ONE-PAGE SUMMARY
Wangda Zuo, Ph.D.

Education:

Ph.D. (2010) Purdue University; M.Sc. (2005) Friedrich-Alexander-University Erlangen-Nuremberg, Germany; M. Eng. (2003) and B. Sc. (2000) Chongqing University, China

Fields of Interests:

Smart, Sustainable, and Resilient City
Building and District Energy Systems
Indoor Environment Modeling
Building Controls Design and Optimization

Current Position:

Assistant Professor, Department of Civil, Architectural and Environmental Engineering, University of Miami

Major Professional Services:

- *Treasurer* and *Affiliate Director* of International Building Performance Simulation Association (IBPSA)
- *Research Committee Chair* of IBPSA-USA
- *Associate Editor* of Journal of Sustainable Buildings
- *Faculty Advisory* of ASHRAE University of Miami Student Branch
- *Secretary*, *Subcommittee Chair* and *Voting Member* of various ASHRAE committees

Major Honors and Awards:

- *Distinguished Service Award*, ASHRAE, 2017.
- *Eliahu I. Jury Early Career Research Award*, College of Engineering, University of Miami, 2016.
- *SEEDS You Choose Leadership Award*, University of Miami, 2013, 2014, 2015, 2016.
- *Emerging Professional Award* in recognition of superior early achievement in the field of energy modeling, IBPSA-USA, 2016.
- *Provost Research Award*, University of Miami, 2014.
- *Best Poster Award*, IBPSA-USA Winter Meeting, Chicago, IL, 2009

Publications:

- Journal Papers: 20
- Papers in Conference Proceedings: 37
- Invited Seminars and Lectures: 39

Sponsored Research Projects:

- $2.04M (Zuo's responsibility: $1.85M)
- 17 projects funded by NSF, DOE, DOD, DHS, ASHRAE, Chase and etc.

Major Subjects Taught:

- Building Energy Modeling and Simulation
- Sustainable Construction
- Indoor Environment Modeling

Supervisees:

Summary	*Total*	*Completed*	*In Progress*
Ph.D. Students	10	2	8
M.S. & B.S. Students	18	14	4
Visiting Scholars/Students	8	5	3

Wangda Zuo

Date: May 30, 2017

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Principle Fields of Interests

Smart, Sustainable, and Resilient City; Building and District Energy Systems; Indoor Environment Modeling; Building Controls Design and Optimization

Education

Ph.D. (05/2010) Mechanical Engineering, Purdue University, USA
M.Sc. (07/2005) Computational Engineering, Friedrich-Alexander-University Erlangen-Nuremberg, Germany
M. Eng. (06/2003) Automation, Chongqing University, China
B. Sc. (07/2000) Automation, Chongqing University, China

Experience

Institution	Position	Beginning	Ending
Center for Computational Science, University of Miami, USA	Member	09/2016	-
Center for Urban & Community Design, University of Miami, USA	Member	03/2016	-
Department of Civil, Architectural and Environmental Engineering, University of Miami, USA	Assistant Professor	01/2013	-
Environmental Energy Technology Division, Lawrence Berkeley National Laboratory (LBNL), USA	Research Scientist	03/2011	12/2012
Environmental Energy Technology Division, Lawrence Berkeley National Laboratory, USA	Post Doctoral Fellow	05/2010	03/2011
School of Mechanical Engineering, Purdue University, USA	Graduate Research Assistant	08/2006	04/2010
German Aerospace Center, Germany	Researcher	09/2005	08/2006
University Erlangen-Nuremberg, Germany	Research Assistant	05/2004	02/2005
Automation and Drives Group, Siemens AG, Germany	Intern	07/2003	10/2004
Automation and Drives Group (A&D), Siemens Ltd., China	Intern	12/2001	07/2002

Teaching Record

Term	Subject No.	Subject Title	Role
2017 Spring	CAE781	Advanced Building Energy Modeling	Instructor
2017 Spring	CAE560/660	Sustainable Construction	Instructor
2016 Fall	CAE780	Indoor Environment Modeling	Instructor
2016 Spring	CAE560/660	Sustainable Construction	Instructor
2015 Fall	CAE790-T	Modeling and Simulation of Building Energy and Control System	Instructor
2015 Spring	CAE560	Sustainable Construction	Instructor
2014 Fall	CAE680	Indoor Environment Modeling	Instructor
2014 Spring	CAE560	Sustainable Construction	Instructor
2013 Fall	CAE690-T	Advanced Modeling of Hybrid Systems in Buildings	Instructor
2013 Fall	CAE690-01	Data Analysis and Visualization for Building Systems	Instructor

| | 2013 Spring | CAE560 | Sustainable Construction | | Instructor |

Sponsored Research
Total: $2.04M (Zuo's responsibility: $1.85M)

	Project Title	*Sponsor*	*Role*	*Amount ($)*
17.	1661-RP, Development and Validation of Dynamic Models for the Control of Chiller Plants with Water Side Economizer (08/17-10/18)	ASHRAE	PI	116,560
16.	CRISP Type 1: Collaborative Research: A Human-Centered Computational Framework for Urban and Community Design of Resilient Coastal Cities (Award No. ACI-1638336; 01/17-12/18)	National Science Foundation	Co-PI	299,579
15.	Improving Data Center Energy Efficiency through End-to-End Cooling Modeling and Optimization (Award No. DE-EE0007688; 10/16-11/19)	Department of Energy	PI	522,460
14.	Building to Grid Integration in a Smart City (10/16-08/17)	University of Miami	PI	2,500
13.	BIGDATA: Collaborative Research: IA: Big Data Analytics for Optimized Planning of Smart, Sustainable, and Connected Communities (Award No. IIS-1633338; 9/16-8/19)	National Science Foundation	PI	443,867
12.	Fast Simulation of Dense Gas Transportation in Buildings using Cross-Platform Parallel Computing (07/16-08/17)	LBNL	PI	25,000
11.	Model-based Controls Optimization for a Data Center Cooling System (04/16-12/16)	JPMorgan Chase	PI	40,000
10.	1771-TRP, Energy Modeling of Typical Commercial Buildings in Support of ASHRAE Building Energy Quotient Energy Rating Program (04/16-03/18)	ASHRAE	PI	199,395
9.	Living Campus Energy Laboratory (06/15-05/16)	University of Miami	PI	2,500
8.	Development of a Fast Model for Predicting Dense Gas Transportation in Buildings (02/15-12/15)	Department of Homeland Security via LBNL	PI	25,000
7.	Research Exchange in Building Energy Modeling (09/14-07/15)	University of Miami	PI	2,500
6.	Development and Demonstration of A Scalable Indoor Environment Model for Model Predictive Control of Energy Efficient Building Ventilation (06/14-05/15)	University of Miami	PI	16,071

5.	Developing Model-Based Fault Detection and Diagnostic for the Energy Efficient Building System Operation (01/14-09/14)	University of Miami	PI	2,500
4.	Implementation and Validation of Modelica Based Models for a Large Chiller Plant System (01/13-09/16)	Department of Defense via LBNL	PI	120,001
3.	Coupling Fast Fluid Dynamics and Modelica Buildings Library for Integrated Simulation of Indoor Environment and HVAC Systems (01/13-09/13)	Department of Energy via LBNL	PI	30,100
2.	Demonstration of a Modelica-Based Tool Chain for Rapid Prototyping and Evaluation of Integrated Building Controls (02/12-01/13)	Department of Energy through Consortium for Building Energy Innovation	Co-PI	188,700
1.	Fast Simulation of Contaminant Transportation in Buildings (07/09-06/10)	Chongqing University	PI	8,823

Received Industrial Gift

- J. Cumpton, $1000, 12/31/2014.
- Costal Construction of M.D. County, Inc, $4000, 10/24/2013.

Publications

Symbols: <u>Underline</u>: Students under my supervision; *Italic*: Visiting scholars under my supervision;

Journal Papers

20. <u>S. Huang</u>, **W. Zuo**, M. Sohn 2017 "A Bayesian Network Model for Predicting Cooling Load of Commercial Buildings", accepted by *Building Simulation*.

19. <u>W. Tian</u>, <u>T. A. Sevilla</u>, <u>D. Li</u>, **W. Zuo,** M. Wetter 2017 "Fast and self-learning indoor airflow simulation based on In Situ Adaptive Tabulation", accepted *by Journal of Building Performance Simulation.*

18. <u>S. Huang</u>, <u>A. Malara</u>, **W. Zuo**, M. Sohn 2017, "A Bayesian Network Model for the Optimization of a Chiller Plant's Condenser Water Set Point", accepted by *Journal of Building Performance Simulation*.

17. <u>S. Huang</u>, **W. Zuo**, M. Sohn 2017, "Improved cooling tower operation of legacy chiller plants by optimizing the condenser water set point", *Building and Environment*, 111, pp. 33-46.

16. <u>W. Tian</u>, <u>T. A. Sevilla</u>, **W. Zuo** 2017 "A systematic evaluation of accelerating indoor airflow simulations using cross platform parallel computing", *Journal of Building Performance Simulation,* 10 (3), pp 243-255.

15. <u>S. Huang</u>, **W. Zuo**, M. Sohn 2016 "Amelioration of the cooling load based chiller sequencing control", *Applied Energy,* 168, pp. 204-215.

14. **W. Zuo**, M. Wetter, <u>W. Tian</u>, <u>D. Li</u>, M. Jin, Q. Chen 2016, "Coupling indoor airflow, HVAC, control and building envelope heat transfer in the Modelica Buildings library", *Journal of Building Performance Simulation,* 9(4), pp. 366-381.

13. *G. Shao*, <u>*T. Li*</u>, **W. Zuo**, S. Wu, T. Liu 2015. "A combinational clustering based method for cDNA microarray image segmentation", PLoS ONE, 10(8),

12. M. Wetter, **W. Zuo**, T. Nouidui, X. Pang 2014. "Modelica Buildings library," *Journal of Building Performance Simulation*, 7(4), 253-270.

11. T. Nouidui, M. Wetter, **W. Zuo**, 2014. "Functional mock-up unit for co-simulation import in EnergyPlus," *Journal of Building Performance Simulation*, 7(3), 192-202.

10. **W. Zuo**, A. McNeil, M. Wetter, E. Lee 2014. "Acceleration of the matrix multiplication of Radiance three phase daylighting simulations with parallel computing on heterogeneous hardware of personal computer," *Journal of Building Performance Simulation*, 7(2), 152-163. LBNL Report LBNL-6461E.

9. M. Jin, **W. Zuo**, Q. Chen 2013. "Simulating natural ventilation in and around buildings by fast fluid dynamics," *Numerical Heat Transfer, Part A: Applications*, 64(4), 273-289.

8. M. Jin, **W. Zuo**, Q. Chen 2012. "Improvement of fast fluid dynamics for simulating airflow in buildings," *Numerical Heat Transfer, Part B Fundamentals*, 62(6), 419-438.

7. **W. Zuo**, M. Jin, Q. Chen 2012. "Reduction of numerical viscosity in FFD model," Engineering Applications of Computational Fluid Mechanics, 6(2), 234-247.

6. **W. Zuo**, Q. Chen 2010. "Simulations of air distributions in buildings by FFD on GPU," HVAC&R Research, 16 (6), 785-798.

5. **W. Zuo**, J. Hu, Q. Chen 2010. "Improvements on FFD modeling by using different numerical schemes", *Numerical Heat Transfer, Part B: Fundamentals*, 58(1), 1-16.

4. **W. Zuo**, Q. Chen 2010. "Fast and informative flow simulation in a building by using fast fluid dynamics model on graphics processing unit," *Building and Environment*, 45(3), 747-757.

3. **W. Zuo**, Q. Chen 2009. "Real-time or faster-than-real-time simulation of airflow in buildings," *Indoor Air*, 19 (1), 33-44.

2. V. Kumar, B. Frohnapfel, J. Jovanovic, M. Breuer, **W. Zuo**, I. Hadzic, R. Lecher 2009. "Anisotropy invariant Reynolds stress model of turbulence (AIRSM) and its application to attached and separated wall-bounded flows," *Flow, Turbulence and Combustion*, 83, 81-103.

1. **W. Zuo**, T. Yang, W. Zou 2004. "Updating traditional CRM system by terminal server," *Journal of Chongqing University (Natural Science Edition, in Chinese)*, 27(1), 94-95.

Conference Proceedings

37. W. Tian, **W. Zuo**, T. Sevilla, M. Sohn 2017. "Coupled simulation between CFD and multizone models based on Modelica Buildings library to study indoor environment control", accepted by *the 12th International Modelica Conference,* May 15-17, Prague, Czech Republic.

36. *D. He*, S. Huang, **W. Zuo**, R. Kaiser 2016. "A virtual testbed for net zero energy communities", *Proceedings of the BuildSys '16*, pages 211-212, November 16-17, Palo Alto, CA.

35. R. Sterling, T. Mueller, A. Andriamamonjy, A. Giretti, M. Bonvini, Z. O'Neill, M. Wetter, M.V. Cavey, A. Costa1, G. Boehme, **W. Zuo**, R. Klein, B. Dong, M.M. Keane 2016, "IEA annex 60 activity 2.3: model use during operation, approach and case studies", *Proceedings of the Building Simulation and Optimization 2016 Conference*, September 12-14, Newcastle, UK.

34. D. Li, W. Tian, **W. Zuo**, M. Wetter 2016. "Fast indoor airflow simulation using in situ adaptive tabulation and fast fluid dynamics", *Proceedings of the ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference*, August 10-12, Salt Lake City, UT.

33. *D. He*, S. Huang, **W. Zuo**, R. Kaiser 2016. "Towards to the development of virtual testbed for net zero energy communities", *Proceedings of the ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference*, August 10-12, Salt Lake City, UT.

32. S. Huang, **W. Zuo**, M.D. Sohn 2016. "A Bayesian network model for predicting the cooling load of educational facilities", *Proceedings of the ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference*, August 10-12, Salt Lake City, UT.

31. S. Huang, M.V. Cavey, R. Sterling, **W. Zuo**, L. Helsen, A. Giretti, M. Bonvini, Z. O'Neill, M. Wetter, A. Costa, G. Boehme, R. Klein, B. Dong, M. M. Keane 2016. "IEA Annex 60 Activity 2.3: model use during operation, approach and case studies", *Proceedings of the 12th REHVA World Congress (CLIMA2016)*, May 22-25, Aalborg, Denmark.

30. S. Huang, **W. Zuo**, M.D. Sohn 2015. "A new method for the optimal chiller sequencing control", *Proceedings of* the *14th International Conference of the International Building Performance Simulation Association (Building Simulation 2015)*, December 7-9, Hyderabad, India.

29. R. Sterling, A. Giretti, M. Bonvini, Z. O'Neill, M. Wetter, M.V. Cavey, A. Costa1, G. Boehme, **W. Zuo**, R. Klein, B. Dong, M.M. Keane 2015. "IEA annex 60 activity 2.3: model use during operation, approach and case studies", *Proceedings of the 14th International Conference of the International Building Performance Simulation Association (Building Simulation 2015)*, December 7-9, Hyderabad, India.

28. F. Niu, Z. O'Neill, **W. Zuo**, F. Li 2015, "Assessment of different data-driven algorithms for AHU energy consumption predictions", *Proceedings of the 14th International Conference of the International Building Performance Simulation Association (Building Simulation 2015)*, December 7-9, Hyderabad, India.

27. M. Wetter, M. Bonvini, T.S. Nouidui, W. Tian, **W. Zuo** 2015, "Modelica Buildings library 2.0", *Proceedings of the 14th International Conference of the International Building Performance Simulation Association (Building Simulation 2015)*, December 7-9, Hyderabad, India.

26. A.C.L. Malara, S. Huang, **W. Zuo**, M.D. Sohn, N. Celik 2015, "Optimal control of chiller plants using Bayesian network", *Proceedings of the 14th International Conference of the International Building Performance Simulation Association (Building Simulation 2015)*, December 7-9, Hyderabad, India.

25. R. J. Miranda, S. Huang, G. A. Barrios, D. Li, **W. Zuo** 2015, "Energy efficient design for hotels in the tropical climate using Modelica", *Proceedings of the 11th International Modelica Conference*, pages 71-78, September 21-23, Versailles, France.

24. *T. Li*, *G. Shao*, S. Huang, **W. Zuo**, Z., O'Neill, W. Shi 2015, "Genetic algorithm for building optimization - state-of-the-art survey", *Proceedings of the 9th International Symposium on Heating, Ventilation and Air Conditioning ISHVAC and the 3rd International Conference on Building Energy and Environment (COBEE)*, July 12-15, Tianjin, China.

23. **W. Zuo**, M. Wetter, D. Li, M. Jin, W. Tian, Q. Chen 2014. "Coupled simulation of indoor environment, HVAC and control system by using fast fluid dynamics and Modelica," *Proceedings of the 2014 ASHRAE/IBPSA-USA Building Simulation Conference*, pages 56-63, September 10-12, Atlanta, GA.

22. S. Huang, **W. Zuo** 2014. "Optimization of water-cooled chiller plant system operation", *Proceedings of the 2014 ASHRAE/IBPSA-USA Building Simulation Conference*, pages 300-307, September 10-12, Atlanta, GA.

21. E. Widl, B. Delinchan, S. Kuebler, D. Li, W. Mueller, V. Norrefeldt, T. S. Nouidui, S. Stratbuecker, M. Wetter, F. Wurtz, **W. Zuo** 2014. "Novel Simulation Concepts for Buildings and Community Energy Systems based on the Functional Mock-up Interface Specification", *Proceedings of the Workshop on Modeling and Simulation of Cyber-Physical Energy Systems 2014*, pages 1-6, April 14, Berlin, Germany.

20. T. Nouidui, M. Wetter, **W. Zuo** 2013. "Functional mock-up unit import in EnergyPlus for co-simulation", *Proceedings of the 13th International Conference of the International Building Performance Simulation Association (Building Simulation 2013)*, pages 3275-3282, August 26-28, Chambery, France.

19. D. Kim, **W. Zuo**, M. Wetter, J. Braun 2013. "Comparisons of building system modeling approaches for control system design," *Proceedings of the 13th International Conference of the International Building Performance Simulation Association (Building Simulation 2013)*, pages 3267-3274, August 26-28, Chambery, France.

18. M. Jin, Q. Chen, and **W. Zuo** 2013. "Validation of a fast fluid dynamics program for simulating natural ventilation in buildings," *Proceedings of CLIMA 2013, the 11th REHVA World Congress and the 8th Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings*, June 16-19, Prague, Czech.

17. W. Tian, **W. Zuo** 2013. "Literature review and research needs to couple building energy and airflow simulation," *Proceedings of the APEC Conference on Low-carbon Towns and Physical Energy Storage*, pages 492-496, May 25-26, Changsha, China.

16. T. Nouidui, K. Phalak, **W. Zuo**, M. Wetter 2012. "Validation and application of the room model of the Modelica *Buildings* library," *Proceedings of the 9th International Modelica Conference*, pages 727-736, September 3-5, Munich, Germany.

15. M. Jin, **W. Zuo**, Q. Chen 2012. "Validation of three-dimensional fast fluid dynamics for indoor airflow simulations," *Proceedings of the 2nd International Conference on Building Energy and Environment (COBEE2012)*, pages 1055-1062, August 1-4, Boulder, CO.

14. T. Nouidui, M. Wetter, **W. Zuo** 2012. "Validation of the window model of the Modelica *Buildings* library,"

Proceedings of the 5th National Conference of International Building Performance Simulation Association -USA (SimBuild2012), pages 529-536, August 1-3, Madison, WI.

13. **W. Zuo**, A. McNeil, M. Wetter, E. Lee 2011. "Acceleration of Radiance for lighting simulation by using parallel computing with OpenCL," *Proceedings of the 12th International Conference of the International Building Performance Simulation Association (Building Simulation 2011)*, pages 110-117, November 14-16, Sydney, Australia. LBNL Report 5049E.

12. M. Wetter, **W. Zuo**, T. Nouidui 2011. "Modeling of heat transfer in rooms in the Modelica "Buildings" library," *Proceedings of the 12th International Conference of the International Building Performance Simulation Association (Building Simulation 2011),* pages 1096-1103, November 14-16, Sydney, Australia.

11. **W. Zuo**, Q. Chen 2011 "Validation of a fast-fluid-dynamics model for predicting distribution of particles with low Stokes number," *Proceedings of the 12th International Conference on Indoor Air Quality and Climate (Indoor Air 2011)*, June 5-10, Austin, TX.

10. **W. Zuo**, M. Wetter 2011. "Advanced simulations of building energy and control systems with an example of chilled water plant modeling," *Proceedings of the 8th International Forum and Workshop on Combined Heat, Air, Moisture and Pollutant Simulations (CHAMPS 2011)*, March 20-22, Nanjing, China.

9. M. Wetter, **W. Zuo**, T. Nouidui 2011. "Recent developments of the Modelica Buildings library for building energy and control systems," *Proceedings of the 8th International Modelica Conference*, pages 266-275, March 20-22, Dresden, Germany. LBNL Report 4793E.

8. **W. Zuo**, Q. Chen 2010. "Fast simulation of smoke transport in buildings," *Proceedings of the 41st International HVAC&R congress*, pages 340-348, December 1-3, Beograd, Serbian.

7. J. Hu, **W. Zuo**, Q. Chen 2010. "Impact of time-splitting schemes on the accuracy of FFD simulations," *Proceedings of the 7th International Indoor Air Quality, Ventilation and Energy Conservation in Buildings Conference (IAQVEC 2010)*, August 15-18, pages 55- 60, Syracuse, NY.

6. **W. Zuo**, Q. Chen 2010. "Improvements on the fast fluid dynamics model for indoor airflow simulation," *Proceedings of the 4th National Conference of International Building Performance Simulation Association -USA (SimBuild2010)*, pages 539-546, August 11-13, New York, NY.

5. **W. Zuo**, Q. Chen 2009. "High-performance and low-cost computing for indoor airflow," *Proceedings of the 11th International Conference of the International Building Performance Simulation Association (Building Simulation 2009)*, pages 244-249, July 27-30, Glasgow, U.K.

4. **W. Zuo**, Q. Chen 2009. "Fast parallelized flow simulations on graphic processing units," *Proceedings of the 11th International Conference on Air Distribution in Rooms (RoomVent 2009)*, May 24-27, Busan, Korea.

3. **W. Zuo**, Q. Chen 2007. "Real time airflow simulation in buildings," *Proceedings of the 6th International Indoor Air Quality, Ventilation and Energy Conservation in Buildings Conference (IAQVEC 2007)*, Vol. 2, pages 459-466, October 28-31, Sendai, Japan.

2. **W. Zuo**, Q. Chen 2007. "Validation of fast fluid dynamics for room airflow," *Proceedings of the 10th International Conference of the International Building Performance Simulation Association (Building Simulation 2007)*, pages 980-983, September 3-6, Beijing, China.

1. Q. Chen, Z. Zhang, **W. Zuo** 2007. "Computational fluid dynamics for indoor environment modeling: past, present, and future," *Proceedings of XXV Congresso Nazionale UIT sulla Trasmissione del Calore (25th UIT National Heat Transfer Conference)*, pages 3-8, June 18-20, Trieste, Italy and also in *Proceedings of the 6th International Indoor Air Quality, Ventilation and Energy Conservation in Buildings Conference (IAQVEC 2007)*, Vol. 3, pages 1-9, October 28-31, Sendai, Japan.

Posters

7. W. Saad, N. Ramakrishnan, H. Dhillon, **W. Zuo** 2017 "BIGDATA: collaborative research: IA: big data analytics for optimized planning of smart, sustainable, and connected communities", *2017 Joint PI Meeting: NSF BIGDATA and Big Data Hubs & Spokes,* March 15-17, Washington DC.

6. *D. He*, S. Huang, **W. Zuo**, R. Kaiser 2016. "A virtual testbed for net zero energy communities", BuildSys '16, November 16-17, Palo Alto, CA.

5. S. Huang, **W. Zuo** 2015. "Optimization of chilled water plant operation using Modelica *Buildings* library",

2015 Florida Energy System Consortium Workshop, May 20-21, Orlando, FL.

4. D. Li, **W. Zuo** 2014. "Modeling and operation evaluation for innovative heat recovery system," *Honors Summer Research Reception*, University of Miami, Coral Gables, FL.

3. **W. Zuo**, Q. Chen 2009, 2010. "High performance indoor airflow simulation," *IBPSA-USA Winter Conference (2009)*, Chicago, IL and also at *the 1st Annual OMEGA Research Exhibition (2010)*, West Lafayette, IN.

2. **W. Zuo**, Q. Chen 2008. "Real time simulation of indoor airflow on graphic processing units (GPU)," *the 3rd National Conference of IBPSA-USA (SimBuild 2008)*, Berkeley, CA.

1. **W. Zuo**, Q. Chen 2007. "Real time airflow simulation in buildings," *Sigma Xi Grad Student Poster Competition*, West Lafayette, IN.

Invited Talks

28. W. Zuo 2017. "Modeling and Simulation for Cyber-Physical Systems: From Sustainable Building to Smart City", CECE Seminar Series 2017, Department of Civil, Environmental and Construction Engineering, University of Central Florida, Orlando, April 10.

27. W. Zuo 2017. "Innovations in Modeling and Simulation for Cyber-Physical Systems: From Sustainable Building to Smart City", Department of Civil and Environmental Engineering, Vanderbilt University, Nashville, TN, March 1.

26. W. Zuo 2017. "From Sustainable Buildings to Smart and Resilient Cities: Research and Development of Equation-based Modeling for Solving the Real-World Challenges", Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, CO, February 16.

25. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Tsinghua University, Beijing, China, December 30.

24. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Nanjing University, Nanjing, China, December 29.

23. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Southeast University, Nanjing, China, December 28.

22. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", the 11th ME Forum, School of Mechanical Engineering, Tongji University, Shanghai, China, December 27.

21. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Donghua University, Shanghai, China, December 26.

20. W. Zuo 2016. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Hunan University, Changsha, China, December 23.

19. W. Zuo 2016. "Data-drive solutions for building energy efficiency - a view from building scientists", Xiamen University of Technology, Xiamen, China, December 22.

18. W. Zuo 2016. "Model-based optimization for building energy efficiency", the 221th Academic Seminar on Integration Science and Technology, Shenzhen Institutes of Advanced Technology, China Academy of Sciences, Shenzhen, China, June 1.

17. W. Zuo 2016. "Model-based optimization for building energy efficiency", College of Automation, Chongqing University, Chongqing, China, May 24.

16. W. Zuo 2015. "Innovations in modeling and simulations for sustainable buildings", Department of Civil, Architectural and Environment Engineering, University of Texas at Austin, Austin, TX, March 2.

15. W. Zuo 2014. "Modelica for building system design and operation", Lunch & Learn Seminar, Dassault Systemes Simulia Corp., Dearborn, MI, March 6.

14. W. Zuo 2013. "Recent breakthroughs in building simulations", Shenzhen Institutes of Advanced Technology, China Academy of Sciences, Shenzhen, China, June 6.

13. W. Zuo 2013. "Next generation building simulation tools based on Modelica and functional mockup interface", College of Automation, Chongqing University, Chongqing, China, May 16.

12. W. Zuo 2013. "Recent breakthroughs in building simulations", College of Urban Construction and Environmental Engineering, Chongqing University, Chongqing, China, May 15.

11. W. Zuo 2013. "Recent breakthroughs in building simulations", Department of Automation, Xiamen University, Xiamen, China, May 13.

10. W. Zuo 2012. "Building systems for net zero energy buildings", Department of Civil & Architecture Engineering, University of Miami, Miami, FL, September 10.

9. W. Zuo 2012. "Put the pedal to the metal: how you can speed up your simulation," the 5th National Conference of International Building Performance Simulation Association -USA (SimBuild2012), Madison, WI, August 3.

8. W. Zuo 2012. "Innovations in simulation research for low energy and healthy buildings," School of Architectural Engineering and Construction, University of Nebraska, Lincoln, April 4.

7. W. Zuo 2012. "Innovations in Simulation Research for Low Energy and Healthy Buildings," Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, March 12.

6. W. Zuo 2011. "Simulation research for net zero energy buildings," Department of Civil & Architecture Engineering, University of Miami, Miami, FL, March 11.

5. W. Zuo 2011. "Towards to net zero energy buildings – innovations in building simulations," United Technologies Research Center, East Hartford, CT, February 11.

4. W. Zuo 2010. "Towards to net zero energy buildings – innovations in building simulations," MAE/EQS STAR Center Seminar, Department of Mechanical and Aerospace Engineering, Syracuse University, Syracuse, NY, November 19.

3. W. Zuo 2009. "Advanced simulations of air distributions in buildings," ExxonMobile Upstream Research Company, Houston, TX, December 1.

2. W. Zuo 2009. "Advanced simulations of air distributions in buildings", Department of Civil, Architectural, and Environmental Engineering, Drexel University, Philadelphia, PA, March 11.

1. W. Zuo 2005. "The implementation and verification of the anisotropy invariant Reynolds stress turbulence model," Institute of Aerodynamics and Gas Dynamics, University of Stuttgart, Germany.

Guest Lectures

11. W. Zuo 2017. "Innovations in Modeling and Simulation: From Sustainable Buildings to Smart Cities", Guest Lecture for Department of Industrial Engineering, University of Miami, Coral Gables, FL, March 8.

10. W. Zuo 2017. "Overview of HVAC System", Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, CO, February, 16.

9. W. Zuo 2017. "Equation-based modeling and simulation: the next generation technology for sustainable buildings and cities", Graduate Seminar at Department of Mechanical and Materials Engineering, Florida International University, Miami, FL, January 20.

8. W. Zuo 2016. "Research in Sustainable and Smart Cities", Guest Lecture at School of Architecture, University of Miami, Coral Gables, FL, September 23.

7. W. Zuo 2016. "Model-based optimization for building energy efficiency", Lingyun Lecture Series, School of Aerospace Engineering, Xiamen University, Xiamen, China, June 2.

6. W. Zuo 2016. "Model-based optimization for building energy efficiency", International Lecture for Sustainable Building and Environment, No. 121, College of Urban Construction and Environmental Engineering, Chongqing University, Chongqing, China, May 27.

5. W. Zuo 2016. "Model-based optimization for building energy efficiency", Hongyi Lecture, No. 343, Chongqing University of Technology, Chongqing, China, May 23.

4. W. Zuo 2015. "Innovations in modeling and simulations for sustainable buildings", Graduate Seminars Series, Mechanical Engineering - Engineering Mechanics Department at Michigan Technological University, Houghton, MI, September 3.

3. W. Zuo 2015. "Equation-based modeling and simulations for sustainable buildings", Guest Lecture for Department of Industrial Engineering, University of Miami, Coral Gables, FL, April 1.

2. W. Zuo 2012. "Indoor airflow simulation", School of Architectural Engineering and Construction, University of Nebraska, Lincoln, NE.

1. W. Zuo 2012. "Physics of turbulence and turbulence modeling", Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, CO.

Project Report

3. W. Zuo, Y. Fu, Y. Ye, I. R. Stahl 2017, "Smart Infrastructure and Renewable Energy: Study on ZenCity", project report for the ZenCity project.

2. S. Huang, W. Zuo 2015. "The impact of the condenser water set point optimization frequency on the energy saving", Report for Lawrence Berkeley National Laboratory.

1. M. Wetter, X. Pang, W. Zuo, T. Nouidui, K, Phalak 2013. "Enabling Tools for Design of Energy Efficient Building Systems", Report for California Energy Commission, CEC-500-2014-055.

Other Major Publications/Presentations

39. W. Zuo, Y. Fu, Y. Ye, I. R. Stahl 2017, "Smart Infrastructure and Renewable Energy", Presentation at the Zenciti Workshop: Designing a smart city in Yucatán, Miami, FL, February 24.

38. W. Zuo 2016. "Advanced modeling tools for energy efficient data center cooling", Webinar for ASHRAE TC 9.9 Data Center Energy Calculation Work Group, December 3.

37. W. Zuo 2016. "From buildings to cities: research and development of Modelica-based technique for real-world applications", Seminar at Energy Technologies Area (ETA), Lawrence Berkeley National Laboratory, Berkeley, CA, November 14.

36. W. Zuo, 2016. "Equation-based modeling and simulation for sustainable buildings", Presentation at Taco Comfort Solutions, Cranston, Rhode Island, October 26,

35. D. He, S. Huang, W. Zuo, Y. Fu, D.P. Peterson, R. Kaiser 2016. "Modelica-based modeling for net zero energy communities", North America Modelica Users' Group Conference, Troy, MI, September 28-29.

34. W. Zuo, R. Kaiser, S. Welty 2016. "Envisioning a 21st century renewable, reliable, resilient, and affordable energy infrastructure for Cuba", Association for the Study of the Cuban Economy 2016 Annual Meeting, July 28-30.

33. W. Zuo 2016. "Innovations in modeling and simulations for sustainable buildings", Seminar at Argonne National Laboratory, Chicago, IL, June 23.

32. R. J. Miranda, S. Huang, W. Zuo 2016. "Designing an energy and water efficient hotel using an equation-based modeling approach", Seminar 67 on Simulation for Cutting-Edge Building Design, ASHRAE Winter Meeting, Orlando, FL, January 27.

31. W. Zuo 2016. "A fast coupled simulation of 3D indoor airflow motion and HVAC system for ventilation control of complex environment", Seminar 11 on New CFD Techniques for Design of Air Distribution Systems, ASHRAE Winter Meeting, Orlando, FL, January 24.

30. W. Zuo 2015. "Coupling indoor airflow, HVAC, control and building envelope heat transfer in the Modelica Buildings library", Joint Workshop of IEA Annex 60 and IBPSA-NVL, Leuven, Belgium, September 18.

29. W. Zuo 2015. "Innovations in modeling and simulations for sustainable buildings", Seminar at Oak Ridge National Laboratory, Oak Ridge, TN, July 2.

28. W. Zuo 2015. "Modelica-based model predictive control of a chilled water plant", Seminar 48 on Model Predictive Control: Application to Chilled Water Plants and Radiant Slab Cooling, ASHRAE Annual Meeting, Atlanta, GA, June 30.

27. W. Zuo 2015. "Innovations in modeling and simulations for sustainable buildings", Seminar at Pacific Northwest National Laboratory, Richland, WA, April 17.

26. W. Zuo 2014. "Smart energy campus for the University of Miami", University of Miami, Coral Gables, December 15.

25. W. Zuo 2014. "Modelica for the controls design of energy efficient hotel", North America Modelica Users

Group Meeting, Atlanta, GA, October 13-14.

24. W. Zuo 2014, "Recent development and application of Modelica-based simulation for low energy buildings," Presentation at the Department of Energy, Washington DC, October 8.

23. W. Zuo 2014. "Next generation building simulation based on Modelica", Florida Solar Energy Center, Cocoa, FL, May 12.

22. W. Zuo, M. Wetter 2013. "Modeling of HVAC system for controls optimization using Modelica," Intelligent Building Operations Workshop, University of Colorado Boulder, Boulder, CO, June 20-22.

21. D. Kim, W. Zuo, J.E. Braun, M. Wetter 2013. "Comparisons of building system modeling approaches for control system design", Intelligent Building Operations Workshop, University of Colorado Boulder, Boulder, CO, June 20-22.

20. W. Zuo, M. Wetter 2013. "Optimization of chilled water plant control using Modelica," Modelica North America User Virtual Meeting, February 18.

19. W. Zuo, M. Wetter 2012. "Innovative computer tools for energy efficient cooling of data centers," Discovery 2015: HPC and Could Computing Workshop, Berkeley, CA.

18. W. Zuo, 2012. "Functional mockup interface – an open-source standard for co-simulation and model exchange," Seminar 53 on Integrated Multi-Domain Simulations for Innovative Building Design and Operation: Part 2, ASHRAE Winter Conference, Chicago, IL.

17. W. Zuo, M. Wetter 2011. "Building systems for net zero energy buildings," Carbon Cycle 2.0 LDRD Seminar Series, Lawrence Berkeley National Laboratory, Berkeley, CA.

16. W. Zuo, 2011. "Evaluation and optimization of control system for water side economizer", Seminar 20 on Operation-oriented Flexible Building System Modeling, ASHRAE Annual Meeting, Montreal, Canada.

15. N. Keen, R. Gerber, W. Zuo 2011. "What is NERSC and how can their computer resources help you?" Seminar for Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

14. M. Wetter, W. Zuo 2011. "Challenges and numerical consideration in building energy modeling," Seminar MS40 on Dynamical System Methods for Design and Operation of Sustainable Buildings – Part I of II, Society of Industrial and Applied Mathematics Conference on Application of Dynamical Systems, Snow Bird, UT.

13. W. Zuo 2011. "Simulation research for low energy buildings," Seminar for Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

12. W. Zuo 2010. "High performance flow simulation on graphics processing unit," Seminar for Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, Berkeley, CA.

11. W. Zuo, Q. Chen 2010. "Fast predictions of particles with small Stokes number in a ventilated room," Seminar 38 on Modeling of Particle Transport in Indoor Environment for Air Quality Analyses, ASHRAE Winter Conference, Orlando, FL.

10. W. Zuo, Q. Chen 2009. "High performance, low-cost indoor airflow simulation on graphics hardware", Research in Engineered Environments Seminar Series, West Lafayette, IN.

9. W. Zuo, T. Zhang, K. Lee, Q. Chen 2009. "A simplified approach to describe complex diffusers in displacement ventilation for CFD simulations," Seminar 35 on Modeling Technique for Personal Ventilation, ASHRAE Annual Meeting, Louisville, KY.

8. W. Zuo, Q. Chen 2009. "Real time simulation for airflow motion and contaminant transportation in buildings," Seminar 15 on CFD Simulations of Air Distributions in Buildings: Past, Present and Future, ASHRAE Winter Conference, Chicago, IL.

7. W. Zuo, Q. Chen 2008. "Real-time airflow simulation in buildings by using graphic process units," Abstracts of the 1st International Conference on Building Energy and Environment (COBEE), Dalian, China.

6. W. Zuo, Q. Chen 2007. "Fast fluid dynamics for applications in building environment," Thermal System Seminar Series, Purdue University, West Lafayette, IN.

5. W. Zuo, Q. Chen, X. Yuan, L. Glicksman 2007. "Displacement ventilation system modeling," Seminar 19 on Modeling Stratified Room Air Distribution with Energy Simulation Tools, ASHRAE Annual Meeting,

Long Beach, CA.

4. V. Kumar, J. Jovanovic, M. Breuer, W. Zuo, F. Durst 2005. "Anisotropy invariant Reynolds stress model (AIRSM) and its applications to separated flows," des Kompetenznetzwerk fuer Technisch-Wissenschaftliches Hoch- und Hoehstleistungsrechnen in Bayern (KONWIHR) Quartl, Vol. 40, pp. 12-16.

3. W. Zuo 2005. "The implementation and verification of the anisotropy invariant Reynolds stress turbulence model," Research Colloquium of German Aerospace Center, Göttingen, Germany.

2. W. Zuo 2005. "Introduction to CFD," Joined Advanced Student School, St. Petersburg, Russia.

1. W. Zuo 2004. "Physics of turbulence and turbulence modeling," Summer Academy, Sarntal, Italy.

Contribution to Software Development
- Modelica *Buildings* library, publically released at http://simulationresearch.lbl.gov/modelica
- Fast Fluid Dynamics for indoor environment simulation (publically released as a part of Modelica *Buildings* library)

International Research Collaboration

	Project Title	Organizer	Participating Countries
3.	IBPSA Project 1 "BIM/GIS and Modelica Framework for building and community energy system design and operation"	IBPSA	11
2.	Annex 66 "Definition and Simulation of Occupant Behavior in Buildings" (2013-2017)	International Energy Agency	24
1.	Annex 60 "New generation computational tools for building and community energy systems based on the Modelica and Functional Mockup Interface standards" (2012-2017)	International Energy Agency	16

Awards
- Distinguished Service Award, ASHRAE, 2017.
- Eliahu I. Jury Early Career Research Award, College of Engineering, University of Miami, 2016.
- SEEDS You Choose Leadership Award, University of Miami, 2016.
- Emerging Professional Award in recognition of superior early achievement in the field of energy modeling, IBPSA-USA, 2016.
- SEEDS You Choose Leadership Award, University of Miami, 2015.
- SEEDS You Choose Leadership Award, University of Miami, 2014.
- Provost Research Award, University of Miami, 2014.
- SEEDS You Choose Leadership Award, University of Miami, 2013.
- Best Poster Award, The 1st OMEGA Annual Research Exhibition, Purdue University, 2010.
- ASHRAE Graduate Student Grant-In-Aid Award 2009-10, 2009
- Best Poster Award, IBPSA-USA Winter Meeting, Chicago, IL, 2009
- The 3rd Place in Poster Competition, The 3rd National Conference of IBPSA-USA (SimBuild 2008), Berkeley, CA, 2008
- Student Scholarship, The 3rd National Conference of IBPSA-USA (SimBuild 2008), Berkeley, CA, 2008
- Graduate School Incentive Grant, Purdue University, 2008
- Scholarship for attending U.S. Foreign Policy Colloquium, 2007
- Travel Award for Doctoral Student, School of Mechanical Engineering, 2007
- Siemens Scholarship, Siemens AG, Germany, 2004

Departmental and University Committees, Services, etc.

Activities	Function	Beginning	Ending
ASHRAE University of Miami Student Branch	Faculty Advisor	02/2017	-
College of Engineering Strategic Plan Implementation Work Group 1: Excellence in Research	Member	09/2016	10/2016
Student Recruitment and Retention for CAE department	Responsible Faculty	05/2016	-
College of Engineering Roadmap initiative: Working Group 2 Problem-Based Interdisciplinary Collaboration	Member	02/2016	03/2016
University of Miami Team for "2016 U.S. Department of Energy Race to Zero Student Design Competition"	Faculty Advisor	09/2015	04/2016
Search Committee for Dean of College of Engineering, University of Miami	Member	09/2014	07/2015
University of Miami Student Team for "2014 Atlantic Coast Conference Clean Energy Challenge"	Faculty Advisor	10/2013	03/2014
Scientist Search Committee of Environment Energy Technology Division, Lawrence Berkeley National Laboratory	Chair	02/2012	05/2012
Mentoring Program of Environment Energy Technology Division, Lawrence Berkeley National Laboratory	Mentor	01/2012	06/2012

Professional Committees & Services

Journal	Function	Beginning	Ending
Sustainable Buildings	Associate Editor	2015	-

Peer Reviewers
Journals:
1. Annals of Occupational Hygiene
2. Applied Energy
3. ASHRAE Transactions
4. ASME Journal of Energy Resources Technology
5. Building and Environment
6. Building Simulation
7. Energy and Buildings
8. Engineering Applications of Computational Fluid Mechanics
9. HVAC&R Research
10. Indoor and Built Environment
11. International Journal for Numerical Methods in Fluids
12. Journal of Architectural Engineering
13. Journal of Building Performance Simulation
14. Numerical Methods in Fluids
15. Simulation Modelling Practice and Theory
16. Solar Energy
17. Sustainable Buildings

Conferences
1. The 15th International Conference of IBPSA (Building Simulation 2017), San Francisco, CA, 2017.
2. ASHRAE 2017 Winter Conference, Las Vegas, NV, 2017
3. The ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference, Salt Lake City, UT, 2016.
4. The 14th International Conference of IBPSA (Building Simulation 2015), Hyderabad, India, 2015.
5. ASME 2015 International Mechanical Engineering Congress & Exposition (IMECE), Houston, TX, 2015.
6. ASME 2015 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK2015), San Francisco, CA, 2015
7. The 1st International Conference of the CIB Middle East & North Africa Research Network (CIB-MENA 2014), Abu Dhabi, UAE , 2014.
8. The 2014 ASHRAE/IBPSA-USA Building Simulation Conference, Atlanta, GA, 2014.
9. The 13th International Conference of IBPSA (Building Simulation 2013), Chambery, France, 2013.
10. The 5th National Conference of IBPSA-USA (SimBuild 2012), Madison, WI, 2012.
11. The 2nd International Conference on Building Energy and Environment (COBEE2012), Boulder, Colorado, 2012.
12. The 12th International Conference of IBPSA (Building Simulation 2011), Sydney, Australia, 2011.
13. The 5th International Conference on Energy Sustainability (EsFuelCell2011), Washington D.C., 2011.
14. ASHRAE 2011 Winter Conference, Las Vegas, NV, 2011.
15. The 4th National Conference of IBPSA-USA (SimBuild 2010), New York, NY, 2010.
16. The 6th International Symposium on Heating, Ventilating and Air Conditioning, Nanjing, China, 2009.

Proposals Review
1. National Endowment for the Humanities, 2016
2. University of Miami, 2016
3. Swiss National Science Foundation, 2016
4. U.S. National Science Foundation, 2016
5. ASHRAE, 2015.
6. Swiss National Science Foundation, 2013
7. U.S. Department of Energy, 2013.
8. ASHRAE, 2011.

Conference	*Function*	*Date*
The 15th International Conference of IBPSA (Building Simulation 2017), San Francisco, CA	Executive Scientific Committee Member	Aug. 7-10, 2017
ASHRAE 2017 Annual Conference, Long Beach, CA	Session Chair	Jun. 24-28, 2017
2017 Joint PI Meeting: NSF BIGDATA and Big Data Hubs & Spokes, Washington DC	Breakout Session Chair	Mar. 15-16, 2017
ASHRAE 2017 Winter Conference, Chicago, IL	Session Chair	Jan. 28-Feb.1, 2017
2016 International Conference on Building Materials and Civil Engineering, Wuhan, China	Technical Program Committee Member	Dec. 10-11, 2016
The ASHRAE and IBPSA-USA SimBuild 2016: Building Performance Modeling Conference, Salt Lake City, UT	Session Chair	Aug. 10-12, 2016

ASHRAE 2016 Annual Conference, St Louis, MO	Session Chair	Jun. 25-29, 2016
International Energy Agency Annex 60 "New generation computational tools for building and community energy systems based on the Modelica and Functional Mockup Interface standards" Expert Meeting, Coral Gables, FL	Organization Committee Chair	May 9-11, 2016
Healthy Buildings 2015 America, Boulder, CO	Scientific Committee Member	Jul. 19-22, 2015
The 3rd International Conference on Building Energy and Environment (COBEE) and the 9th ISHVAC (the International Symposium on Heating, Ventilation and Air Conditioning), Tianjin, China	International Scientific Committee Member	Jul.12-15, 2015
ASHRAE 2015 Annual Conference, Atlanta, GA	Session Chair	Jun. 27-Jul. 1, 2015
ASHRAE 2015 Winter Conference, Chicago, IL	Session Chair	Jan. 24-28, 2015
The 1st International Conference of the CIB Middle East & North Africa Research Network (CIB-MENA 2014), Abu Dhabi, UAE	International Scientific Committee Member	Dec. 14-16, 2014
ASHRAE 2014 Annual Conference, Seattle, WA	Session Chair	Jun. 28-Jul. 2, 2014
ASHRAE 2014 Winter Conference, New York City, NY	Session Chair	Jan. 18-22, 2014
Building Simulation 2013, Chambery, France	Session Chair	Aug. 25-28, 2013
ASHRAE 2013 Winter Conference, Dallas, TX	Session Chair	Jan. 26-30, 2013
The 2nd International Conference on Building Energy and Environment (COBEE2012), Boulder, CO.	International Scientific Committee Member	Aug. 1-4, 2012
ASHRAE 2012 Winter Conference, Chicago, IL	Session Chair	Jan. 21-25, 2012
ASHRAE 2011 Annual Conference, Montreal, Canada	Session Chair	June 25-29, 2011
ASHRAE 2011 Winter Conference, Las Vegas, NV	Session Chair	Jan. 29-Feb. 22, 2011
The 4th National Conference of IBPSA-USA (SimBuild2010), New York, NY	Session Chair	Aug. 11-13, 2010
The 19th International Compressor Engineering Conference, West Lafayette, IN	Session Vice-chair	July 14-17, 2008

The 12th International Refrigeration and Air Conditioning Conference, West Lafayette, IN	Session Vice-chair	July 14-17, 2008	

Professional Services	*Function*	*Beginning*	*Ending*
International Building Performance Simulation Association (IBPSA)	Treasurer	2016	-
International Building Performance Simulation Association (IBPSA)	Affiliate Director Representing USA on the Board of IBPSA	2016	2018
ASHRAE TC 4.10 Indoor Environment Modeling	Secretary	2015	-
ASHRAE TC 7.4 Exergy Analysis for Sustainable Buildings	Secretary, Voting Member	2015	-
International Building Performance Simulation Association – USA Chapter	Research Committee Chair	2014	-
ASHRAE TC 1.5 Computer Applications, TC 6.1 Hydronic and Steam Equipment and Systems, TC 6.2 District Energy, TC 7.4 Exergy Analysis for Sustainable Buildings, TC 9.6 Health Care Facilities, TC 9.9 Mission Critical Facilities	Corresponding Member	2014	-
ASHRAE TC 4.10 Indoor Environment Modeling	Research Subcommittee Chair	2013	2015
ASHRAE TC 4.10 Indoor Environment Modeling	Voting Member	2013	2016
ASHRAE TC 4.7 Energy Calculation	Voting Member	2013	2017
ASHRAE TC 7.5 Smart Building System	Corresponding Member	2012	-
ASHRAE TC 1.4 Control theory and Application, TC 4.7 Energy Calculation, TC 4.10 Indoor Environment Modeling	Corresponding Member	2010	-
ASHRAE Student Congress	Representative	2009	2009

Professional Membership
- Member of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), since 2007
- Member of IBPSA (International Building Performance Simulation Association), since 2008

Ph.D. Theses Supervised
Student	*Title of Thesis*	*Completion Date*
Xu Han	Model based optimization for data center cooling	12/2020 Expected
Xing Lu	Modeling and optimization of smart cities	12/2020 Expected

Danlin Hou	Modeling of smart and connected communities	12/2020 Expected
Jing Wang	Advanced modeling for resilient city	12/2020 Expected
Thomas Alonso Sevilla	Building to grid integration	12/2020 Expected
Yunyang Ye	Large scale building energy modeling and analysis for building energy rating program	08/2019 Expected
Yangyang Fu	Model based optimization for advanced building control	08/2019 Expected
Reymundo J. Miranda	Equation based modeling for hybrid systems in buildings	12/2017 Expected
Wei Tian	Coupled simulation of indoor airflow, HVAC, control, and building envelope *First employer after graduation: Schneider Electric*	07/2017
Sen Huang	Model based technologies for enhancing building operation *First employer after graduation: Pacific Northwest National Laboratory*	04/2016

Internal Examiner of Ph.D. Theses

8. Omar Aloui, Department of Civil, Architectural and Environmental Engineering, University of Miami.
7. Yunchao Yang, "High fidelity turbulence simulations and investigations of airfoil active flow control", Department of Mechanical and Aerospace Engineering, University of Miami.
6. Mahamalage Kusumitha Perera, Department of Civil, Architectural and Environmental Engineering, University of Miami.
5. Koosha Kiamehr, "Energy Efficiency Improvement of VFD-motor-pump/fan Systems", Department of Civil, Architectural and Environmental Engineering, University of Miami.
4. Jiaye Gan, 2016, "High fidelity simulation of fluid-structure interaction in transonic and supersonic flow", Department of Mechanical and Aerospace Engineering, University of Miami.
3. Kaustubh Phalak, 2016, "Control methods to improve non-linear HVAC system operations", Department of Civil, Architectural and Environmental Engineering, University of Miami.
2. Esber Andiroglu, 2015, "Development of a virtual air / water flow meter using fan / pump head and motor power", Department of Civil, Architectural and Environmental Engineering, University of Miami.
1. Song Luo, 2014, "Lateral current distribution in proton exchange membrane fuel cells with interdigitated flow field", Department of Mechanical and Aerospace Engineering, University of Miami.

External Examiner of Ph.D. Theses

1. Donghun Kim, 2015, "Development and application of models and algorithms for model-predictive control in buildings", School of Mechanical Engineering, Purdue University.

Master Students (Non-Thesis) Supervised

2. Bernardo Samuel Benzecry, 2016, Department of Civil, Architectural and Environmental Engineering, University of Miami.
1. Raul Andres Velarde, 2015, Department of Civil, Architectural and Environmental Engineering, University of Miami.

Internal Examiner of Master Theses

2. Ezgi Ozcoban, 2017, "Comparison of reinforced concrete bridge and fiber reinforced polymer bridge using life cycle assessment", Department of Civil, Architectural and Environmental Engineering, University of

Miami.
1. Billy Bartow, 2014, "Experimental investigations of base drag reduction using passive jet flow control", Department of Mechanical and Aerospace Engineering, University of Miami.

Hosted Visiting Scholars
8. Yihui Qiu, Associate Professor, Xiamen University of Technology, China, 04/2017-10/2017.
7. Qiujian Wang, Ph.D. Student, Tongji University, China, 03/2017-11/2017.
6. Guang Zhou, Ph.D. Student, Guangzhou University, China, 11/2016-10/2017.
5. Dong He, Ph.D. Student, Chongqing University, China, 09/2015-09/2016.
4. Guifang Shao, Associate Professor, Xiamen University, China, 08/2014-07/2015.
3. Tiejun Li, Ph.D. Student, Chongqing University, China, 08/2014-07/2015.
2. Dongbo Pan, Associate Professor, Southwest University, China, 08/2014-07/2015.
1. Changjiang Jiang, Associate Professor, Chongqing University of Posts and Telecommunications, China, 08/2014-07/2015.

Supervised Undergraduate / Master Students for Research
18. Daniel Jacques, B.S. in Mechanical Engineering, University of Maryland, Baltimore County, 2017-Present.
17. Hiba Benkhye, B.S. in Mechanical Engineering, University of Miami, 2017-Present.
16. Sophia Delgado, B.S. in Industrial Engineering, University of Miami, 2017-Present.
15. Isabella Stahl, B.S. in Architectural Engineering, University of Miami, 2017.
14. Alex David Plumb, B.S. in Architectural Engineering, University of Miami, 2017-Present.
13. Clay Wyda, B.S. in Environmental Engineering, University of Miami, 2016-2017.
12. Isabella Goltz Ver, B.S. in Chemical Engineering, Rural Federal University of Rio de Janeiro, 2016.
11. Drake Peterson, B.S. in Architectural Engineering, University of Miami, 2016-2017.
10. Robert Foster, B.S. in Aerospace Engineering, University of Miami, 2015.
9. Lonching Eng, B.S. in Electric Engineering, University of Miami, 2015-2016
8. Bernardo Samuel Benzecry, M.S. in Architectural Engineering, University of Miami, 2015-2016.
7. Ana Carolina Laurini Malara, B.S. in Civil Engineering, University of Sao Paulo, 2014-2016.
6. Thomas Sevilla, B.S. in Electric Engineering, University of Miami, 2014-2016.
5. German Augusto Barrios, B.S. in Electric Engineering, University of Miami, 2014-2015.
4. Mary Semaan, M.S. in Environmental Engineering, University of Miami, 2014.
3. Christina Marie Thomas, B.S. in Electric Engineering, University of Miami, 2014.
2. Dan Li, B.S. in Physics and Mathematics, University of Miami, 2013-2015.
1. Ana C. Cohen Mobily-Guitta, B.S. in Architectural Engineering, University of Miami, 2013-2014.

Awards Received by Zuo's Students
15. Wei Tian, 2017, Outstanding Graduate Award, Department of Civil, Architecture and Environmental Engineering, University of Miami.
14. Wei Tian, 2017, Grant-in-Aid Award, $10,000, ASHRAE.
13. Yunyang Ye, 2017, Outstanding Service Award, ASHRAE University of Miami Chapter.
12. Wei Tian, 2017, Outstanding PhD Research Award, College of Engineering, University of Miami.
11. Ana Carolina Laurini Malara, 2016, travel scholarship for the Summer Camp at Brazilian National Institute of Pure and Applied Mathematics, Rio de Janeiro, Brazil.
10. Sen Huang, 2016, IBPSA-USA travel scholarship for attending the ASHRAE and IBPSA-USA SimBuild 2016 Conference in Salt Lake City, UT.
9. Thomas Sevilla, 2016. Tuition Scholarship, Department of Civil, Architecture and Environmental Engineering, University of Miami, Coral Gables.
8. Sen Huang, 2014. NSF Travel Award for attending the Symposium on Building Energy Uncertainty and Risk Analysis at the Georgia Tech.
7. Wei Tian, 2014. NSF Travel Award for attending the Symposium on Building Energy Uncertainty and Risk Analysis at the Georgia Tech.
6. Sen Huang, 2014. ASHRAE/IBPSA-USA student travel scholarship for attending the ASHRAE/IBPSA-

USA Building Simulation Conference in Atlanta, Georgia.

5. Wei Tian, 2014. ASHRAE/IBPSA-USA student travel scholarship for attending the ASHRAE/IBPSA-USA Building Simulation Conference in Atlanta, Georgia.

4. Dan Li, 2014. "Honors Summer Research Program", University of Miami.

3. Dan Li, 2014. "Beyond the Book" summer award for research-based learning, College of Arts and Science, University of Miami.

2. Dan Li, Reymundo J. Miranda, 2014. "Semifinalist team" representing the University of Miami in the "Atlantic Coast Conference Clean Energy Challenge" at the University of Maryland, College Park, MD.

1. Reymundo J. Miranda, 2013. Tuition Scholarship, Department of Civil, Architecture and Environmental Engineering, University of Miami.