Jelena Srebric, Ph.D.

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Education

Massachusetts Institute of Technology Cambridge, MA
- Ph. D. in Building Technology, 2000
  Thesis title: "Simplified methodology for indoor environment design"

University of Belgrade Belgrade, Serbia
- M.Sc. in Mechanical Engineering, 1997
  Thesis title: "Modeling of air stream flow through air conditioned premises"
- B. Sc. in Mechanical Engineering, 1994

Research Interests

- Multi-scale Modeling of Urban Neighborhoods
- Computational Fluid Dynamics and Energy Simulations
- Simulations and Measurements of Indoor and Outdoor Environments
- Ventilation Indoor Air Quality (IAQ) and Building Energy Analysis
- Sustainable Buildings and Climate Change

Teaching Activities

Developed and taught new courses at the Penn State University:
- AE 597A "Research Methods in Architectural Engineering"
- AE 559 "Computational Fluid Dynamics in Building Design"
- AE 455 "Integrated Building Mechanical Systems"

Taught existing courses at the Penn State University:
- AE 454 "Advanced Heating, Ventilating, and Air-Conditioning"
- AE 310 "Fundamentals of Heating, Ventilating, and Air-Conditioning"
- AE 124 "Freshman Seminar"
- AE 481/482 "Senior Thesis Project"

Collaborated and taught in a design studio at Penn State University:
- "Architecture of the Wind: A Maritime Museum in Erie, PA" (Fall 2010)

Developed and taught a course at the Harvard University Graduate School of Design (GSD):
- GSD 6419 "Natural Building Ventilation" (Fall 2009)

Developed and taught invited course guest lectures at the Harvard School of Public Health (HSPH):
- ENVR E-119 "Sustainable Buildings: Design and Construction" (Fall 2011 – simultaneously offered at Tsinghua, China)
- ENVR E-119 "Sustainable Buildings: Design, Construction, and Operations (Fall 2010)
- EH 522 "Indoor Environmental Quality and Health" (Fall 2009)

Laboratories

- Building Environment Simulation and Testing (BEST) facility
- HVAC Learning Playground (HVAC LP)

Experience

The Pennsylvania State University (PSU) University Park, PA

Professor of Architectural Engineering (May 2011 - present)

Adjunct Professor of Mechanical and Nuclear Eng. (June 2007 – present)

Associate Professor of Architectural Engineering (May 2006 - April 2011)

Assistant Professor of Architectural Engineering (August 2000 – April 2006)

- Developed building science research group and agenda http://www.buildingscience.psu.edu/
- Conduct research on outdoor airflow, ventilation, indoor air quality, building energy, and thermal comfort
- Direct, designed and built two new laboratories: one for research (BEST) and one for teaching (HVAC LP)
- Developed software for green building design called building energy and airflow (BEAF) program including an interface
- Teach and develop graduate and undergraduate courses
- Supervise post-doctoral fellows, graduates, and under-graduates
- Advise Student Society of Architectural Engineers (SSAE)

Harvard University Cambridge, MA

Visiting Scientist at the Harvard School of Public Health (March 2008 – June 2013)

- Conducted research on indoor air quality and occupant outcomes
- Developed and taught and a course and several guest lectures

Visiting Professor at the Harvard School of Graduate Design (Fall 2009)

Massachusetts Institute of Technology Cambridge, MA

Research/Teaching Assistant (September 1997 - August 2000)

- Developed a simplified CFD program, CFD0, for indoor environment simulations for architects and building engineers
- Coupled CFD0 with energy simulation program for simultaneous thermal comfort, indoor air quality, and building energy simulation
- Measured indoor environment parameters with different air supply diffusers
- Assisted in teaching subjects "Energy in Building Design" and "Building Technology Seminar"
- Guest lectured on subjects "Analysis and Design of Heating, Ventilating, and Air Conditioning Systems" and "Integrated Building Systems"

University of Belgrade Belgrade, Serbia

Research Assistant (January 1995 - August 1997)

- Developed analytical solutions for heat transfer in building envelopes

Physikalisch-Technische Bundesanstalt Braunschweig, Germany

Research Engineer (Intern, Summer 1992)

- Collected and analyzed electrical signals of stored ions in a radio-frequency trap at the time-unit laboratory

Awards

- Serbian National Academy of Engineering, Elected International Member, 2013
- Outstanding Research Award, Penn State Engineering Alumni Society (PSEAS), 2012
- 2009 Crosby Field Award, American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), 2010
- 2009 Poster Presentation Award, ASHRAE, 2010
- 2007 Transactions Paper Award, ASHRAE, 2008
- Distinguished Service Award, ASHRAE, 2007
- Yaglou Award, International Academy of Indoor Air Sciences, 2005
- **Faculty Early Career Development (CAREER)** Award, National Science Foundation, 2002
- Best Poster Presentation Award, ASHRAE, 2002
- Special Emphasis Research Career Award (SERCA), National Institute for Occupational Safety and Health, 2001
- Homer Addams Award, ASHRAE, 2001
- Pearce Development Professorship, PSU, 2000-2004
- Best Poster Presentation Award, ASHRAE, 2000
- The Nicolitch Trust Scholarship for a recipient with exemplary grades and leadership potential, 1999
- Avalon Travel Grant, MIT, 1999
- Grant in Aid Fellowship for Graduate Students, ASHRAE, 1998
- Scholarship from Ministry of Science for Talented Graduate Students, Yugoslavia, 1995 - 1997
- DAAD (German Academic Exchange Service) Scholarship, Germany, 1992

Student Awards

- Yang-Seon Kim: Grant-in-Aid Fellowship for Graduate Students, ASHARE, 2013-2014.
- Mingjie Zhao: Grant-in-Aid Fellowship for Graduate Students, ASHARE, 2010-2011.
- Jiying Liu: Fellowship from the China Scholarship Council (CSC), 2009-2011.
- Mohammad Heidarinejad, ASHRAE Graduate Grant-in-Aid, 2009-2010.
- Tahir Ayata: Fellowship from the Research Council of Turkey (TUBITAK), 2008-2009.
- Vladimir Vukovic, ASHRAE Transactions Paper Award, 2008; Air & Waste Management Association Scholarship 2008-2009; ASHRAE Graduate Grant-in-Aid, 2006-2007.
- Paulo Cesar Tabares-Velasco: ASHRAE Graduate Grant-in-Aid, 2007-2008; Jack and Laraine Beiter Excellence Endowment in Architectural Engineering, Penn State University, 2007.
- Brendon Burley: Applied Research Laboratory (ARL) Graduate Fellowship 2006-2008; PSU University Fellowship, 2005-2006; ASHRAE Undergraduate Senior Project Grant 2004-2005; NSF Undergraduate Research Fellowship, Summer 2004.
- Jason Sambolt: NSF Undergraduate Research Fellowship, Summer 2006.
- Ashraf Mansour: Fulbright Postdoctoral Fellowship, 2005.
- Atila Novoselac: Jack and Laraine Beiter Excellence Endowment in Architectural Engineering, Penn State University, 2004; Gordon D. Kissinger Graduate Fellowship, Penn State University, 2003; Dean's Fellowship for Graduate Students, Penn State University, 2001-2004; ASHRAE Graduate Grant-in-Aid, 2001-2002.
- Danko Davidovic: Grant-in-Aid Fellowship for Graduate Students, ASHARE, 2002-2003.
- Yazhuo Qian: PSU University Fellowship, 2002-2003.
- Tracey Nawrocki: ASHRAE Graduate Grant-in-Aid, 2005-2006; ASHRAE-Alwin B. Newton Scholarship, 2004; The Boeing Scholarship, 2003-2004; NSF Undergraduate Research Fellowship, Summer 2004
- Michelle Murosky: 2003 Thesis Award of Merit; Ove Arup & Partners Scholarship 2002-2003.

Publications

Books/ Book Chapters

- Srebric, J. 2013. "Indoor Environmental Control," Chapter 64, Book 4, Energy and Power, **Mechanical Engineers' Handbook, 4th Edition**, Edited by Myer Kutz, John Wiley & Sons, Inc. (author)
- Srebric, J. 2011. "Building Performance Simulation for Design and Operation," Chapter 6. Ventilation Performance Prediction, Edited by J.L.M. Hensen and R. Lamberts, **Taylor & Francis Group**. (author)
- Srebric, J. 2005. "Indoor Environmental Control," Chapter 64, Book 4, Energy and Power, **Mechanical Engineers' Handbook, 3rd Edition**, Edited by Myer Kutz, John Wiley & Sons, Inc, pp 531-553. (author)
- Srebric, J., 2005, "Indoor Environment Modeling," Chapter 34, **ASHRAE Handbook of Fundamentals 2005**, Atlanta, GA., pp34.6-34.14. (contributing author)
- Srebric, J. 2004. "Architectural Engineering: Towards Practical Integration," Cooperative Research Network, Edited by Tantasavasdi and Arkaraprasertkul, **Ministry of Education, Bangkok, Thailand,** 63 pages. (author)

Papers in Refereed Journals

- Liu, J., Srebric, J., and Yu, N. 2013. "Numerical simulation of convective heat transfer coefficients at the external surfaces of building arrays immersed in a turbulent boundary layer," **Int. Journal of Heat and Mass Transfer**, 61(2013): 209-225.
- Zhu, S., Srebric, J., Rudnick, S.N., Vincent, R.L., and Nardell, E.A. 2013. "Numerical Investigation of Upper-Room UVGI Disinfection Efficacy in an Environmental Chamber with a Ceiling Fan," accepted to appear in **Photochemistry and Photobiology**.
- Han, G., Srebric, J., and Enache-Pommer, E. 2013. "Variability of Optimal Solutions for Building Components Based on Comprehensive Life Cycle Cost Analysis," under review in **Energy and Buildings**.
- Davidovic, D., Liu, J., and Srebric, J. 2013. "Improvements in numerical airflow modeling around multiple buildings: numerical benchmark comparison of modified zero-equation turbulence model (ZEQ), revised "Kato-Launder" version of the "k-ε" model (MMK) and Smagorinsky Subgrid-scale model (SMG) performance," under review in **Journal of Wind Engineering & Industrial Aerodynamics**.
- Zhao, M., Tabares-Velasco, P.C., and Srebric, J. 2013. "Effects of Plants and Substrate Selection on Thermal Performance of Green Roofs," under review in **Energy and Buildings**.
- Pitchurov, G., Srebric, J., Rudnick, S.N., Vincent R.L., and Brickner P.W. 2013. "Assessment of upper-room UVGI efficacy by diffusion field and particle tracking simulation in a room with a ceiling fan," under review in **Building and Environment**.
- Heidarinejad, M., Dahlhausen, M., and Srebric, J. 2013. "A Classification Methodology based on Statistical Analyses of Energy Consumption Patterns to Identify Typical U.S. Office Buildings" under review in **Applied Energy**.
- Tabares-Velasco, P.C., Zhao, M., Peterson, N., Berghage, R. and Srebric, J. 2012. "Validation of Predictive Heat and Mass Transfer Green Roof Model with Extensive Green Roof Field Data," **Ecological Engineering**, 47(2012): 165-173.
- Tabares-Velasco, P.C., and Srebric, J. 2012. "A heat transfer model for assessment of plant based roofing systems in summer conditions," **Building and Environment**, 49(2012): 310-323.
- Davidovic, D., Pinon, J., Burnett, E.F., and Srebric, J. 2012. "Analytical Procedures For Estimating Air Flow Rates In Ventilated, Screened Wall Systems (VSWS)," **Building and Environment**, 47(2012): 126-137.
- Zhu, S., Srebric, J., Spengler, J.D., and Demokritou, P. 2012. "An advanced numerical model for the assessment of airborne transmission of influenza in bus microenvironments," **Building and Environment**,

47(2012): 67-75.

- Tabares-Velasco, P.C., and Srebric, J. 2011. "Experimental Quantification of Heat and Mass Transfer Process through a Vegetated Roof Assembly in a new Laboratory Setup," **Int. Journal of Heat and Mass Transfer**, 54 (2011): 5149-5162**.**
- Heidarinejad, M., and Srebric, J. 2011. "Computational Fluid Dynamics Modeling of UR-UVGI Lamp Effectiveness to Promote Disinfection of Airborne Microorganisms," invited paper for a special issue on "Technological Advancements That Improve or Enhance Energy Efficiency in Healthcare Facilities" in **World Review of Science, Technology and Sustainable Development** (WRSTSD).
- Ayata, T., Tabares-Velasco, P.C., and Srebric, J. 2011. "An Investigation of Sensible Heat Fluxes at a Green Roof in a Laboratory Setup," **Building and Environment**, 46(9): 1851-1861**.**
- Khalajzadeh, V., Heidarinejad, G., and Srebric, J. 2011. "Parameters Optimization of a Vertical Ground Heat Exchanger Based on Response Surface Methodology," **Energy and Buildings**, 43(6): 1288-1294.
- Qian, Y., and Srebric J. 2010. "Development and Validation of an Algebraic Turbulence Model for Outdoor Airflow and Contaminant Simulations around a Building," invited paper for the inaugural issue of **International Journal in Building, Urban, Interior and Landscape Technology.**
- Vukovic, V., Tabares-Velasco, P.C., and Srebric, J. 2010. "Real-Time Identification of Indoor Pollutant Source Positions Based on Neural Network Locator of Contaminant Sources (LOCS) and Optimized Sensor Networks," **Journal of the Air & Waste Management Association**, 60: 1034-1048.
- Tabares-Velasco, P.C. and Srebric, J. 2009. "The Role of Plants in the Reduction of Heat Flux through Green Roofs: Laboratory Experiments" **ASHRAE Transactions**, 115(2): 793-802.
- Yang, C., Yang, X., Xu, Y., and Srebric, J. 2009. "Contaminant dispersion with personal displacement ventilation Part I: baseline case study," **Building and Environment**, 44(10): 2121-2128.
- Srebric, J., Yuan, J., and Novoselac, A. 2008. "In-Situ Experimental Validation of a Coupled Multi-zone and CFD Model for Building Contaminant Transport Simulations," **ASHRAE Transactions**, 114(1): 273-281.
- Srebric, J., Vukovic, V., He, G., and Yang, X. 2008. "CFD Boundary Conditions for Contaminant Dispersion, Heat Transfer, and Airflow Simulations around Human Occupants in Indoor Environments," **Building and Environment**, 43(3): 294-303.
- Mansour, A., Srebric, J., and Burley, B.J. 2007. "Development of Straw-cement Composite Sustainable Building Material for Low-cost Housing in Egypt," **Journal of Applied Sciences Research**, 3(11): 1571-1580.
- Choi, J., Kim, Y., Sivasubramaniam, A., Srebric, J., Wang, Q., and Lee, Q. 2007. "A CDF-based Tool for Studying Temperature in Rack-mounted Servers" **IEEE Transactions on Computers**, 57(8): 1129-1142.
- Vukovic, V., and Srebric, J. 2007. "Application of Neural Networks Trained with Multi-Zone Models for Fast and Accurate Detection of Contaminant Source Position in Buildings," **ASHRAE Transactions**, 113(2): 154-162.
- Novoselac, A., Burley, B.J., and Srebric, J. 2006. "Development of New and Validation of Existing Convection Correlations for Rooms With Displacement Ventilation Systems," **Energy and Buildings**, 38(3): 163-173.
- Davidovic, D., Srebric, J, and Burnett E. 2006. "Modeling Convective Drying of Ventilated Wall Chambers in Building Enclosures," **International Journal of Thermal Sciences**, 45(2): 180-189.
- Novoselac, A., Burley, B.J. and Srebric, J. 2006. "New Convection Correlations for Cooled Ceiling Panels in Room with Mixed and Stratified Airflow," **Int. J. of HVAC&R Research**, 12(2): 17 pages.
- He, G., Yang, X., and Srebric, J. 2005. "Removal of Contaminants Released from Room Surfaces by Displacement and Mixing Ventilation: Modeling and Validation," **Indoor Air: International Journal of Indoor Air**, 15(5): 367-380.
- He, G., Yang, X. and Srebric, J. 2005. "Effects of Source Type and Location on Contaminant Dispersion in a Displacement Ventilated Room," **ASHARE Transaction**, 111(1): 646-652.
- Yang, X., Srebric, J., Li, X. and He, G. 2004. "Performance of Three Air Distribution Systems in VOC

Removal from an Area Source," **Building and Environment**, 39(11):1289-1299.

- Zhai, Z., Srebric, J. and Chen, Q. 2003. "Prediction and Control of Chemical and Biological Agent Dispersion in Buildings," **Int. J. of Ventilation**, 2(3): 251-264.
- Novoselac, A. and Srebric, J. 2003. "Comparison of Air Exchange Efficiency and Contaminant Removal Effectiveness as IAQ Indices," **ASHRAE Transactions**, 109(2): 339-349.
- Novoselac, A. and Srebric, J. 2002. "A Critical Review on the Performance and Design of Combined Cooled Ceiling and Displacement Ventilation Systems," **Energy and Buildings**, 34 (5): 497-509.
- Srebric, J. and Chen, Q. 2002. "An Example of Verification, Validation, and Reporting of Indoor Environment CFD Analyses," **ASHRAE Transactions**, 108(2): 185-194.
- Srebric, J. and Chen, Q. 2002. "Simplified Numerical Models for Complex Air Supply Diffusers," **Int. J. of HVAC&R Research**, 8(3): 277-294.
- Chen, Q. and Srebric, J. 2002. "A Procedure for Verification, Validation, and Reporting of Indoor Environment CFD Analyses," **Int. J. of HVAC&R Research**, 8(2): 201-216.
- Tantasavasdi, C., Srebric, J., and Chen, Q. 2001. "Natural Ventilation Design for Houses in Thailand," **Energy and Buildings**, 33 (8): 815-824.
- Srebric, J. and Chen, Q. 2001. "A Method of Test to Obtain Diffuser Data for CFD Modeling of Room Airflow," **ASHRAE Transactions**, 107(2): 108-116.
- Chen, Q. and Srebric, J. 2000. "Application of CFD Tools for Indoor and Outdoor Environment Design," Invited paper, **Int. J. on Architectural Science**, 1(1): 14-29.
- Srebric, J., Chen, Q., and Glicksman, L.R. 2000. "A Coupled Airflow-and-Energy Simulation Program for Indoor Thermal Environment Studies," **ASHRAE Transactions**, 106(1): 465-476.
- Srebric, J., Chen, Q., and Glicksman, L.R. 1999. "Validation of a Zero-equation Turbulence Model for Complex Indoor Airflows," **ASHRAE Transactions**, 105(2): 414-427.

Papers in Refereed Conference Proceedings

- Liu, J., Srebric, J., and Yu, N. 2013. "A rapid and reliable numerical method for predictions of outdoor thermal environment in actual urban areas ," Invited paper for ASME 2013 Summer Heat Transfer Conference, **HT 2013**, July 14-19, Minneapolis, MN.
- Rekstad, N. M., Heidarinejad, M., Wentz, J., and Srebric, J. 2012. "Energy Performance Analyses of Campus Buildings over Heating and Cooling Seasons," The Second International Conference on Building Energy and Environment, **COBEE2012**, August 1-4, 2012, Boulder, Colorado, USA.
- Han, G., and Srebric, J. 2012. "Building System Optimization with Respect to Mechanical and Enclosure Systems," The Second International Conference on Building Energy and Environment, **COBEE2012**, August 1-4, 2012, Boulder, Colorado, USA.
- Alhafi, Z., Shu, S., and Srebric, J. 2012. "Comparison of Energy Consumption Depending on the Indoor Temperature Settings for Three Retail Buildings," The Second International Conference on Building Energy and Environment, **COBEE2012**, August 1-4, 2012, Boulder, Colorado, USA.
- Zhu, S., Srebric, J., Rudnick, S. N., Nardell, E. A., and Vincent, R. 2012. "Numerical Approach for Studying Ceiling Fan's Influence on Upper-Room UVGI's Disinfection Efficacy," Healthy Buildings 2012, **HB2012**, July 8-12, 2012, Brisbane, Queensland.
- Zhao, M., and Srebric. J. 2011. "Assessment of Green Roof Performance for Sustainable Buildings during Winter Weather Conditions," International Conference of **WREC-Asia & SuDBE2011**, October 28-31, 2011, Chongqing, China.
- Srebric, J. 2011. "Opportunities and Challenges for Multi-Scale Modeling of Sustainable Buildings," invited paper for the National Academy of Engineering **2011 U.S. Frontiers Of Engineering (FOE)** Symposium, September 19-21, Mountain View, CA.

- Srebric, J. 2011. "Green Building Rating Systems and Indoor Air Quality (IAQ) Credits," **Indoor Air 2011**, June 5-10, Austin, TX.
- Burley, B., Srebric, J., Haupt, S.E., Peltier, L.J., and Liu J. 2011. "Modeling of Urban Wind for Infiltration Studies," **Indoor Air 2011**, June 5-10, Austin, TX.
- Heidarinejad, M., and Srebric, J. 2011. "Modeling of UV Irradiance Field in Computational Fluid Dynamics to Study Effectiveness of Upper-Room Ultraviolet Germicidal Irradiation Lamps in a Patient Room," **Indoor Air 2011**, June 5-10, Austin, TX.
- Zhu, S., Srebric, J., Spengler, J.D., and Demokritou, P. 2011. "Numerical investigation of airborne transmission of influenza in a bus microenvironment," **Indoor Air 2011**, June 5-10, Austin, TX.
- James, P., Vukovic, V., Srebric, J. and Spengler, J.D. 2009. "A comparison between questionnaire data on environmental perceptions and building-related health symptoms from the Building Assessment Survey Evaluation (BASE) study and a "green building" in Pennsylvania" 9th International Conference and Exhibition **Healthy Buildings 2009**, September 13-17, 2009, Syracuse, NY.
- Vukovic, V., and Srebric, J. 2009. "Neural Network Model Improvements for Identification of Contaminant Source Position inside of Buildings," 9th International Conference and Exhibition **Healthy Buildings 2009**, September 13-17, 2009, Syracuse, NY.
- Heidarinejad, M., and Srebric, J. 2009. "Importance of non-isothermal indoor conditions for the prediction of upper-room UVGI lamps performance in patient rooms," 9th International Conference and Exhibition **Healthy Buildings 2009**, September 13-17, 2009, Syracuse, NY.
- Tabares-Velasco, P.C., and Srebric, J. 2009. "Heat Fluxes and Water management of a Green and Brown Roof: Laboratory Experiments," **7th Annual Greening Rooftops for Sustainable Communities Conference**, CD ROM, 12 pages, June 3-5, 2009, Atlanta, GA.
- Vukovic, V., Srebric, J., Qian, Z., and Lehman, E.B. 2008. "Respiratory Health Responses to Indoor Environmental Conditions," **The 11th International Conference on Indoor Air Quality and Climate, Indoor Air 2008, August 17-22, 2008, Copenhagen, Denmark.**
- Choi, J., Kim, Y., Sivasubramaniam, A., Srebric, J., Wang, Q., and Lee, Q. 2007. "Modeling and Managing Thermal Profiles of Rack-mounted Servers with ThermoStat," **The 13th International Symposium on High-Performance Computer Architecture, HPCA-13**, pp 205-215, February 10-14, 2007, Phoenix, Arizona.
- Tabares-Velasco, P.C., Srebric, J., and Berghage, R. 2007. "Thermal Performance of a Lightweight Tray for the Green Roof Media," The **5th Annual Greening Rooftops for Sustainable Communities Conferenc**e, CD ROM, 12 pages, April 29-May 1, 2007, Minneapolis, MN.
- Hu, B., He, G., Srebric, J., and Yang, X. 2005. "The Influence of Contaminant Source Area on CFD Simulations for Indoor Point Sources," The 10th International Conference on Indoor Air Quality and Climate, **Indoor Air 2005**, CD ROM, paper no. 229, 6 pages, Sept. 4-9, 2005, Beijing, China.
- Pinon, J., Burnett, E.F., Davidovic D. and Srebric, J. 2004. "The Airflow Characteristics of Ventilated Cavities in Screen-Type Enclosure Wall Systems," **Performance of the Exterior Envelope of Whole Buildings IX International Conference**, CD ROM, 19 pages, ASHRAE 2004, Dec. 5-10, 2004, Clearwater Beach, Florida.
- Hu, H. and Srebric, J. 2004. "Indoor VOC Source and Sink Modeling in Multizone Simulations of Real Buildings," **CIB World Building Congress 2004**, CD ROM, paper no. 820, 11 pages, May 2-7, 2004, Toronto, Canada.
- Yuan, J. and Srebric, J. 2004. "Transient Prediction of Contaminant Distribution by Introducing Energy Load Calculations into Multi-zone Modeling," **CIB World Building Congress 2004**, CD ROM, paper no. 148, 11 pages, May 2-7, 2004, Toronto, Canada.
- He, G., Yang, X. and Srebric, J. 2003 . "Contaminant Dispersion from an Area Source with Displacement Ventilation," Proceedings of **ISHVAC 2003**, CD ROM, 8 pages, Tsinghua University, Beijing, China, Oct.9-11, 2003.

- Novoselac, A. and Srebric, J. 2003. "Sensitivity Study of Parameters Influencing IAQ Indices," **Ventilation 2003**, August 5-8, 2003, Sapporo, Japan, pp.409-414.
- Srebric, J. and Novoselac, A. 2002. "Designing Healthy and Energy-Efficient Buildings Using Coupled Computational Fluid Dynamics and Energy Simulation Program," Proceedings of **Roomvent 2002**, CD ROM, paper no. 156, 4 pages, Copenhagen, Denmark.
- Yuan, J. and Srebric, J. 2002. "Improved Prediction of Indoor Contaminant Distribution for Entire Buildings," American Society of Mechanical Engineers (**ASME**), Fluids Engineering Division (Publication) FED, v 258, 2002, p 111-118.
- Novoselac, A. and Srebric, J. 2002. "Influence of Different Pollutant Sources on Selection of Ventilation System in Offices with Cooled Ceiling," Proceedings of **Indoor Air 2002**, Monterey, California, pg. 331-336.
- Srebric, J. and Chen, Q. 2001. "Boundary Conditions for Diffusers in Room Air Distribution Calculations," Proceedings of **CLIMA 2000**, CD ROM, 15 pages, Sept. 15-18, 2001, Napoli, Italy.
- Yang, X. and Srebric, J. 2001. "Modeling the Performance of Different Ventilation Systems on VOC Removal in a Full-Scale Room," Proceedings of **CLIMA 2000**, CD ROM, 15 pages, Sept. 15-18, 2001, Napoli, Italy.
- Srebric, J., Liu, J., and Chen, Q. 2000. "Experimental Validation of Jet Formulae for Air Supply Diffusers," Proceedings of **Roomvent 2000**, Vol. 1, pp. 529-534, Reading, U.K.
- Srebric, J., Chen, Q., and Glicksman, L.R. 1999. "A Computer Design Tool for Non-uniform Indoor Thermal Environment Problems," Proceedings of **the 3rd International Symposium on HVAC: ISHVAC '99**, Vol. 2, pp. 635-647, Shenzhen, China.

Other Major Publications

- "Ventilation and Indoor Air Quality in Retail Stores," **Final Report for ASHRAE RP-1596**, The University of Texas at Austin, TX, and The Pennsylvania State University, PA.
- Srebric, J. 2010. **"**Opportunities for Green Building (GB) Rating Systems to Improve Indoor Air Quality Credits and to Address Changing Climatic Conditions," **Report to the U.S. Environmental Protection Agency (EPA)**, The Indoor Environments Division, Office of Radiation and Indoor Air, Washington, DC.
- Srebric, J. 2010. **"Computational Fluid Dynamics (CFD) Challenges in Simulating Building Airflows," Editorial for Int. J. of HVAC&R Research**, Volume 16, Number 6.
- Bullard, C., Srebric J., and Radermacher, R. 2009**. "Thoughts on the Future of Professional Societies," Editorial for Int. J. of HVAC&R Research**, Volume 15, Number 5.
- Vukovic, V., Srebric, J., Burley, B.J., Tabares-Velasco, P.C., and Ault, B.M. 2008. "Green Building Indoor Environmental Quality Study in the Offices of the Department of Environmental Protection, Cambria County, Pennsylvania," **Building Science Report**, June 2008, The Pennsylvania State University, PA, USA.
- Srebric J. 2008. "Sustainable Building Systems Require New Design Guidelines," **Editorial for Int. J. of HVAC&R Research**, Volume 14, Number 1.
- Riley, D., Srebric, J., and, Boothby, T. 2006. "An Experimental Pedagogy in Sustainable Building Technologies: Integrating Teaching, Research and Public Scholarship," **Final Report to National Science Foundation** (NSF), Grant Number EEC-0315638.
- Srebric, J. 2005. "An Indoor Environment Design Tool for Entire Buildings," **Final Report to National Institute of Occupational Safety and Health** (NIOSH), Grant Number K01 OH007445.
- Burnett, E.F. and Srebric, J. 2003. "Partnership for Advancing Technologies in Housing: Moisture Control – Convective Drying in Residential Wall Systems," **Final Report to National Science Foundation** (NSF),

Grant Number CMS-0122062.

- Chen, Q. and Srebric, J. 2001. "How to verify, validate, and report indoor environment modeling CFD analyses," **Final Report for ASHRAE RP-1133**, 58 pages, Welsh School of Architecture, Cardiff University, UK and Department of Architectural Engineering, Pennsylvania State University, PA.
- Chen, Q. and Srebric, J. 2000. "Simplified diffuser boundary conditions for numerical room airflow models," **Final Report for ASHRAE RP-1009**, 181 pages, Department of Architecture, Massachusetts Institute of Technology, Cambridge, MA.
- Srebric, J. 2000. "Simplified Methodology for Indoor Environment Design," **Ph.D. Thesis**, 250 pages, Department of Architecture, Massachusetts Institute of Technology, Cambridge, MA.
- Chen, Q., Glicksman, L.R. and Srebric, J. 1999. "Simplified methodology to factor room air movement and the impact on thermal comfort into design of radiative, convective and hybrid heating and cooling systems," **Final Report for ASHRAE RP-927**, 184 pages, Department of Architecture, Massachusetts Institute of Technology, Cambridge, MA.

Supervised Thesis

- Zhao, M. 2011. "Assessment of Snow Effects on Heating Loads for Buildings with Green Roofs," **M.Sc. Thesis**, The Pennsylvania State University, August 2011, 109 pages.
- Heidarinejad, M. 2010. "Computational Fluid Dynamics (CFD) as a Tool to Predict, Improve, and Optimize the Performance of UVGI Disinfection Systems in Patient Rooms," **M.Sc. Thesis**, The Pennsylvania State University, December 2010, 126 pages.
- Kim, M.K. 2010. "Traffic and Airflow Noise Level Predictions for Buildings with Natural Ventilation in Urban Environments," **M.Sc. Thesis**, The Pennsylvania State University, June 2010, 112 pages.
- Davidovic, D. 2010. "Improvements in Numerical Airflow Modeling Around Multiple Buildings," **Ph.D. Thesis**, The Pennsylvania State University, November 2009, 397 pages.
- Tabares-Velasco, P.C. 2009. "Predictive Heat and Mass Transfer Model of Plant-Based Roofing Materials for Energy Saving Calculations," **Ph.D. Thesis**, The Pennsylvania State University, September 2009, 291 pages.
- Burley, B.J. 2009. "Infiltration Mapping for Urban Environments," **Ph.D. Thesis**, The Pennsylvania State University, September 2009, 242 pages.
- Vukovic, V. 2009. "Predicting Respiratory Health Impacts of Building Indoor Environments," **Ph.D. Thesis**, The Pennsylvania State University, April 2009, 273 pages.
- Vukovic, V. 2005. "Real-Time Determination of Indoor Pollutant Source Location," **M.Sc. Thesis**, Department of Architectural Engineering, The Pennsylvania State University, December 2005, 118 pages.
- Hu, B. 2005. "The Role of the Thermal Boundary Conditions on the Numerical Prediction of Indoor Contaminant Distribution," **M.Sc. Thesis**, Department of Architectural Engineering, The Pennsylvania State University, May 2005, 83 pages.
- Novoselac, A. 2004. "Combined Airflow and Energy Simulation Program for Building Mechanical System Design," **Ph.D. Thesis**, Dept. of Architectural Engineering, The Pennsylvania State University, October 2004, 276 pages.
- Qian, Y. 2004. "Development of an Algebraic Turbulence Model for Airflow and Contaminant Simulations around a Building," **M.Sc. Thesis**, Dept. of Architectural Engineering, The Pennsylvania State University, July 2004, 176 pages.
- Davidovic, D. 2004. "Convective Drying Potential of Ventilated Wall Cavity Systems in Building Enclosures," **M.Sc. Thesis**, Dept. of Architectural Engineering, The Pennsylvania State University, April 2004, 255 pages.
- Yuan, J. 2003. "Effective Prediction of Air Distribution and Contaminant Transport in Entire Buildings by

Coupling Multi-Zone, CFD and Energy Models," **M.Sc. Thesis**, Dept. of Architectural Engineering, The Pennsylvania State University, August 2003, 80 pages.

Thesis In Progress

- Alhafi, Z., **Doctoral Candidate**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Alanqar, I., **Masters Student**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Dahlhausen, M., **Masters Student**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Han, G., **Doctoral Candidate**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Heidarinejad, M., **Doctoral Candidate**, Dept. of Mechanical and Nuclear Engineering, The Pennsylvania State University.
- Jareemit, D., **Doctoral Candidate**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Kim, Y.-S., **Doctoral Student**, Dept. of Mechanical and Nuclear Engineering, The Pennsylvania State University.
- Yan, L., **Masters Student**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Ye, H., **Masters Student**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Zanganeh, M., **Doctoral Student**, Dept. of Architectural Engineering, The Pennsylvania State University.
- Zhao, M., **Doctoral Candidate**, Dept. of Architectural Engineering, The Pennsylvania State University.

Visiting Scholars and Postdocs

- Pitchurov, G. 12/2011-09/2012, "IAQ-UVGI Design Tool," Sponsored by the New York State Energy Research and Development Authority (**NYSERDA 10901**).
- Liu, J. 10/2009-12/2013, "The wind shelter effects on energy consumption and air pollution around building neighborhoods," sponsored by China Scholarship Council (**CSC**).
- Shu, S. 01/2011-12/2012, "Ventilation and Indoor Air Quality in Retail Stores," sponsored by American Society of Heating, Ventilating and Air Conditioning Engineers (**ASHRAE**).
- Zhu, S. 02/2011-01/2012, "Sustainable Air Disinfection Technology Innovations for Resource Limited Settings," sponsored by **Fogarty Foundation**.
- Sun, Y. 09/2010-08/2011, "Ventilation and Indoor Air Quality in Retail Stores," sponsored by American Society of Heating, Ventilating and Air Conditioning Engineers (**ASHRAE**).
- Heidarinejad, G. 01/2010-09/2010, "Predictive Modeling for Low-Energy Cooling Strategies," sponsored by **Tarbiat Modarres University**, Teheran, Iran.
- Ayata, T. 07/2008-06/2009, "Experimental Investigation of Building Height, Roof Effect and Garden Wall on the Air Velocity and Pressure Distribution around the Detached Houses," sponsored by the Research Council of Turkey (**TUBITAK**).
- Mansour, A. 02/2005-10/2005, "Optimizing Building Simulation Software For Energy Efficient Building," sponsored by **Fulbright Post Doctoral Fellowship**.
- Novoselac, A. 01/2005-06/2005, "Designing Healthy and Energy-Efficient Buildings Using Computational Fluid Dynamics," sponsored by National Science Foundation (**NSF**).

Editorial Boards

- Editorial Board Member of the **Building and Environment**, Elsevier Publication, 2012-date.
- Guest Editor of the **HVAC&R Research Journal**'s Special Issue on "Computational Fluid Dynamics (CFD) in Buildings," November 2010.
- Advisory Board Member of the **International Journal in Building, Urban, Interior and Landscape Technology (BUILT)**, March 2010 – date.
- Editorial Board Member of the **Open Construction and Building Technology Journal**, Bentham Science Publishers Ltd., November 2007 – date.
- Editorial Board Member of the **Building Simulation: An International Journal**, Tsinghua University Press and Springer, October 2007 – date.
- Associate Editor of the **HVAC&R Research Journal**, American Society of Heating Refrigerating and Air-conditioning Engineers, July 2007 – date.
- Editorial Board Member of the **Energy and Buildings**, Elsevier Publication, 2007-date.
- Editorial Board Member of **International Journal on Architectural Science**, The Hong Kong Polytechnic University, 2007 – date.
- Editorial Advisory Board Member for the **Annual Journal of Architectural Research and Studies** (JARS), Thailand, August 2004 - date.

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Conference Scientific Committees

- Member of the International Scientific Committee, the Thirteenth International **Building Simulation 2013** Conference, Chambery, France, August 25-28, 2013.
- Conference co-Chair for The 2nd International Conference on Building Energy and Environment **COBEE 2012**, Boulder, Colorado, August, 2012.
- Member of the International Scientific Committee for **eSim 2012**, IBPSA – Canada, Halifax, Canada, May 2-3, 2012.
- Member of the International Scientific Committee, the Twelfth International **Building Simulation 2011** Conference, Sydney, Australia, November 14-16, 2011.
- Member of the Technical Advisory Committee for the **Indoor Air 2011** Conference, Austin, Texas, USA, June 5-10, 2011.
- Member of the International Scientific Committee of **IAQVEC 2010**, the 7th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings, Syracuse, NY, August 15-18, 2010.
- Member of the International Scientific Committee, the Eleventh International **Building Simulation 2009** Conference, Glasgow, UK, July 27-30, 2009.
- Member of the Technical Review Committee for the **Healthy Buildings 2009** Conference, Syracuse, NY, September 13-17, 2009.
- Member of the International Scientific Committee for the **Indoor Air 2008** Conference, Copenhagen, Denmark, August 17-22, 2008.
- Member of the Technical Review Committee for the **Cleantech 2008** Conference, Boston, MA, June 1-4, 2008.
- Member of the International Scientific Committee of the first International Conference on Building Energy and Environment (**COBEE**), Dalian, China, August 4-6, 2008.
- Member of the International Scientific Committee for **eSim 2008**, IBPSA – Canada, Quebec City, Canada, May 21-22, 2008.
- Member of the International Scientific Committee for **eSim 2006**, IBPSA – Canada, Toronto, Canada, May 3-5, 2006.

- Member of the International Scientific Committee for the **Indoor Air 2005** Conference, Bejing, China, September 4-9, 2005.
- Member of the International Scientific Committee, the Ninth International **Building Simulation 2005** Conference, Montreal, Canada, August 15-18, 2005.
- Member of the International Scientific Committee, the Eight International **Building Simulation 2003** Conference, Eindhoven, The Nederlands, August 11-14, 2003.

Other Committee and Professional Memberships

- Invited Member of ISIAQ STC 21 – Ventilation, International Society of Indoor Air and Climate (ISIAQ), 2011-2014.
- Elected Chair of the Architectural Engineering Promotion & Tenure Committee, 2012-2013.
- Elected Member of the Architectural Engineering Promotion & Tenure Committee, 2011-2012.
- Elected Member of the Faculty Senate, Penn State University, 2010-2014.
- Elected Substitute Member of the Faculty Senate, Penn State University, 2009-2010.
- Invited member of the steering committee to oversee and consult Advanced Buildings Program (ABP) at New York State Energy Research and Development Authority (NYSERDA), 2006 - date.
- Elected Member of the Graduate Council, Penn State University, 2006-2008.
- Research Sub-Committee Chair for Technical Committee on Indoor Environment Modeling, ASHRAE, January 2006 – date.
- Member of Air & Waste Management Association (A&WMA), July 2003 – date.
- Department Representative in College Of Engineering Environmental Institute at PSU, Jan. 2002 – August 2007.
- Member of American Society for Engineering Education (ASEE), 2001 – date.
- Member of American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE), 1997 – date.
- Voting Member of ASHRAE TC4.10 (Indoor Environmental Modeling) and TC5.3 (Room Air Distribution) 2002 – 2005.
- Department Representative in the MIT Graduate Student Council, May 1999 - Aug. 2000
- Vice President of MOST - MIT Student Organization, Feb. 1999 - Aug. 2000
- President of MIT ASHRAE Student Branch, Oct. 1997 - Oct. 1998.

Invited Lectures and Speeches

- Srebric, J. 2013. "Urban density and wind driven thermal loads for individual buildings," **Massachusetts Institute of Technology** (MIT), MA.
- Srebric, J. 2013. "Urban density and wind driven thermal loads for individual buildings," **University of Pennsylvania**, Philadelphia, PA.
- Srebric, J. 2012. "The Role of Buildings in Sustainable Urban Eco-Systems," **University of Maryland**, College Park, MD.
- Srebric, J. 2011. "Design Challenges for Sustainable Urban Eco-Systems," **Graduate School of Design, Harvard**, Cambridge, MA.
- Srebric, J. 2011. "The Role of Buildings in Sustainable Urban Eco-Systems," **Columbia University**, New York City, NY.

- Srebric, J. 2011. "Creating Opportunities for Development of Sustainable Built Environments," **Texas A&M University**, College Station, TX.
- Srebric, J. 2010. "Quantifying the role of plant materials in the total heat balance for a building enclosure system," **Princeton University**, NJ.
- Srebric, J. 2010. "Green Roofs and Their Potential in Reducing Roof Heat Fluxes," **Syracuse University**, Syracuse, NY.
- Srebric, J. 2010. "Occupants' Perceptions of Comfort and Health Outcomes in a Green Building," **Oak Ridge National Laboratory** (ORNL), Oak Ridge, TN.
- Srebric, J. 2010. "Validation of CFD results with measured on-site or laboratory data for IAQ assessment," Institute for Health and Consumer Protection, **Joint Research Center** (JRC), European Commission, Ispra, Italy.
- Srebric, J. 2009. "Performance Assessment of Passive Building Enclosure Systems," **Lawrence Berkeley National Laboratory** (LBNL), Berkeley, CA.
- Srebric, J. 2009. "Do Green Buildings Have Influence on Occupants' Perception of Comfort and Health Outcomes?" **University of Texas**, Tyler, TX.
- Srebric, J. 2008. "Simulation Challenges for Integration of Building Systems into Natural Environment," **Laboratório de Eficiência Energética em Edificações, Centro Tecnológico**, UFSC, Rio de Janeiro, Brazil.
- Srebric, J. 2008. "Experiments and their Contributions to Development of Accurate Models for Sustainable Building Simulations," Civil, Environmental and Architectural Engineering, **University of Colorado at Boulder**, CO.
- Srebric, J. 2008. "Health and Comfort: Engineering Perspective," Harvard School of Public Health (HSPH), **Harvard University**, MA.
- Srebric, J. 2008. "Passive Building Envelope Solutions for Sustainable Housing," Building Technology, **Massachusetts Institute of Technology** (MIT), MA.
- Srebric, J. 2007. "Opportunities for Integration of Human and Natural Systems through Research of Building Dynamic Systems," School of Civil Engineering, **Purdue University**, IN.
- Srebric, J. 2007. "Modeling of Transport Phenomena to Promote Sustainable Building Design," Dept. of Civil and Environmental Engineering, **University of Texas at Austin**, TX.
- Srebric, J. 2007. "Opportunities for Integration of Building Systems into Natural Environment to Promote Energy Efficiency and Improved Population Health," Dept. of Civil and Environmental Engineering, **Stanford University**, CA.
- Srebric, J. 2006. "Challenges and Perspectives for Numerical Simulations of Building Indoor and Outdoor Environments," Applied Research Laboratory, **Penn State University**, PA.
- Srebric, J. 2005. "The Role and Future of Simulation Tools in Sustainable Building Design," Dept. of Civil and Environmental Engineering, **Stanford University**, CA.
- Srebric, J. 2005. "Challenges and Perspectives for Numerical Simulations of Building Indoor and Outdoor Environments," Engineering, Science, and Mechanics (EMS) Department, **Penn State University**, PA.
- Srebric, J. 2004. "Development of New HVAC Design Tools: Search for the Holy Grail of Ventilation Research," **Lawrence Berkeley National Laboratory** (LBNL), Berkeley, CA.
- Srebric, J. 2004. "Airflow Simulations in Architecture Using Computational Fluid Dynamics (CFD)," 3-day workshop and 2 public lectures: 1. "Architectural Engineering: Towards Practical Integration" and 2. "How Architectural Design can Benefit from an Engineering Tool," sponsored by the government of Thailand, **Thammasat University and Kasetsart University**, Bangkok, Thailand.
- Srebric, J. 2002. "Fast and Reliable Prediction of Indoor Contaminant Distribution for the Entire Buildings," **Syracuse University**, NY.
- Srebric, J. 2002. "Effective CFD use in HVAC design of Healthy and Energy Efficient Buildings," **Center for**

Research on Computation and its Application (CERCA), Montreal, Quebec, Canada.

- Srebric, J. 2002. "Computational Fluid Dynamic in Building Design," **University of Belgrade**, Serbia.
- Srebric, J. 2002. "Design Tools for Indoor Air Quality Control," **Syracuse University**, NY.
- Srebric, J. 2001. "Numerical Modeling of Contaminant Dispersion," ORNL DURIP review at the Applied Research Laboratory, **Penn State University**, PA.
- Srebric, J. 2001. "Coupled Energy and CFD Analysis for Ventilation System Design," **De Montfort University**, UK.
- Srebric, J. 2000. "Simplified Methodology for Indoor Environment Design," The Intelligent Workplace Laboratory, **Carnegie Mellon University**, PA.

Invited Conference Speaker

- Srebric, J. 2013. "Multi-Scale Modeling of Building Energy and Airflows in Urban Neighborhoods," **World Summit on Building Simulation Research**, T.C. Chan Center for Building Simulation and Energy Studies, University of Pennsylvania School of Design, March 28, 2013, Philadelphia, PA.
- Srebric, J. 2011. "Opportunities and Challenges for Multi-Scale Modeling of Sustainable Buildings," **National Academy of Engineering** (NAE), 2011 U.S. Frontiers of Engineering Symposium, September 19 –21, 2011, Mountain View, CA.
- Srebric, J. 2010. "What is Computational Fluid Dynamics (CFD) and What it Can or Cannot Do for Your Project" **Architectural Engineering Centennial Conference**, July 2-4, 2010, University Park, PA.
- Srebric, J. 2007. "The next generation of coupled simulation models and their connections to underlying physical processes" **Building Simulations 2007** (BS2007) Conference, Beijing, China.
- Srebric, J. 2006. "Integration of Airflow/Energy Simulations in the Building Design Process" **SimBild 2006** at the Massachusetts Institute of Technology (MIT), August 4-6, 2006, Cambridge, MA.

Invited Conference Plenary Speech

- Srebric, J. 2011. "Green buildings, their indoor air quality and connections to changing climatic conditions," Plenary Session on June 9, **Indoor Air 2011**, June 5-10, Austin, TX

Industry Speaking Engagements

- Srebric, J. 2008. "Energy Savings with Green Roofs and Integration with Mechanical Systems," presented to the Roofing Alliance for Progress, Sarasota, FL, April 19, 2008.
- Srebric, J. 2006. "Opportunities for Airflow/Energy Simulation Results to Inform Building Design Process," presented to CBT Architects, Boston, MA, June 19, 2006.

Consulting Record

- Environmental Protection Agency, DC. Report on different green building rating systems and their effect on climate change.
- Wind Tamer, NY. Optimization of small wind turbine for integration with building energy systems.
- Green Roundtable, MA. Review of sustainable project solutions for three different building projects.
- Bergmeyer Associates, MA. Assessment of the Natural Ventilation Feasibility for an LL Bean Store.
- Atelier Ten, NY. Assisted in designing a prototype of a novel ventilation system for campus buildings.
- ASHRAE, GA. Developed guidelines for use of computational fluid dynamics in heating, ventilating and

air-conditioning applications.

- University of Michigan, College of Architecture + Planning, MI. Conducted computational fluid dynamics of a new school with sustainable building technologies for an Architectural competition.
- Sear-Brown, PA. An on-site survey and computational dynamic simulations of a painting studio with ventilation deficiencies.
- FabFlow, NH. Experimental testing of a new diffuser type and evaluation of its performance for office buildings.
- EnPlus, Yugoslavia. Assisted in selection and use of energy and computational fluid dynamics simulation software.