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EDUCATION:

Ph.D. Mechanical Engineering, University of California, Berkeley 1993
Thesis advisors: Drs. Hashem Akbari, Van P. Carey (chair), Art Rosenfeld
Dissertation: "Role of Surface Characteristics in Urban Meteorology and Air Quality"
M.S. Mechanical Engineering, University of California, Berkeley 1990
B.S. Mechanical Engineering, University of Washington, Seattle 1988

POSITIONS HELD:

Director, Green Building Research Laboratory (GBRL) at Portland State University (2009-present).
Professor (2008-present), Dept. of Mechanical Engineering Portland State University
Associate Professor (2003-2008), Dept. of Mechanical Engineering Portland State University
Associate Professor (1999-2003), Dept. of Mechanical Engineering, Tulane University
Assistant Professor (1993-1999), Dept. of Mechanical Engineering, Tulane University
Director South Central Regional Center of the National Institute for Global Environmental Change, at Tulane University (April 1999-Dec. 2002). Responsible for combined research and administrative budget of approximately \$1.2M per year. Supervised one administrative assistant.

RESEARCH INTERESTS:

Interactions Between Energy Systems and Climate – investigation of feedback mechanisms between energy systems and climate with a focus on building energy consumption and renewable energy resources.

Building Energy Efficiency – development and testing of green building technologies and strategies with a focus on building envelope for new and retrofit applications in both commercial and residential building stock.

Regional Atmospheric Modeling – development of modeling tools to generate higher accuracy and higher resolution weather/climate projections. Application areas include short-term energy load forecasting and long-term climate change scenarios for temperatures, precipitation, and wind fields.

Urban Heat Island Studies- field measurements and regional scale (mesoscale) atmospheric model enhancement for studying causes, effects, and potential for mitigation of urban heat islands.

PUBLICATIONS IN REVIEW OR PREPARATION:

Gibson, M. and **D.J. Sailor**, "Corrections to the mathematical formulation of a backwards Lagrangian particle dispersion model," submitted to Boundary-Layer Meteorology, Nov. 2011.

Norvell, C., Dusicka, P., and **D.J. Sailor**. "The effect of microencapsulated phase-change material on the strength of structural concrete. To be submitted (~Feb, 2012).

- Smith, M.K., C.C. Wamser, **D.J. Sailor**, K. James, and S. Moody, "Observed effects of natural particulate accumulation on photovoltaic modules in Portland, OR," in preparation.
- Sailor, D.J.**, "Energy Buildings and the Urban Environment", a book chapter to be included in Climate Vulnerability, Edited by R. Pielke, Sr., Elsevier. To be published, 2013.

PEER-REVIEWED PUBLICATIONS:

59. Campbell, K.R., and **Sailor, D.J.**, "Phase change materials as thermal storage for high performance homes," proceedings (peer reviewed) of the 2011 ASME International Mechanical Engineering Congress & Exposition, IMECE 2011, Nov. 11-17, Denver.
58. **Sailor, D.J.**, Elley, T.B., Gibson, M., 2011. "Modeling the energy performance of green roof design decisions – a study of buildings in 4 U.S. cities," published on-line Sept 13, 2011, *J. Building Physics*, DOI: 10.1177/1744259111420076.
57. Scherba, A., **D.J. Sailor**, T.N. Rosenstiel, and C.C. Wamser, 2011. "Modeling impacts of roof reflectivity, integrated photovoltaic panels and green roof systems on sensible heat flux into the urban environment", *Building and Environment*, 46, 2542-2551, DOI: 10.1016/j.buildenv.2011.06.012.
56. **Sailor, D.J.** and M. Hagos, 2011. "An updated and expanded set of thermal property data for green roof growing media," *Energy and Buildings*. **43**, 2298-2303.
55. C.S.B. Grimmond, M. Roth, T.R. Oke, Y.C. Au, M. Best, R. Betts, G. Carmichael, H. Cleugh, W. Dabberdt, R. Emmanuel, E. Freitas, K. Fortuniak, S. Hanna, P. Klein, L.S. Kalkstein, C.H. Liu, A. Nickson, D. Pearlmutter, **D. Sailor**, J. Voogt, 2010. "Climate and More Sustainable Cities: Climate Information for Improved Planning and Management of Cities (Producers/Capabilities Perspective)," *Procedia Environmental Sciences*, (Elsevier) **1**, 247-274.
54. Taha, H., and **Sailor, D.J.**, 2010. "Evaluating the effects of radiative forcing feedback in modeling urban ozone air quality in Portland, Oregon: Two-way coupled MM5 – CMAQ simulations", *Boundary Layer Meteorology* 137 (2), 291-305. DOI 10.1007/s10546-010-9533-9.
53. Chen, F. Kusaka, H., Bornstein, R., Ching, J., Grimmond, C.S.B., Grossman-Clarke, S., Loridan, T., Manning, K.W., Martilli, A., Miao, S., **Sailor, D.**, Salamanca, F.P., Taha, H., Tewari, M., Wang, X., Wyszogrodzki, A.A., Zhang, C., 2010. "The integrated WRF/urban modeling system: development, evaluation, and applications to urban environmental problems", *International Journal of Climatology*, **31**: 273-288.
52. **Sailor, D.J.**, 2010. "A Review of Methods for Estimating Anthropogenic Heat and Moisture Emissions in the Urban Environment", *International Journal of Climatology*, **31** (2), 189-199.
51. Klotz, L., Loftness, V., Henze, G., **Sailor, D.**, and Riley, D., 2009. "Technical Research Needs for Sustainable Buildings: Results from a Multidisciplinary NSF Workshop". *Journal of Green Building*, 4 (4), 101-112.
50. Ching, J., Brown, M., Burian, S., Chen, F., Cionco, R., Hanna, A., Hultgren, T., **Sailor, D.**, Taha, H., and Williams, D., 2009. "National Urban Database and Access Portal Tool (NUDAPT): Facilitating a new generation of advanced urban meteorology and climate modeling with community-based urban database system," *Bulletin of the American Meteorological Society* (BAMS), August.
49. Semenza, J.C., Hall D., Wilson D., Bontempo, B., **Sailor, D.** and George, L.A., 2008. "Public Perception of Climate Change: Voluntary Mitigation and Barriers to Behavior Change," *American Journal of Preventive Medicine*, **35**, (5), 479-487.
48. Semenza, J.C., Wilson, D.J., Parra, J., Bontempo, B., Hart, M., **Sailor, D.J.**, and George, L.A., 2008. "Public perception and behaviour change in relationship to hot weather and air pollution", *Environmental Research*, 107 (3), 401-411.

47. Pullen, J., Ching, J., **Sailor, D.** Thompson, W., Bornstein, B. and Koracin, D., “Progress toward the challenges of our coastal urban future”, *Bulletin of the American Meteorological Society (BAMS)*, November 2008.
46. **Sailor, D.J.**, 2008. “A Green Roof Model for Building Energy Simulation Programs”, *Energy and Buildings* **40** (8), 1466-1478.
45. Hart, M., and **Sailor, D.J.**, 2008. “Quantifying the influence of land-use and surface characteristics on spatial variability in the urban heat island,” 10.1007/s00704-008-0017-5, *J. Theor. Appl. Clim.*, 95, 397-406.
44. Heiple, S., and **Sailor, D.J.**, 2008. “Using Building Energy Simulation and Geospatial Modeling Techniques to Determine High Resolution Building Sector Energy Consumption Profiles,” *Energy and Buildings*, **40** (8), 1426-1436.
43. **Sailor, D.J.**, M. Smith*, and Hart, M., 2008. “Climate change implications for wind power resources in the Northwest United States,” *Renewable Energy*, **33** (11), 2393-2406.
42. **Sailor, D.J.**, Hutchinson*, D., and Bokovoy, L., 2008. “Thermal Property Measurements for Ecoroof Soils Common in the Western U.S.,” *Energy and Buildings*, **40** (7), 1246-1251.
41. **Sailor, D.J.** and Dietsch, N., 2007 “The urban heat island mitigation impact screening tool (MIST)”, *Environmental Modelling and Software*, **22**, 1529-1541.
40. **Sailor, D.J.**, 2007. “Green Roof Module for the EnergyPlus Energy Simulation Software,” US Department of Energy, www.eere.energy.gov/buildings/energyplus. *EnergyPlus Engineering Reference*, pp. 75-85, and *EnergyPlus Input Output Reference*, pp. 112-116, April 9, 2007
39. IPCC, 2007. Working Group II, Climate Change Impacts, Adaptation, and Vulnerability, Fourth Assessment Report, Chapter 14: North America, Intergovernmental Panel on Climate Change, Coordinating Lead Authors: C. B. Field (USA), L. D. Mortsch (Canada); Lead Authors: M. Brklacich (Canada), D. Forbes (Canada), P. Kovacs (Canada), J. Patz (USA), S. Running (USA), M. Scott (USA); Contributing Authors: J. Andrey (Canada), A. Hamlet, (USA), E. Mills (USA), S. Mills (USA), **D.J. Sailor** (USA), D. Scott (Canada), W. Solecki (USA), 88pp.
38. **Sailor, D.J.**, 2006. MIST – A web-based urban heat island mitigation impact screening tool. URL: www.heatislandmitigationtool.com, development supported by US EPA (external review conducted by PQA LLC for EPA).
37. **Sailor, D.J.**, and Vasireddy, C., 2006, “Correcting aggregate energy consumption data to account for variability in local weather,” *Environmental Modelling and Software*, **21**(5), 733-738.
36. **Sailor, D.J.**, K. Resh*, and Segura, D., 2006. “Field Measurement of Albedo for Limited Extent Test Surfaces,” *Solar Energy*, **80** (5), 589-599.
35. Fan, H., and **Sailor, D.J.**, 2005, “Modeling the Impacts of Anthropogenic Heating on the Urban Climate of Philadelphia: A comparison of implementations in two PBL schemes,” *Atmospheric Environment*, 39 (1), 73-84.
34. **Sailor, D.J.**, and Lu, L., 2004. “A Top-Down Methodology for Developing Diurnal and Seasonal Anthropogenic Heating Profiles for Urban Areas,” *Atmospheric Environment*, **38** (17), 2737-2748.
33. **Sailor, D.J.**, and Pavlova*, A., 2003. "Air Conditioning Market Saturation and Long Term Response of Residential Cooling Energy Demand to Climate Change ", *Energy – the International Journal*, **28** (9), 941-951.
32. **Sailor, D.J.**, and Fan, H., 2002. "Modeling the Diurnal Variability of Effective Albedo for Cities ", *Atmospheric Environment*, **36** (4), 713-725.
31. Breslow, P., and **Sailor, D.J.**, 2002. "Vulnerability of Wind Power Resources to Climate Change in the Continental United States", *Renewable Energy*, **27** (4), 585-598.
30. **Sailor, D.J.**, 2001. “Relating Residential and Commercial Sector Electricity Loads to Climate – evaluating state level sensitivities and vulnerabilities,” *Energy – the International Journal*, **26**, 645-657.
29. Li, X. and **Sailor, D.J.**, 2000. “Application of Tree-Structured Regression for Regional Precipitation Prediction Using General Circulation Model Output”, *Climate Research*, **16** (1), 17-30.

28. **Sailor, D.J.**, 2000. "Regional Climate Modeling for Climate Change Impact Assessment," *World Resource Review*, **12** (4) 669-684.
27. Gorsevski, V., Taha, H., and **Sailor D.J.**, 2000. "Energy, Economic, and Environmental Benefits of Heat Island Mitigation Measures," proceedings of the ACEEE 2000 Summer Study on Energy Efficiency in Buildings, August.
26. Ning, Z.H. and Abdollahi, K.K., 1999. Global Climate Change and its Consequences on the Gulf Coast Region of the United States, ISBN 1-930129-60-2, Lead contributors: **D.J. Sailor** (with others).
25. **Sailor, D.J.**, T. Hu, X. Li, and Rosen, J.N., 1999. "A Neural Network Approach to Local Downscaling of GCM Wind Statistics for Assessment of Wind Power Implications of Climate Variability and Climatic Change," *Renewable Energy*, **19**, 359-378.
24. **Sailor, D.J.**, D.J. Rohli, and Fu, Q., 1999. "Effect of variable Duty Cycle Flow Pulsations on Heat Transfer Enhancement for an Impinging Air Jet," *Int. J. Heat and Fluid Flow*, **20**, 574-580.
23. **Sailor, D.J.**, and Li, X., 1999. "Tree-Structured Regression Downscaling for Regional Climate Change Predictions of Precipitation," *World Resource Review*, **11**(1), 64-75.
22. **Sailor, D.J.**, and Li, X., 1999. "A Semi-Empirical Downscaling Approach for Predicting Regional Temperature Impacts Associated with Climatic Change," *Journal of Climate*, **12** (1), 103-114.
21. **Sailor, D.J.**, J. Rosen, and Muñoz, J.R., 1998. "Natural Gas Consumption and Climate: a Comprehensive set of Predictive State-Level Models for the United States," *Energy the International Journal*, **23** (2), 91-103.
20. Muñoz, J.R. and **Sailor, D.J.**, 1998. "A Modelling Methodology for Assessing the Impact of Climate Variability and Climatic Change on Hydroelectric Generation", *Energy Conversion and Management*, **39**, 1459-1469.
19. **Sailor, D.J.**, and Rosen, J.N., 1998. "Modeling Regional Climate Impacts of a Proposed Hydroelectric Project," Proceedings of the International Mechanical Engineering Congress and Exposition, Anaheim, November, HTD-Vol. 361-3, pp. 341-346.
18. **Sailor, D.J.**, 1997). "Climatic Change Feedback to the Energy Sector: Developing Integrated Assessments," *World Resource Review*, **9** (3), 301-316.
17. **Sailor, D.J.**, and Muñoz, R., 1997. "Sensitivity of Electricity and Natural Gas Consumption to Climate in the U.S. - Methodology and Results for Eight States," *Energy, the International Journal.*, **22** (10), pp. 987-998.
16. **Sailor, D.J.**, 1997. "Simulations of Annual Degree Day Impacts of Urban Vegetative Augmentation", *Atmospheric Environment*, **32** (1), 43-52.
15. **Sailor, D.J.**, and Patil, B.K., 1996. "Variable Duty Cycle Experiments in Pulsed-Impingement Heat Transfer", Proceedings of the National Heat Transfer Conference, HTD-Vol. 330 (8), pp. 37-42.
14. Pimenov, O., Michaelides, E.E., **Sailor, D.J.**, Seffal, R., and Sharovarov, G.A., 1995. "Radionuclide Dispersion from Forest Fires", American Society of Mechanical Engineers, Fluids Engineering Division (Publication) FED, v 228, Gas-Particle Flows, 1995, p 155-160.
13. **Sailor, D.J.**, 1995. "Simulated Urban Climate Response to Modifications in Surface Albedo and Vegetative Cover", *Journal of Applied Meteorology*, **34** (7), 1694-1704.
12. Rosenfeld, A.H., Akbari, H., Bretz, S., Fishman, B.L., Kurn, D.M., **Sailor, D.**, and Taha, H., 1995. "Mitigation of Urban Heat Islands: Materials, Utility Programs, Updates," *Energy and Buildings*, **22**, 255-265.
11. Li, X., and **Sailor, D.J.**, 1995. "Electricity Use Sensitivity to Climate and Climate Change," *World Resource Review*, **7** (3), 334-346.
10. **Sailor, D.J.**, 1994. "Mesoscale Meteorological Modeling," Chapter 4 in H. Taha (ed.) pp. 87-122. Lawrence Berkeley National Laboratory Report LBL-35728.
9. **Sailor, D.J.**, 1993. "Role of Surface Characteristics in Urban Meteorology and Air Quality", Ph.D. Dissertation, U.C. Berkeley, 174pp.
8. Eibeck, P.A., Keller, J.O., Bramlette, T.T., and **Sailor, D.J.**, 1993. "Pulse Combustion: Impinging Jet Heat Transfer Enhancement", *Combustion Science and Technology*, **94**, (N1-6), 147-165.

7. Taha, H., **Sailor, D.**, Ritschard, R., Huang, Y., and Winer, A., 1992. "Database on Albedo, Surface Moisture, and Roughness Length for Meteorological Simulations of the South Coast Air Basin," Lawrence Berkeley National Laboratory Report LBL-33051, Berkeley, CA.
6. Taha, H., **Sailor, D.**, and Akbari, H., 1992. "High-Albedo Materials for Reducing Building Cooling Energy Use," Presented at the 1st CIEE R&D Conference, August, San Diego CA. Also Lawrence Berkeley National Laboratory Report LBL-31721, Berkeley, CA.
5. **Sailor, D.J.**, Rainer, L., and Akbari, H., 1992. "Measured Impact of Neighborhood Tree Cover on Microclimate", Proceedings of the ACEEE 1992 Summer Study on Energy Efficiency in Buildings, August 30 - September 5, 1992. Also Lawrence Berkeley Laboratory Report No. LBL-32419.
4. **Sailor, D.J.**, Akbari, H., and Martien, P., 1992. "On the Ability to Model Near-Surface Urban Air Temperatures," Lawrence Berkeley National Laboratory Report No. LBL-31406, Berkeley, CA.
3. **Sailor, D.J.**, and Akbari, H., 1992. "Meteorological Modeling Applications in Building Energy Simulations". Extended abstract from poster session published in Proceedings of the ACEEE 1992 Summer Study on Energy Efficiency in Buildings, August 30 - September 5, 1992. Also Lawrence Berkeley Laboratory Report No. LBL-32420.
2. Akbari, H., Bos, W., Bretz, S., Hanford, J., Rosenfeld, A., **Sailor, D.**, and Taha, H., 1992. "Monitoring Peak Power and Cooling Energy Savings of Shade Trees and White Surfaces in the Sacramento Municipal Utility District (SMUD) Service Area: Project Design and Preliminary Results." Lawrence Berkeley National Laboratory Report LBL-33342, Berkeley, CA.
1. Akbari, H., Taha, H., and **Sailor, D.J.**, 1992. "Measured Savings in Air Conditioning from Shade Trees and White Surfaces", Proceedings of the ACEEE 1992 Summer Study on Energy Efficiency in Buildings. Also Lawrence Berkeley Laboratory Report No. LBL-32316.

INVITED PRESENTATIONS, WEBINARS AND KEYNOTES

35. **Sailor, D.J.**, 2012. "Proving Passive House Performance- two case studies from Portland Oregon", invited presentation and panelist for the Passive House NorthWest conference, March 2, Portland.
34. **Sailor, D.J.**, 2012. Title TBD (Urban Heat Island theme), invited presentation for the Center of Environmental Policy, Academy of Natural Sciences of Drexel University, presentation to ~400 as part of the "New Questions for an Old Planet" seminar series, April 17.
33. **Sailor, D.J.**, 2012. "Green Building and Urban Heat Island Mitigation: a new look at old sustainability strategies," a webinar presented for Climate Communities for an audience of 100+ urban planners and city sustainability directors, Jan. 26.
32. **Sailor, D.J.**, 2011. "Energy and Weather Interactions in the Built Environment - exploring options for urban energy sustainability," invited presentation at the International Workshop on Urban Weather and Climate: Observations and Modeling, co-sponsored by the Chinese Meteorological Society and the American Meteorological Society, Beijing, 12-15 July.
31. **Sailor, D.J.**, 2011. "Our Impact on the Indoor and Outdoor Atmospheric Environments", invited presentation at the Town Hall Meeting: *Impact of Human Occupancy at the 2011 AMS Annual Convention*, held at the American Meteorological Society's Annual Meeting, Seattle, January.
30. **Sailor, D.J.**, Wamser, C., and Rosenstiel, T., 2010 "Solar PV and Green Roof Integration – Performance and Design Considerations," an invited presentation at the 8th Annual Green Roof & Wall Conference – Cities Alive, Vancouver Canada, December.
29. **Sailor, D.J.**, 2010. "Energy Sustainability in the Built Environment," invited plenary presentation for the American Society of Mechanical Engineers (ASME) Energy Sustainability Conference, 2010, Phoenix, May 20. Room capacity 1800, approximately 900 in audience.
28. **Sailor, D.J.**, 2010. Invited Panelist – "Future Directions on Greening the Green Roof System for Climate Change – Embodied Energy, Renewables, Thermal Efficiency, and Sequestration," with David Tilley and Paul Mankiewicz.. An Expert Panel Discussion at the 8th Annual Green Roof & Wall Conference – Cities Alive, Vancouver Canada, December.

27. **Sailor, D.J.**, 2010. “Energy Performance of Green Roofs”, Webinar presentation for the US EPA Heat Island Reduction Initiative Program. Approximately 200 attendees. June 8.
26. **Sailor, D.J.**, 2010. “Energy Performance of Ecoroofs: the role of the roof in affecting building energy and the urban atmospheric environment”, Featured Speaker, Ecoroof Portland, 2010, organized by Portland Bureau of Environmental Services, Portland, Oregon, March 12.
25. **Sailor, D.J.**, 2009. “Anthropogenic Heat and Moisture Emissions in the Urban Environment,” an invited plenary presentation at the 7th International Conference on the Urban Climate ICUC-7, Yokohama, Japan, June 29-July 3, 2009.
24. **Sailor, D.J.**, 2009. “The Green Building Research Laboratory: Providing resources and tools for improving the built environment”, invited presentation at the 2009 Forest Service Sustainable Operations Summit - Leading By Example: Toolkit for Success, October 27-29, 2009, Robert Duncan Plaza, Portland, Oregon.
23. **Sailor, D.J.**, 2009. “The Energy and Environmental Effects of Vegetated Rooftops”, presented as part of the Center for Urban Environmental Research and Education (CUERE) seminar series, University of Maryland, Baltimore County, 9 October.
22. **Sailor, D.J.**, 2009. “Hot and Crowded: Engineering and Urban Design Solutions for a Rapidly Urbanizing World”, lecture presented as part of the Maseeh College of Engineering and Computer Science (MCECS) Alumni Lecture as part of Alumni Weekend, 7 October.
21. **Sailor, D.J.** 2009. “The Urban Heat Island”, an invited presentation at the Sustainability in the Urban Built Environment, part of the Summer Sustainability Series (summersustainabilityseries.org), Portland, OR, June 25.
20. **Sailor, D.J.**, 2009. “Human response to and impact on episodes of poor air quality and extreme heat”, an invited presentation as part of the Coupled Human And Natural Systems (CHANS) Symposium at the annual meeting of the International Association of Landscape Ecologists, April 12-16, Snowbird.
19. **Sailor, D.J.**, 2008. “Measurements and Modelling of the Urban Heat Island Effect – the role of anthropogenic emissions,” invited presentation at the 2nd Earth Observation Workshop, Hong Kong Polytechnic University, May 20-21.
18. **Sailor, D.J.**, 2008. “Energy and Urban Climate Benefits of Green Roofs”, invited presentation at the World Green Roof Congress, London, September 17-18.
17. **Sailor, D.J.**, 2007. “Green Roof Research at Portland State University,” invited seminar at the Houston Advanced Research Center, Houston, Dec 6.
16. **Sailor, D.J.**, 2007. “Feedback Mechanisms in the Urban Climate, Air Quality, and Human Response System,” invited seminar presented in conjunction with a workshop on Coupled Natural Human Systems, sponsored by the Ecosystems, Health, and Built Environment interdisciplinary research initiative at the University of Utah, Salt Lake City, Nov 30.
15. **Sailor, D.J.**, 2007. “Heat Transfer Processes in the Urban Environment – The Urban Heat Island”, invited seminar presented to the Department of Mechanical and Aerospace Engineering, Arizona State University, Phoenix, Apr. 23.
14. **Sailor, D.J.**, 2006. “The Urban Heat Island - Causes, effects, and potential for mitigation,” invited presentation at the Cooling our Communities Workshop, sponsored by ICLEI (Local Governments for Sustainability, www.iclei.org), Miami, Oct 30.
13. **Sailor, D.J.**, 2006. “Mitigation of Urban Heat Islands – recent progress and future prospects”, invited presentation at the Sixth Symposium on the Urban Environment, American Meteorological Society, Atlanta, January.
12. **Sailor, D.J.**, 2005. “Portland’s Homemade Weather – the urban heat island”, invited presentation as part of the Geography Department seminar series, Portland State University, Oct. 12.
11. **Sailor, D.J.**, 2004. “Causes, Effects, and Mitigation of the Urban Heat Island,” invited presentation to the Portland City Club, Growth Management and Environment Committee, March 4.
10. **Sailor, D.J.**, 2002. “Developing Improved Load Forecasting Tools,” invited presentation to Southern Company Load Forecasting group, Birmingham, August 20.

9. **Sailor, D.J.**, 2002. "Urban Heat Island Research at Tulane University", invited presentation to the Houston Galveston Area Council (HGAC), Cool Communities Committee, July 11.
8. **Sailor, D.J.**, 2002. "Atmospheric Modeling of the Urban Environment: Applications in Electric Utility Load Forecasting," invited presentation to the Mechanical Engineering Department, Portland State University, Portland, Apr. 30.
7. **Sailor, D.J.**, 2002. "Urban Transportation Systems and the Environment: Local and Global Consequences," invited presentation as panelist for *Gridlock – A forum on regional transport and sustainable development*, Sponsored by the League of Women Voters, Metropolitan Neighbors, the Sierra Club, and Tulane University, Feb 26
6. **Sailor, D.J.**, 2002. "Improving Electric Utility Load Forecasting through Atmospheric Modeling Enhancements," invited presentation to the Mechanical Engineering Department, Vanderbilt University, Nashville, Feb 25.
5. **Sailor, D.J.** 2002. "The Urban Heat Island Phenomenon: Causes, Impacts, and Potential for Mitigation," invited presentation to the EPA's 5th State and Local Climate Change Partners' Conference, Annapolis, Nov. 21.
4. **Sailor, D.J.**, 2002. "Urban Heat Islands: Opportunities and Challenges for Mitigation and Adaptation", invited Plenary presentation, North American Urban Heat Island Summit, Toronto, May 1.
3. **Sailor, D.J.**, 2000. "Regional Climate Modeling for Climate Change Impact Assessment," invited keynote address to the 11th International Global Warming Conference, Boston, May 2000
2. **Sailor, D.J.**, 2000. "Regional Climate Change Issues and the Role of NIGEC," invited presentation to the Department of Energy's Global Change Education Program summer student orientation, June.
1. **Sailor, D.J.**, 1996. "Energy and Climate Interactions", invited talk, Lawrence Berkeley National Laboratory, Energy and Environment Division, May 1996.

OTHER PUBLICATIONS AND PRESENTATIONS:

69. **Sailor, D.J.**, T.B., Elley, and M. Gibson, 2012. "Exploring the Building Energy Impacts of Green Roof Design Decisions – A modeling study of buildings in 4 different climates", to be presented at the Building Enclosures and Sustainable Technologies conference (BEST-3), Atlanta, April 2-4.
68. McConnell, W.J., Millington, J.D.A., Reo, N.J., Baker, L.A., Brozović, N., Fragoso, J., Holland, D.S., Kohler, T.A., Maschner, H.D.G., Monticino, M., Podestá, G., Pontius Jr., R.G., Redman, C.L., **Sailor, D.J.**, Urquhart, G. and Liu, J., 2011. "Research on Coupled Human and Natural Systems (CHANS): Approach, Challenges and Strategies," *Bulletin of the Ecological Society of America*, **92**, (2), 218-228, April 2011.
67. **Sailor, D.J.**, 2011. "The Role of Complex System Interactions in Assessing the Efficacy of Urban Heat Island Mitigation Strategies," presented at the annual meeting of the Association of American Geographers, Seattle, April.
66. Sampson, D., and **Sailor, D.J.**, 2011. "Coupled energy and water use in the Phoenix Metro Area as influenced by drought and climate change; empirical observations and simulation analyses." presented at the CAP LTER 13th Annual All Scientists Meeting (Poster Symposium), January, 2011.
65. Bass, B., **Sailor, D.J.**, 2010 "Introduction to the new energy calculator," presented at the 8th Annual Green Roof & Wall Conference – Cities Alive, Vancouver Canada, December.
64. **Sailor, D.J.**, 2010. "An Energy Research Agenda for the Oregon Sustainability Center", short presentation as part of the OSC panel at BestFest 2010, Portland, September.
63. **Sailor, D.J.**, Bass, B., Spolek, G., and Peck, S., 2010. "A green roof energy calculator", presented at GreenBuild 2010 as part of USGBC's "Research Gallery", November, Chicago.
62. Scherba, A., Moody, S., and **Sailor, D.J.**, 2010. "White, black, or green? The role of roof design in affecting the urban heat island", P5.4, presented at the 9th Symposium on the Urban Environment, American Meteorological Society, Keystone CO, August (Best Student Poster Award).

61. **Sailor, D.J.**, 2009. “GBRF Project Update: A Green Roof Energy Calculator”, presented at Greenbuild 2009, Phoenix, AZ, November 12.
60. Hart, M., **Sailor, D.J.**, and Low, C.T., 2009. “An evaluation of intra-urban variability of near-surface urban air temperatures and humidity in Hong Kong”, presented at the International Conference on Urban Climate, Tokyo, June.
59. Hart, M., **Sailor, D.J.**, and Low, C.T., 2009. “Spatial variability and exposure to the urban heat island (UHI) in Hong Kong”, presented at the Annual Meeting of the American Association of Geographers, Las Vegas, March.
58. **Sailor, D.J.** and Brooks, A., 2009. “Quantifying anthropogenic moisture emissions and their potential impact on the urban climate,” presented at the 8th Symposium on the Urban Environment, held at the AMS annual meeting, Phoenix, AZ, January.
57. Hart, M., **Sailor, D.J.**, and Low, C.T., 2009. “The urban heat island in Hong Kong: analyses of spatial variability and exposure,” presented at the 8th Symposium on the Urban Environment, held at the AMS annual meeting, Phoenix, AZ, January.
56. **Sailor, D.J.** (2009). “Sustainability in the Urban Built Environment: The Urban Heat Island”, presentation to delegates of an Iraqi Engineering Faculty delegation visit to Oregon, August 12.
55. **Sailor, D.J.**, 2009. “Building Envelope Technologies for Sustainable Buildings”, presented at the NSF CMMI Workshop on Multifunctional Materials and Distributed Renewable Energy for Sustainable Infrastructure, Honolulu, HI, June 22.
54. **Sailor, D.J.**, 2009. “Wind Power & Turbine Technology”, professional development class offered by the Oregon section of the American Society of Mechanical Engineers (presented morning portion of course on “Wind as a Resource”), June. 7.
53. CSB Grimmond, M Rot, TR Ok, YC Au, M Best, R Betts, G Carmichael, H Cleugh, W Dabberdt, R Emmanuel, E Freitas, K Fortuniak, S Hanna, P Klein, LS Kalkstein, CH Liu, A Nickson, D Pearlmutter, **D Sailor**, J Voogt, 2009. Climate and More Sustainable Cities: Climate Information for Improved Planning and Management of Cities (Producers/Capabilities Perspective), a white paper (18pp) presented by Grimmond at World Climate Conference 3 – Better Climate Information for a Better Future, World Meteorological Organization Geneva, Switzerland, 31 August – 4 September.
52. **Sailor, D.J.** and Smith*, M., 2008. “Climate Change Implications for Wind Power Resources in the Northwest United States,” presented at the 2nd International Conference on Energy Sustainability, ASME, Jacksonville, FL, August.
51. Semenza, J.C., Wilson, D.J., Parra, J., Bontempo, B.D., Hart, M., **Sailor, D.J.**, and George, L.A., 2008. “Public perception and behavior change in relationship to hot weather and air pollution,” presented at the American Public Health Association (APHA) annual meeting, San Diego, CA, October.
50. Spolek, G., **Sailor, D.**, and Ervin, D., 2008. “Green roof optimization through experimental, simulation, and economic analysis,” presented at the 6th Annual Greening Rooftops for Sustainable Communities Conference, Baltimore, MD, April 30-May 2.
49. **Sailor, D.J.**, 2009. “A Summary of Academic Sustainability Activities at Portland State University”, testimony before the Oregon House Committee on Sustainability and Economic Development, Feb. 5.
48. **Sailor, D.J.**, 2008. “Energy Efficiency and Ecoroofs: an overview of green building research activities”, Portland State University Umbrella Tour, Nov 19.
47. **Sailor, D.J.**, 2008. “Feedback Mechanisms in the Urban Atmospheric Environment,” presented at PSU Sustainability forum, May 9.
46. **Sailor, D.J.**, 2008. “Green roof studies at PSU: energy, storm water, and urban heat island benefits”, presentation to Dr. Ihab Elzeyadi’s University of Oregon Architecture class (senior/1st year grad).
45. **Sailor, D.J.**, Brooks, A., Hart, M., and Heiple, S., 2007. “A bottom-up approach for estimating latent and sensible heat emissions from anthropogenic sources”, presented at the 7th Symposium on the Urban Environment, AMS, San Diego, Sept. 10-14.

44. Hart, M. and **Sailor, D.J.**, 2007. "Assessing causes in spatial variability in urban heat island magnitude," presented at the 7th Symposium on the Urban Environment, AMS, San Diego, Sept. 10-14.
43. Hart, M., Bontempo, B., Bornstein, B., George, L. Kalkstein, L., **Sailor, D.J.**, Semenza, J., Taha, H., and Wilson, D., 2007. "Investigating the urban climate – air quality – human response system for a heat/air quality episode in Portland, Oregon", presented (as a poster) at the 7th Symposium on the Urban Environment, AMS, San Diego, Sept. 10-14.
42. Burian, S., M. Brown, **D. J. Sailor**, R. M. Cionco, R. Ellefsen, M. Estes, and T. Hultgren, 2007. "Database features of the National Urban Database and Access Portal Tools (NUDAPT)", presented at the 7th Symposium on the Urban Environment, AMS, San Diego, Sept. 10-14.
41. **Sailor, D.J.**, Pham, T., Lee, A., and Larson, T., 2007. "Modeling the building energy consumption effects of green roofs," presented at Greening Rooftops for Sustainable Communities conference, Minneapolis, April.
40. Lee, A., Larson, T., Sailor, D.J., and Ogle, R. 2007. "Developing a Web-based Tool for Assessing Green Roofs," presented at Greening Rooftops for Sustainable Communities conference, Minneapolis, April.
39. **Sailor, D.J.**, speaker with S. Saylor of Vestas Americas, 2007. "Wind Power & Turbine Technology", professional development class offered by the Oregon section of the American Society of Mechanical Engineers (presented morning portion of course on "Wind as a Resource"), Jan. 12.
38. **Sailor, D.J.**, panelist with R. Bertini, and M. Weislogel, 2006. "Lessons from doing research: Developing ideas, getting funding, and doing the work," a panel presentation/discussion for the Portland State Mechanical and Materials Engineering Seminar series, Nov. 17.
37. **Sailor, D.J.**, 2006. "Ecoroof Research at Portland State University", Umbrella Tour (presentation to community members touring campus), Oct 31.
36. **Sailor, D.J.**, S. Heiple, and M. Hart, 2006. "Modeling the effects of anthropogenic heating on the Urban Heat Island – the role of spatial scale", presented at the 6th International Conference on the Urban Climate (ICUC6) in Göteborg, Sweden, June.
35. Hart, M., B. Bontempo, L. George, D. Sailor, and J. Semenza, 2006. "A multi-faceted approach to assessing human response to extreme heat, poor air quality, and public advisories", presented at the 6th International Conference on the Urban Climate (ICUC6) in Göteborg, Sweden, June.
34. **Sailor, D.J.** and Hart, M., 2006. "An Anthropogenic Heating Database for Major U.S. Cities", presented at the Sixth Symposium on the Urban Environment, American Meteorological Society, Atlanta, January.
33. **Sailor, D.J.**, 2006. "Measurements and Modeling of the Urban Heat Island", Environmental Sciences and Resources (ESR) program seminar, Portland State University, Oct 20.
32. **Sailor, D.J.**, 2006. "Urban Heat Islands – Causes, Impacts, and Mitigation", presented for the PSU Development Center and US Army Corps of Engineers as a Seminar for Professional Engineers on the topic of Sustainable Design and Development, Portland, June 1.
31. **Sailor, D.J.**, R.D. Bornstein, L. George, J. Semenza, and H. Taha, 2005. "Complex interactions among urban climate, air quality, and adaptive/reactive human response", presented at the NSF Biocomplexity in the Environment PI meeting, Washington, D.C., March 21-23.
30. **Sailor, D.J.**, R.D. Bornstein, L. George, J. Semenza, and H. Taha, 2005. "Modeling the complex interactions among urban climate, air quality, and adaptive/reactive human response", presented at the 16th Conference on Weather Modification, 85th AMS Annual Meeting, San Diego, January 9-13.
29. **Sailor, D.J.**, 2005. "Thermal Science Modeling and Measurements in the Urban Climate System", seminar presentation, Department of Mechanical and Materials Engineering, Portland State University, Oct. 21.
28. **Sailor, D.J.**, 2004. "Urban Heat Island Research at Portland State University", Umbrella Tour (presentation to community members touring campus), Nov 2.

27. **Sailor, D.J.**, 2004. "Causes, Effects, and Mitigation of the Urban Heat Island," Environmental Sciences and Resources (ESR) Program seminar, Portland State University, May 7.
26. **Sailor, D.J.** and H. Fan, 2004. "Mesoscale modeling of the impact of anthropogenic heating on the urban climate of Houston – the role of spatial and temporal resolution," presented at the 5th Symposium on the Urban Environment, Vancouver, B.C., August 23-26.
25. **Sailor, D.J.** and C. Vasirreddy, 2004. "Spatial and temporal variability of anthropogenic heating in US cities," poster presentation at the 5th Symposium on the Urban Environment, Vancouver, B.C., August 23-26.
24. **Sailor, D.J.**, 2004. "Ecoroofs and the Urban Climate", presented at the Second Annual Greening Rooftops for Sustainable Communities Conference, Portland, OR, June 2-4.
23. **Sailor, D.J.**, and H. Fan, 2004. "The importance of including anthropogenic heating in mesoscale modeling of the urban heat island," presented at the 84th Annual Meeting of the AMS, Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone, Seattle, Jan.
22. **Sailor, D.J.**, L. Lu, and H. Fan, 2003. "Estimating urban anthropogenic heating profiles and their implications for heat island development," In proceedings of the Fifth International Conference on Urban Climate (ICUC-5), Lodz, Poland, Sept. 1-5.
21. **Sailor, D.J.**, Kalkstein, L.S., and Wong, E., 2002. "The Potential of Urban Heat Island Mitigation to Alleviate Heat-Related Mortality – Methodological Overview and Preliminary Modeling Results for Philadelphia", proceedings of the 4th Symposium on the Urban Environment, American Meteorological Society, Norfolk VA, May 21.
20. **Sailor, D.J.** and Breslow, P., 2002. "Developing Improved Tools for Electric Utility Peak Load Forecasting, presented at the Third Symposium on Environmental Applications, 82nd Annual Meeting of the American Meteorological Society, Orlando, January.
19. **Sailor, D.J.** 2001. "Relative Sea Level Rise and the Vulnerability of Coastal Populations to Severe Storms - A Case Study", presented at the Global Change Open Science Conference (IGBP), Amsterdam, the Netherlands, July.
18. **Sailor, D.J.** 2000. " Improved Representation of the Urban Radiative Budget in Mesoscale Atmospheric Models, presented at the 3rd Symposium on Urban Environments, American Meteorological Society, Davis, August.
17. **Sailor, D.J.**, 2000. "Global Climate Change – a Local Perspective", seminar presented to the graduate course *Issues in Environmental Health Sciences*, ENHS 601, Tulane University School of Public Health, October.
16. **Sailor, D.J.**, 2000. "Mitigating the Urban Heat Island to Improve Air Quality and Reduce Energy Consumption", presented at the 1st annual Tulane Engineering Forum, Sept.
15. Rosen, J.N., and **Sailor, D.J.**, 1998. "Initialization Issues for Mesoscale Modeling of Urban Heat Islands," Paper P10A.4, presented at the 2nd Symposium on Urban Environments, American Meteorological Society, Albuquerque, November.
14. **Sailor, D.J.**, and Li, X., 1998. "Tree-Structured Regression Downscaling for Regional Climate Change Predictions of Precipitation," presented at the 9th International Conference on Global Warming, Hong Kong, May.
13. Rohli, D.J., and **Sailor, D.J.**, 1998. "Design and Implementation of a Pulsatile Flow Valve for Industrial Heat and Mass Transfer Applications," Presented at the 1998 ASEE/GSW Annual Conference, New Orleans, March.
12. Hu, T., Li, X., and **Sailor, D.J.**, 1998. "A Neural Network Downscaling Approach for Estimating Regional Temperature Under Global Climate Change," presented at the First Conference on Artificial Intelligence, AMS Annual Meeting, 13-15 January, Phoenix, AZ.
11. **Sailor, D.J.**, 1997. "Regional Scale Climate Change Modeling - A comparison of methods and discussion of uncertainties," Presented at the Society for Risk Analysis annual meeting, 7-10 December, Washington, D.C.

10. **Sailor, D.J.**, 1997. "Climatic Change Feedback to the Energy Sector: Developing Integrated Assessments," Presented at the 8th International Conference on Global Warming, New York NY, May.
9. Barattini*, V. and **Sailor, D.J.**, 1997. "Pulsed Impingement Heat Transfer Enhancement Between an Air Jet and a Heated Surface," Presented at the 1997 ASEE/GSW Annual Conference, Houston, March.
8. Rumph, G. and **Sailor, D.J.**, 1997. "Limitations of Land-Use based Surface Characterization for Mesoscale Models: Implications for Sub-Grid Moisture Parameterization," Presented at the 77th American Meteorological Society Annual Meeting, February, Long Beach.
7. Muñoz, J.R. and **Sailor, D.J.**, 1997. "Potential Impact of Doubling Atmospheric Carbon Dioxide on Energy Consumption in the U.S.," Presented at the 77th American Meteorological Society Annual Meeting, February, Long Beach.
6. Li, X. and **Sailor, D.J.**, 1997. "Correlating NCAR CCM Upper Atmosphere Parameters to Surface Observations for Regional Climate Change Predictions," Presented at the 77th American Meteorological Society Annual Meeting, February, Long Beach.
5. **Sailor, D.J.**, 1996. "Response of Tropospheric Ozone Formation to Meteorological Profile Perturbations", Presented at the 76th annual meeting of the American Meteorological Society, January, Atlanta.
4. Li, X., and **Sailor, D.J.**, 1995. "Energy-Use Implications of Climate Change," presented at the 6th International Conference on Global Warming, San Francisco, April 1995.
3. Larson, M.C., **Sailor, D.J.**, and Lynch, P.M., 1994. "A Capstone Design Course Organized Using a Corporate Structure Model," presented at the 1994 Centennial Meeting of the Gulf-Southwest Section of ASEE, March.
2. **Sailor, D.J.**, 1994. "Sensitivity of Coastal Meteorology and Air Quality to Urban Surface Characteristics", Presented at the 74th annual meeting of the American Meteorological Society, January, Nashville.
1. Kessler, R.C., and **Sailor, D.J.**, 1993. "Use of Numerical Models to Assess the Effects of Energy Usage Reduction Measures on Air Quality in the Los Angeles Area". Presented at the conference: The Role of Meteorology in Managing the Environment in the '90's, The Air and Waste Management Association (AWMA) January.

RESEARCH FUNDING:

AT PORTLAND STATE UNIVERSITY 2003-present (\$3.9M funded as PI):

Development, Testing, and Pilot Scale Evaluation of a new Retrofit Window Insulation Product – The Indow Window, **\$73,481**. Funded by Oregon BEST's Commercialization Grant Program, February 2011- May, 2012, PI.

Green Building Research Laboratory, **\$1,000,000**. Energy and Water Development and Related Agencies Appropriations Act, 2010, 111th Congress, 1st session, Oct. 1, 2009, PI.

Implications of Simultaneous Extreme Heat and Drought Events for Electricity Generation and Consumption and Water Shortage in the Desert Southwest, **\$29,951**. August 2009 – December 2010. Funded by the Bipartisan Policy Center – NCEP as a collaborative project with Arizona State University (D. Sampson and P. Gober).

Integrating Green Roofs and Photovoltaic Arrays for Energy Management and Optimization of Multiple Functionalities, April 2009 – March 2012, **\$300,000**. NSF CBET, Environmental Sustainability. Additional matching funds totaling ~**\$100k** from PGE, Portland Bureau of Environmental Services, and Oregon BEST. Co-PI (with Wamser and Rosenstiel).

- Green Building Research Laboratory Infrastructure, 2009 (Jan. 2009- Jun. 2009). **\$651,532**. PSU Center for Sustainable Processes and Practices (\$351.5k) and match from Oregon BEST Signature Research Center (\$300k). PI with Spolek, Lutzenhiser, and Palleroni.
- Commercial Building Energy Use in Oregon – comparing 2007 Oregon non-residential energy code and the proposed 2010 code revision, **\$23,917**, State of Oregon Building Codes Division. April 2009 - Feb. 2010, PI.
- A Green Roof Energy Calculator, **\$149,509**, 2008-2010 (Nov 1, 2008- Nov 1, 2010). USGBC. PI (with G. Spolek, B. Bass, and S. Peck).
- Measurement and Modeling of Green Roof Performance Leading to the Development of an Energy Savings Calculator, **\$75,000**, 2008-2009. Oregon BEST Signature Research Center, 2008-2009. Co-PI (with G. Spolek).
- A framework for developing design tools for estimating the building energy savings potential of ecoroofs, Total Project support **\$117,000**. Ecotrust Foundation \$62,000, Gerding Edlin \$5,000, City of Portland, Bureau of Environmental Services \$50,000, 2006-2009, PI (with G. Spolek and D. Ervin, PSU).
- Developing Typical Meteorological Year (TMY) data files under climate change scenarios for use in building energy simulations: a case study of Hong Kong and California, HK\$ 658,750 (~**\$85,000** USD), Hong Kong Research Grants Council- General Research Fund, co-PI (with Melissa Hart).
- Development of an Ecoroof Energy Performance Estimation Tool, EPA SBIR 2006, with Quantec LLC, \$69,856. Subcontract to PSU in amount of **\$20,012** for Phase I of SBIR, PI of PSU subcontract with G. Spolek.
- Wireless sensor network technology as a mechanism for enhancing multi-disciplinary engineering education, Intel Faculty Fellowship Program, 2005-2006, **\$39,660** from Intel Corporation, **\$7,945** from PacifiCorp, PI (with M. Faust, ECE, PSU).
- Professional, Technical, and Expert Services for Monitoring and Verification of Green Building Feature Performance, City of Portland, Office of Sustainable Development \$35000 (subcontract of **\$5,241**), 2005-2006, subcontractor.
- Complex interactions among urban climate, air quality, and adaptive/reactive human response: National Science Foundation, special competition in Biocomplexity in the Environment focusing on the Dynamics of Coupled Natural and Human Systems (BE-CNH), 2004-2010, **\$1,699,972** and **\$12,000** REU supplement (Award #s: 0410103 and 0455976), PI (with L. George, J. Semenza, B. Bornstein, and H. Taha).
- Assessing impacts of urban areas on precipitation - an investigation of UCP and anthropogenic heating: NASA, Global Precipitation Measurement Mission, 2005-2006, **\$15,000** (Grant: NNG05GH96G), PI as part of a coordinated set of separate proposals (with Dr. Haider Taha, Altostratus).
- Scoping Study- Assessment of the vulnerability of major cities in Australia to the impacts of climate change, Department of Environment and Heritage, Australian Government, support as a project consultant for Sinclair, Knight, Merz Pty., Ltd, 2005, **\$4,100**.
- Atmospheric Modeling of the Potential Impacts of Green Roofs on Portland's Urban Climate: City of Portland Office of Sustainable Development (Intergovernmental agreement under ordinance # 178791), 2004, **\$4,690**, PI.
- A Screening Tool to Assess the Benefits of Urban Heat Island Reduction Measures: U.S. Environmental Protection Agency (EPA Contract Number 68W02029) as a consulting subcontract (02029-06) through Perrin Quarles Associates, 2003-2007, Total: **\$56,850** (WA101=\$39,000; WA201=\$4,000; WA301=\$9,800; WA401=\$4,050)

AT TULANE UNIVERSITY, 1993-2003 (\$1.23M funded as PI):

- Integrating Remotely Sensed Data and Anthropogenic Heating in Atmospheric Models of the Urban Environment: NASA (NASA/LEQSF(2002-03)-DART-03), 2002-2003, **\$34,506**, PI.
- Streamlined Mesoscale Modeling of Air Temperature Impacts of Heat Island Mitigation Strategies: U.S. Environmental Protection Agency (Assistance ID No. 82806701), 2000-2002, **\$239,435**, PI.

- COAMPS for Coastal Urban Transport Studies - Developing Infrastructure and Testing Models: Office of Naval Research (CBR, N00014-99-1-0763), 2001-2002, **\$50,569**, PI.
- Land Use Feedback to the Regional Climate System: A Sensitivity Study, Department of Energy (Department of Energy, NIGEC, Cooperative Agreement: DE-FC03-90ER61010), 2001-2002, **\$71,712**, PI
- Investigating air quality and meteorological inputs at NIWOT Ridge Department of Energy (Department of Energy, NIGEC, Cooperative Agreement: DE-FC03-90ER61010), 2001-2002, **\$37,187**, PI
- Integrating Cutting-Edge Electromechanical Instrumentation Throughout the Mechanical Engineering Curriculum, Louisiana Board of Regents, Enhancement Program, 2000-2001, **\$150k** agency, \$72.9k match. PI (with J.F. Figueroa, E.E. Michaelides, and A. Rubinstein)
- Enhancing Host Institution Capabilities in Support of NIGEC Activities - Energy and Environment Lab Course, Department of Energy (Department of Energy, Office of Biological and Environmental Research/NIGEC), **\$16,335**, PI.
- Collaborative Research with the Institute of Radioecological Problems (Belarus), Department of Energy-EM, 1994-1997, **\$337,000**, co-PI with E.E. Michaelides (PI) and others.
- Developing Tools for Rapid Assessment of Convective Transport of Atmospheric Contaminants Released Near or at the Surface: Department of Defense (DSWA/CBR), 1998-1999, **\$65,000**, PI
- Downscaling GCM Results for Regional Precipitation Studies, Department of Energy (Department of Energy, NIGEC, Cooperative Agreement: DE-FC03-90ER61010), 1997-2000, **\$244,134**. PI.
- Pulsed Impingement Heat Transfer for HVAC Applications, American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), 1997-1998, **\$2,500** PI.
- Energy-Use Implications of Climate Change, Department of Energy (Department of Energy, Summer Program in Environmental Engineering and Science (SPEES), TRW Corporation, through a grant to the School of Engineering, 1996-1997 **\$30,000**. PI
- NIGEC, Cooperative Agreement: DE-FC03-90ER61010), 1994-1997, **\$196,700**. PI.
- Improving Surface Characterizations for Atmospheric Models, Louisiana Board of Regents LEQSF Research Competitiveness Program, 1994-1997, **\$89,000**. PI.

RECENT RESEARCH COLLABORATORS (outside of Portland State University)

Bass, Brad	Environment Canada and University of Toronto, Canada
Bornstein, Bob	Department of Meteorology, San Jose State University, California
Bryan, Harvey	Arizona State University
Chen, Fei	National Center for Atmospheric Research, Colorado
Christensen, P.	Arizona State University
Dousset, Benedicte	University of Hawaii
Elzeyadi, Ihab	Architecture, University of Oregon
Gaffin, Stuart	Columbia University
Gober, Patricia	Geographical Sciences & Urban Planning, Arizona State University
Hammer, Steven	MIT
Harriss, Bob	Houston Advanced Research Center
Hart, Melissa	Department of Geography, University of Hong Kong
Hayhoe, Katharine	Atmos Research & Consulting and Texas Tech University
Hitchcock, David	Houston Advanced Research Center
Holt, Teddy	Naval Research Laboratory
Kalkstein, Larry	University of Miami, Florida
Kamke, Fred	Oregon State University
Miller, Charlie	Arizona State University
Orton, Philip	Stevens Institute
Peck, Steven	Green Roofs for Healthy Cities, Toronto

Pullen, Julie	Stevens Institute of Technology
Rosenthal, Joyce	Harvard University
Sampson, David	Decision Center for a Desert City, Arizona State University
Semenza, Jan	European Centre for Disease Prevention and Control (ECDC), Sweden
Shepherd, Marshall	Geography, University of Georgia
Stone, Brian	Georgia Tech
Taha, Haider	Altostratus Inc., California
Thompson, William	Naval Research Laboratory
Wiek, Arnim	Arizona State University
Wilhelmi, Olga	National Center for Atmospheric Research

GRADUATE STUDENT AND POSTDOC ADVISEES:

Aghili, Ali (MS - 1995). Doppler system to estimate narrowing of an atherosclerotic lesions

Bhatnagar, Abhishek (M.S. 2006) automated systems for urban heat island measurements.

Boschiero, Jonathan (M.S. 2011). CFD modeling for urban applications.

Breslow, Paul Ph.D., (2004), short-term electric utility load forecasting.

Brooks, Alamelu (2007-2008) building energy modeling for assessing anthropogenic heat emissions

Burnett, Ben (2009-present) heat transfer measurements in urban settings.

Campbell, Kevin (M.S. 2011) Optimization of phase change material use in buildings.

Chu, Chaoyang (Billy) (M.S. – 2000). Urban Heat Islands and Climate Change

Elley, Tim, (2007-present). modeling the building energy impacts of green roofs.

Fan, Hongli Ph.D. Aug. 2004, urbanization of mesoscale atmospheric models

Fu, Qianli (M.S. – 1999). experiments of pulsed impingement heat transfer.

Ganesh, Karthikeyan (M.S., 2008). Development of a small, low power wind sensor.

Gibson, C. Max (2010-present). A three-dimensional flux-skin estimation approach for urban measurements.

Groves, Matt (M.S. -). Measurement and modeling of Passivehouse superinsulated structures.

Haque, Asim (M.S. – 1997). mathematical modeling of the Moulder Cardiac Assist Device

Hart, Melissa (Postdoctoral Researcher, 2005-2008), human response to excessive heat and pollution and the role of public health advisories

Heiple, Shem (MS - 2008), spatial and temporal variability of anthropogenic heating in cities

Hu, Tianmiao (M.S. – 1998), “A Study of Applying Artificial Neural Network Techniques to Regional Climate Downscaling under Global Climate Change”.

Levenda, A., (2010 - present). Building façade surface characteristics and building energy performance.

Li, Xiangshang (Ph.D. - 2000), Postdoctoral Associate Jan 2001 – Dec. 2002. “Applications of Tree-Structured Regression for Regional Precipitation Prediction”.

Lu, Lu, (M.S. – 2003)., Relationships among meteorological parameters and air quality.

Madhusudan, Vikram (MS – 2006), an ecoroof mass and energy balance model for use in building energy simulations

Moody, Seth (2010 – present). Evaluation of an integrated PV-green roof system.

Muñoz, Ricardo (M.S. – 1997). Energy Use Implications of Climate Change.,

Pham, Toan (exchange student 2006). (Applied Mathematics and Computer Science), Univ. of Lyon. implementation of an ecoroof module within the EnergyPlus building energy simulation software program.

Robar, Henry (M.S. – 2008). the thermal discomfort island (TDI) as it relates to surface characteristics and land use.

Rohli, Dan, M.S. (1999) design of a pulsatile flow valve for heat or mass transfer enhancement.

Rosen, Jesse (M.S. – 1998). local climatic effects of the creation of a hydroelectric reservoir

Rumph, Greg (M.S. 1996). sub-grid parameterization strategies in atmospheric models

Scherba, Adam (M.S. student) urban heat island implications of photovoltaic, green, and other roofing systems.

Sharma, Vishaldeep (M.S. - 2010). a moisture transport and tracking model for modeling ecoroofs in building energy simulation applications.

Vasireddy, Chittaranjan (M.S. – 2004), improved state and city scale energy consumption models

TEACHING EXPERIENCE:

Courses Developed and/or Taught:

Advanced Heat Transfer (Portland State: ME 442/542); Taught 1st year graduate students topics in conduction and convection heat transfer.

Advanced Fluid Mechanics (Tulane: MCEN 651); Instructed students in a graduate fluid mechanics course.

Building Energy Simulation (Portland State: ME 422/522); Developed and taught a course in building energy simulation using student-developed and commercial software.

Computational Fluid Mechanics and Heat Transfer (Tulane: MCEN 626); Taught fundamentals of CFD to a class composed primarily of graduate students.

Computer Aided Engineering (Tulane: MCEN 201); Introduced sophomores to many engineering software packages (e.g. Algor, Autocad, Mathcad, ProEngineer).

Fluid Mechanics (Tulane: ENGR 344); Instructed engineering juniors in traditional undergraduate course.

Fundamentals of Building Science (Portland State: ME 423/523). Co-developed and taught (with G. Spolek) a new laboratory and measurement focused course on building science topics for upper division undergraduate and new graduate students.

Heat Transfer (Portland State: ME 323; Tulane: MCEN 302); Instructed Mechanical Engineering juniors in heat and mass transfer

Introduction to Solid Modeling (Tulane: MCEN 202); Developed and taught a software-oriented course on solid modeling to juniors and seniors.

Mechanical Engineering Laboratory (Portland State: ME 411, Tulane: MCEN 371); Instructed juniors, seniors, and graduate students in fundamentals of laboratory measurements and reporting.

Mesoscale Meteorological Modeling (Tulane: MCEN 698); Offered a seminar course into the fundamentals of atmospheric modeling. Concepts included surface characteristics, surface energy balance, atmospheric diffusion, terrain-following (sigma) coordinates.

Thermodynamics (Portland State. ME 321): Traditional junior level course in Thermodynamics for Mechanical and Civil Engineering students.

Outreach and Other Education Projects:

FUSE Summer Institutes, as part of an NSF-funded project assisted in the development and delivery of a 4-week summer institute on urban climate and air quality for high school students and teachers.

Program coordinator: L. George, PSU, 2005-2007.

Presentation at the Beaverton Hillsboro 2nd Science Expo, “Computational Modeling and Measurements in the Urban Climate System”, Sept. 17, 2004. Attendance >1000 high school students from 11 schools in Beaverton and Hillsboro attending concurrent sessions.

Tulane Science Scholars Program (TSSP) Instructor. Taught 12-hour course on Renewable Energy to high school juniors/seniors, Tulane University, Fall, 1998.

Tulane Science Scholars Program (TSSP) Instructor. To teach an 8-hour course on Hands-on Application of Computer Aided Drafting in Engineering Design, Tulane University, Spring 2000.

Summer Program in Environmental Engineering and Science (Tulane), Organized and directed a one-week summer science camp for local junior high school students using grant funds from TRW Inc., 1997. Participated in subsequent years of the program as an instructor for renewable energy projects under funding from the Department of Energy, Tulane University, 1999-2001.

Fundamentals in Engineering Fluid Mechanics Review Lecture (Tulane); Provided review notes and lecture to prepare students for Fluid Mechanics portion of the FE exam; twice a year, Tulane University, 1994-96.

TEACHING ENHANCEMENT ACTIVITIES:

Fall Campus Symposium– Participated in Provost’s symposium focused on “identifying university learning outcomes”, June 2007.

PTC corporation weeklong training seminar in ProEngineer, June, 1999.

Gulf Southwest meeting of the ASEE, Houston, March, 1997.

Environmental Faculty Enrichment Seminar (2 week workshop), Tulane University, May, 1996.

Lilly Endowment Teaching Fellows Conference; Peach Tree, GA, March 1995.

Conference on Teaching in the Sciences; Tulane University January 1994.

Lilly Endowment Teaching Fellows Conference; Indianapolis, November 1994.

President’s Conference on Teaching and Learning; Tulane University October 1993.

UNIVERSITY SERVICE:

University Committees

Research Advisory Council, Member, 2010-present.

Search Committee, Chair for Energy Efficiency and Renewable Energy faculty position (1 of 5 sustainability positions), 2008-2009.

Search Committee for Director for the Center for Sustainable Processes and Practices, (Portland State University), co-chair, 2008-2009.

Undergraduate Curriculum Committee (Portland State), 2005-2008.

Research Advisory Council (Portland State), 2005

Sustainability Steering Committee (Portland State), 2004

Committee on Strategic Planning for Graduate Programs (Tulane), 1999.

Committee on Athletics (Tulane); 1994-1997.

Office of Research Ad Hoc Committee on Computing (Tulane), 1995-1996.

School Committees

Faculty Senate, Senator (Portland State), 2008-2009.

Curriculum Committee (Portland State), 2004-2006

Computing Task Force, College of Engineering (Portland State), 2003-2004.

Steering Committee, Tulane Engineers Forum – Energy and the Environment, 2002

Session Chair, Power Session, Tulane Engineers Forum, Sept., 2002

Computing Committee (Tulane); 1993-2003, (chair ’00-’02).

Dean Search Committee (Tulane), 1998-1999.

Graduate Committee (Tulane), 1995-1999.

Department Committees

Faculty Search Committee, Chair – Energy Position, MME (Portland State), 2007-2008

Tenure and Promotion Committee (Portland State), Chair, 2006-2007

Graduate Committee (Portland State), Chair, 2006-2007

Curriculum Committee (Portland State), chair, Jan. 2004-2006

Faculty Search Committee – Thermal Science Position, MME (Portland State), 2003-2004.

Undergraduate Committee (Tulane), 2001-2003

Administrative Assistant Search Committee (Tulane), 2000.

Graduate Committee (Tulane); 1993-1999 (chair, ’95-’99).

Undergraduate Advisor (Tulane), 1999-2000.

Resource Committee (Tulane), 1993-1996 (chair ’93-’94).

PATENT AND AWARDS:

Outstanding Faculty Research Award, Maseeh College of Engineering and Computer Science, Portland State University, June 2005.

Special Prize for Potential Applicability in Practical Applications. Rosen, J.N., and D.J. Sailor (1998). "Initialization Issues for Mesoscale Modeling of Urban Heat Islands," Paper P10A.4, presented at the 2nd Symposium on Urban Environments, American Meteorological Society, Albuquerque, November.

U.S. Patent #6053203: "Mechanically-driven pulsating flow valve for heat and mass transfer enhancement," David J. Sailor and Daniel J. Rohli, inventors. Issued April 25, 2000.

ASHRAE Undergraduate Senior Project Grant Program Award of \$2,500, 1997.

Tulane Lilly Endowment, 1994. Teaching Fellowship recipient, \$5,000.

National Science Foundation, 1992. Fellowship to participate in the Advanced Computing Summer Institute, San Diego Supercomputer Center.

SOCIETY MEMBERSHIPS AND ADMINISTRATION:

American Society of Mechanical Engineers

Member since 1993

Member K19 Committee on Environmental Heat Transfer (1995-2003)

Member K21 Committee on Heat Transfer Education (1997-2003)

Member Ad Hoc Committee for Heat Transfer Education (1997-2000).

Faculty advisor to student section at Tulane (2001-2003).

American Society of Heating, Refrigeration, and Air Conditioning Engineers

Faculty advisor to student section at Tulane (1997-2000).

Faculty advisor to student chapter at Portland State (2009-present)

American Meteorological Society

Member since 1993

Member, AMS Board on the Urban Environment, Jan. 2005- Dec. 2007.

Chair, AMS Board on the Urban Environment (2008-2011).

International Association for Urban Climate (IAUC)

Member since 2001

Board member 2011-2015 (elected by membership of IAUC)

JOURNAL/MONOGRAPH REVIEWER:

Atmospheric Environment ; Cambridge University Press; Climate Research; Energy, the International Journal; Energy and Buildings; Energy Policy; International Journal of Heat and Mass Transfer; Journal of the Air & Waste Management Association; Journal of Applied Meteorology; Journal of Climate; Journal of Heat Transfer; Journal of Hydrometeorology; Journal of Industrial Ecology; Intergovernmental Panel on Climate Change (IPCC)

PROPOSAL AND PROGRAM REVIEWER:

National Science Foundation

Proposal reviewer (various mail reviews)

Panelist NSF Biocomplexity and Coupled Natural-Human Systems programs

U.S. Department of Energy, Energy Efficiency and Renewable Energy Program

Panelist for Energy Efficiency/Laboratory Program Reviews

Panelist for DoE SBIR program

U.S. Environmental Protection Agency

Panelist for EPA STAR program
Panelist for multiple SBIR programs
Reviewer for “Heat Island Guidebook”, State and Local Branch, 2004.

OTHER LEADERSHIP EXPERIENCE AND CREDENTIALS:

American Meteorological Society

Conference co-chair (with Bob Bornstein and Jason Ching): Seventh Symposium on the Urban Environment, American Meteorological Society, San Diego, September 2007.
Session chair: multiple sessions, Symposia on Urban Environment (2002-2007).

American Society of Mechanical Engineers

Session co-chair for IMECE conference, “Environmental Heat Transfer” session, 1998.

U.S. Global Climate Change Research Program – National Assessment

Member, Steering Committee for Gulf Coast Regional Assessment Workshop (1998).
Commerce, Industry, and Energy, session chair (1998)

Global Warming International Conference

Member International Program Committee (1997-present).
Session chair, GW9 meeting in Hong Kong (1998).
Session chair, GW11 meeting in Boston (2000).

City of New Orleans, Mayor's Office

Cities for Climate Protection Workshop Organizing Committee, Mayor’s Office of Environmental Affairs, Sept. 2000.
Clean Cities Coalition Steering Committee, Mayor’s Office of Economic Development, 2001.

Portland Office of Sustainable Development

Green Investment Fund - Monitoring and Verification of Green Building Feature Performance, 2005-2006.

Oregon Built Environment and Sustainable Technologies (BEST) Signature Research Center

Member, Scientific Advisory Committee, 2008-present.

U.S. Green Building Council (USGBC)

LEED Accredited Professional, 2008.

Conference on Urban Environmental Pollution: Overcoming Obstacles to Sustainability and Quality of Life, organized by the Journal of Environmental Pollution, held on 20-23 June 2010 in Boston, Massachusetts, USA – member Scientific Advisory Committee.