," *NEAFPSD New England Fire Sprinkler Technical Seminar*, Bethel, ME, March 1998
- "NFPA 13 – Major Changes," *American Society of Plumbing Engineers – Miami Chapter*, Miami, FL, February 1998
- "Proposed Changes to NFPA 231 and NFPA 231C," *American Fire Sprinkler Association's 16th Annual Convention*, Albuquerque, New Mexico, October 1997
- "Performance Codes and the Role of NFPA," *Performance Codes: How Will They Happen*, American Institute for Architects, San Francisco, CA, October 1997
- "Supervision of Automatic Sprinkler Systems," *Pennsylvania Tri-State Fire Alarm Seminar*, Philadelphia, PA, September 1997
- "Performance-Based Regulations - What Role Will They Play," *Proceedings of the Fire Risk and Hazard Assessment Symposium*, National Fire Protection Research Foundation, San Francisco, CA, June 1997
- "Performance-Based Language in Existing NFPA Codes," *SFPE Design Workshop – Introduction to Performance-Based Design for AHJ's*, Los Angeles, CA, May 1997
- "Current Issues Facing Water-Based Fire Protection Systems," *NFPA Annual Meeting*, Los Angeles, CA, May 1997.
"New Orleans Warehouse Fire," *NFPA Annual Meeting*, Los Angeles, CA, May 1997
- "Pumps for Fire Protection, and Fire Protection Technology Update" Fire-X '97, Birmingham, England, May 1997 (with K. Isman and M. Riffey)
- "NFPA's Future in Performance-Based Codes and Standards," *Building Performance: What Is It?*, American Institute for Architects, Washington, D.C., April 1997
- "Fire Sprinklers – NFPA 13 and 13D Update," *NFPA Western Regional Meeting*, Sacramento, CA, April 1997
- "An Introduction to Performance-Based Codes and Design Approaches," *Connecticut Fire Marshall's Annual Seminar*, New Haven, CT, March 1997
- "NFPA 101 and Sprinkler Protection," *New England Fire Sprinkler Technical Seminar*, Bethel, ME, March 1997
- "NFPA 13 – An Overview of Major Changes," *New England Association of Fire Protection System Designers Monthly Meeting*, Westborough, MA, March 1997
- "Review of NFPA 13 Code Changes," *American Society of Plumbing Engineers/Society of Fire Protection Engineers – Empire Chapter Joint Meeting*, Syracuse, NY, December 1996
- "An Introduction to Fire Pumps," *NFPA Fall Meeting*, Nashville, TN, November 1996
- "Recent NFPA Fire Investigations," *NFPA Fall Meeting*, Nashville, TN, November 1996 (with R. Bielen and Ed Comeau)
- "Performance-Based Language in Existing NFPA Codes," *SFPE Design Workshop – Introduction to Performance-Based Design for AHJ's*, Nashville, TN, November 1996
- "NFPA 13 Update," *New England Association of Fire Protection System Designers 3rd Biennial Fire Protection Product Show and Seminar*, Randolph, MA, October 1996
- "Performance-Based Codes and Standards and Their Effect on Building Design," *International Performance Codes: The Coming Impact on Your Practice*, American Institute for Architects, Vancouver, Canada, October 1996
- "A Dual Track Performance / Prescriptive Based Approach for Fire Safety Codes and Standards," *Proceedings - Fire Safety Conference on Performance Based Concepts*, Federal Institute of Technology, Zurich, Switzerland, October, 1996
- "Sprinkler and Fire Suppression System Plan Review," *Connecticut Fire Marshall's Association Technical Seminar*, Fairfield, CT, August 1996
- "NFPA 750 – NFPA's New Standard on Water Mist Systems, and Changes to the 1996 edition of NFPA 13" *National Fire Sprinkler Association Area 1 Seminar*, Saratoga Springs, NY, July 1996
- "Update on Residential Sprinkler Systems," *Fire Marshall's Association of Colorado Annual Conference*, Vail, CO, July 1996

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- "Creating Performance-Based Documents at the NFPA," *Proceedings of the Fire Risk and Hazard Assessment Symposium*, National Fire Protection Research Foundation, San Francisco, CA, June 1996
- "Perspectives on the Transition to Performance-Based Codes – Panel Discussion," *NFPA Annual Meeting*, Boston, MA, May 1996.
- "Keeping Pace with Water-Based Technology," *NFPA Annual Meeting*, Boston, MA, May 1996
- "NFPA's Perspective on Performance-Based Codes and Standards," *International Meeting of the Confederation of Fire Protection Associations*, Boston, MA, May 1996
- "Fire Investigation Report - Warehouse Fire, New Orleans, Louisiana", National Fire Protection Association, March 1996 (with Edward Comeau)
- "Supplementing NFPA's Codes and Standards with Performance-Based Provisions," *Proceedings for Interflam '96*, Cambridge, England, March 1996
- "NFPA's Objectives in Pursuing Performance-Based Codes and Standards," *Proceedings of the International Conference on Performance-Based Codes and Fire Safety Design Methods*, Society of Fire Protection Engineers, Ottawa, Canada, 1996
- "Implementing Emerging Technologies Through Fire Safety Codes and Standards," *Demonstration of Limited Water Supply Fire Suppression Technologies*, National Institute of Standards and Technology, Gaithersburg, MD, March 1996
- "An Overview of the 1996 edition of NFPA 13," *American Society of Plumbing Engineers – NYC Chapter Meeting*, New York, NY, February 1996
- "NFPA's Future in Performance-Based Codes and Standards", *NFPA Fall Meeting*, Chicago, IL, November 1995
- "Performance Based Design in the United States," *Proceedings of the International Conference on Fire Research and Engineering*, Society of Fire Protection Engineers, Orlando, FL, September 1995
- "Performance-Based Standards from the NFPA Perspective," *Urban Fire Marshall's Forum*, Quincy, MA, August, 1995
- "NFPA Standards Adopted by the Uniform Fire Code," *Western Fire Chiefs / International Fire Code Institute Annual Meeting*, Las Vegas, NV, July 1995
- "Performance Based Design in United States," *Pacific Rim Conference of Building Officials*, Darwin, Australia, May 1995
- "Fire Case Studies – The Builders Square Fire – Panel Discussion," *NFPA Annual Meeting*, San Francisco, CA, May 1994
- "Water Mist Systems for Fire Protection," *Video Fuego Technical Conference*, Badajoz, Spain, May 1994
- "Fire Protection Standards for Records, Record Centers and Archives Facilities," *ARMA – Boston Chapter Meeting*, Boston, MA, April 1994 (with R. Ortisi-Best)
- "Technical Changes to NFPA's Storage Standards," *NFPA Fall Meeting*, Phoenix, AZ, November 1993