

Mary Ann Piette

Building Technology and Urban Systems Division Director
Senior Scientist

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Professional Positions

- 2015-present** **Division Director**, Building Technology and Urban Systems Division, Energy Technologies Area, LBNL. Oversee work for DOE Building Technology Office, Advance Manufacturing Office, Federal Energy Management Program and Strategic Partnership Programs. Track program performance, evaluate budgets, and develop and support science initiatives.
- 2015-present** **Senior Scientist**, BTUS Division. Lead and conduct research at LBNL across ETA.
- 2013 – 2015** **Department Head**, BTUS Department, Energy and Environmental Technology Division.
- 2010 – 2013** **Deputy Department Head**, Building Technology Department, EETD .
- Summer 2008** **Visiting Researcher**, Commonwealth Scientific and Industrial Research Organization, Division of Energy Technology, Demand Side Energy Systems, Newcastle Australia.
- 1994-2015** **Staff Scientist**, Building Technology Program, Energy and Environment Division, renamed to Environmental Energy Technologies Division.
- 1991-1994** **Scientist**, Energy Analysis Program, Energy and Environment Division, LBNL.
- 1989-1990** **Visiting Researcher**, Chalmers University of Technology, Building Services Engineering Division, Gothenburg Sweden.
- 1983-1989** **Senior Research Associate**, Building Energy Data Group, Applied Science Division, LBNL.
- 1983-1986** **Research Associate**, Building Energy Data Group, Applied Science Division, LBNL.

Leadership Positions, Programs and Projects (Selected)

- 2013-present** **Lab Manager, DOE Building Technology Office**, ETA. Oversee LBNL's \$50M/year R&D portfolio across ETA - BTUS, EAEI, and ESDR divisions. Manage over 50 scopes of work/year, track scientific achievements, milestones and deliverables.
- 2003-present** **Director, Demand Response Research Center**, ETA. PI on Open Automated DR communication technology. OpenADR used in > 10 countries around world and in several states. Conduct research with DOE, CEC, CPUC, BPA, NYSERDA, PG&E, SCE and others. PI on CPUC DR potential study forecasting DR supply curves for 2025.
- 2014-present** **Lead on DOE Initiative Energy Transformation in Cities**, Co-lead DOE Big Idea Metro Energy with ANL, NREL, ORNL and PNNL. Led to over \$2M in funding including LBNL partnership with ANL for 3-year Office of Science Exascale project.
- 2012-present** **International PI and Co-PI US-India Center for Building Energy Research and Development**. PI on Model-Predictive Control in US-China Clean Energy Research Center project Control. Collaborate with US-China and US-India partners, academic and industry stakeholders. Ensure coordination with DOE BTO R&D portfolio.
- 2013-present** **Co-PI, with Laney College NSF Building Efficiency for a Sustainable Tomorrow Center**, Oversee annual institute at LBNL for community college teachers.
- 2012-2017** **PI, Optimizing Operational Efficiency: Integrating Energy Information Systems and Model-Based Diagnostics at the US Naval Academy**. DOD Environmental Security Technology Certification Program (ESTCP).
- 2009-2013** **Group Leader, Commercial Building Systems Group**, Building Technology Department, EETD.

- 2010** **PI, Institute for Building Energy Efficiency and Emerging Markets**, with UCB, UCD, Stanford, ORNL, NREL > 140 industry partners. DOE Buildings Hub Proposal.
- 1997-2003** **Co-PI**, High Performance Commercial Buildings Systems Program, CEC Public Interest Energy Research Program. California Energy Commission.
- 1993-2013** **PI, Commissioning and Energy Information Systems research** – initiated LBNL’s continuous monitoring for performance analysis and persistence of savings. Over \$60M spent in California on implementing retrofit programs. CIEE, DOD, and CEC funding.
- 1989-1990** **Technology Transfer Specialist**, Center for Analysis and Dissemination of Demonstrated Energy Technologies, IEA and NOVEM, Netherlands.

Education and Training

L, Licentiate in Building Services Engineering, Chalmers University of Technology, Gothenburg Sweden. Degree conferred 1992.

M.Sc. in Mechanical Engineering, College of Engineering, University of California, Berkeley, USA. Degree conferred 1988.

B.A. in Physical Science, University of California, College of Letters and Science, Berkeley, USA. Degree conferred 1983.

Emerging Leaders Program, UC Berkeley Haas School of Business, 2010.

Research Funding

PI and Co-PI on over \$40 million in research work, representing over 15 major projects for 10 clients. Collaborative activities span BTUS, EAEI and ESDR in ETA.

Publications

195 publications: 94 peer reviewed publications, 32 journal articles, 10 book chapters or books, 62 refereed conference proceedings. 63 additional LBNL reports and conference papers.

Service in Research Journals

Editorial Board, Journal of Informatics. Journal reviewer for Energy and Buildings, IEEE, ASHRAE, Building and Environment, Energy the International Journal and others.

Service in Staff Development

Active member of ETA’s mentoring program. Worked with over 6 ETA women in last two years. Active member of BTUS Diversity, Equity and Inclusion team.

Service, Academic Research Advisor

- **Carmen Bas**, Visiting Research, Polytechnic University of Valencia, Spain 2018 – present
- **Hiroshi Irie**, Visiting Researcher, Mitsubishi Research Institute, Japan, 2017-present
- **Rebecca Zarin Pass**, Ph.D. post-doc, Stanford University, 2015-2017
- **Peter Alstone**, Ph.D. post-doc ITRI Rosenfeld Fellow, UC Berkeley, 2014-2016
- **Sofia Stensson**, Ph.D. Visiting Researcher, Research Institute of Sweden 2014-2016

- **Juan Pon Salva**, Visiting Researcher, Polytechnic University of Valencia, Spain, 2015-2016
- **Peter Palensky**, Ph.D. Visiting Researcher, Austrian Institute of Technology, 2005-2007
- **Juozas Abaravicius**, Ph.D., Visiting Researcher, Lund University Sweden, 2006-2007

Service, Institutional, Advisory and Committee Work (Recent and Selected)

- **Member**. Research Advisory Board, American Council for an Energy Efficient Economy, 2017-present.
- **Member**. External Review Committee for National Research Council of Canada's High Performance Buildings Program, 2018.
- **Board Member and Founding Member**. Open Automated Demand Response Alliance, 2010-2011 and 2014 to present.
- **Member**. California Technical Forum to formulate California's demand side management programs and strategies, 2014-present.
- **Member**. California Emerging Technologies Coordinating Committee Advisory Council. 2014-present.
- **Member**. UCLA Smart Grid Technology Leadership Council, 2011-present.
- **Member**. LBNL Indirect Advisory Committee.
- **Former Member**. Intelligent Energy Management Initiative Advisory Council - Energy Foundation, 2013-2016.
- **Former Corresponding Member**. ASHRAE Special Project Committee 201, Facility Smart Grid Information Model. 2014-2016.
- **Former Member**. EPRI Energy Efficiency/Grid Modernization Public Advisory Group, 2012-2015.
- **Former Member**. California Institute for Energy Efficiency Enabling Technologies Advisory Committee. 2009-2015.
- **Former Member**. Northwest Commercial Building Technical Advisory Committee, 2014-2016.
- **Former Program Committee**. Conference Paper Reviewer. International Workshop on Energy Efficient Data Centers. 2012 and 2014.
- **Former Member**, LBNL First Sustainability Standards Committee, helped draft Berkeley Lab Sustainability Standard for New Construction. 2012-2013.
- **Former Elected Member** of the National Institute of Standards and Technology's Smart Grid Architecture Council. 2007-2010.
- **Founding Member** of California Commissioning Collaborative 1999-2000.
- **Co-Chair**, 1992 ACEEE Summer Study on Energy Efficiency in Buildings, First women co-chair.
- **Member**, American Society of Heating, Refrigeration, and Air Conditioning Engineers, since 1990.

Awards

- **Women @ Berkeley Lab** recognition. 2015.
- **Verge 25 Award**. Leader in Next-Gen buildings for "Setting research agenda for smart, efficient and connected buildings." Awarded by Greenbiz. November 2012.
- **Peak Load Management Association** - Innovative Application of Commercial and Industrial Technology Award for Automated Demand Response. 2007.
- **Buildy Award, Connectivity Week** – Winner for Application of Automated Control Technology, Automated Demand Response. 2008.
- **Flex Your Power Honorable Mention** – Automated Demand Response. Contra Costa County 13 Buildings with average reduction of 20%. 2008.

- **Benner Award.** National Conference on Building Commissioning for outstanding achievement in making building commissioning "business as usual". May 2006.
- **GSA award.** Federal Energy and Water Management Award, Innovative/New Technology Awards to Small Groups for GSA Energy and Maintenance Network. 2002.
- **Association of Energy Engineers:** Energy Technology Promoter of the Year. November 2002.

Software

Invention Number	Invention Title	Inventors
2014-165	Open Smart Energy Gateway	S. Czarnecki, C. McParland, J. Page, M.A. Piette
2015-065	Benchmarks for Electric Loadshape	M.A. Piette, P. Price
2015-069	Commercial Building Energy Saver	Y. Chen, T. Hong, S.H. Lee, M.A. Piette, K. Sun
2015-070	Database of Energy Efficiency Performance	Y. Chen, T. Hong, S.H. Lee, M.A. Piette
2015-071	Commercial Building Energy Saver, Web App	Y Chen, S.H. Lee, M.A. Piette, K. Sun, R. Zhang
2015-075	Building Loadshape Analysis Package	M.A. Piette, P. Price
2015-090	Open Smart Energy Gateway Tools	S. Czarnecki, C. McParland, J. Page, M.A. Piette
2015-127	Method for Load Shape Benchmarking	M.A. Piette, P. Price
2015-146	Commercial Building Energy Saver, Pro	Y. Chen, T. Hong, S. H. Lee M.A Piette, C. Regnier, K. Sun, S. Taylor-Lange, R. Zhang
2016-158	Demand Response Potential Estimation Package	P. Alstone, M. Berger, L. Dunn, M.A. Piette, J. Potter, P. Schwartz; S. Smith, M. Sohn

Teaching, Workshops & Guest-Lecturing (Selected)

- Workshop Presentation. *District Energy and Predictive Modeling. Building the Energy-Efficient Neighborhoods of Tomorrow.* Alphabet's (Google) Sidewalk Labs Idea Tour. New York, New York. December 2017.
- Visiting Lecture. *Automating Demand Response and DR Value in California's Energy Future, UC Davis Energy Graduate Group Seminar.* October 2017.
- Visiting Lecture. *Future of Demand Response. Workshop at Green Tech Center, Vejle Denmark.* September 2016.
- Visiting Lecture. *Energy and Resource Efficient Building Technology and Urban Systems.* Center for Energy Informatics, **Southern Denmark University.** Odense, Denmark. September 2016.
- Visiting Lecture. *Demand Response Automation and Forecasting. SP Technical Research Institute of Sweden,* Gothenburg Sweden. October 2016.
- Visiting Lecture. *Commercial Building Control Systems and Energy Management: Current Challenges and Future Directions. Sustainable Future Speaker Series, Humboldt State University* April 2017.
- Workshop. *The Future of Demand Response and Customer Load Flexibility. Energy Innovation Forum. New Brunswick Canada.* April 2017.
- Visiting Lectures. *Demand Response and Sustainable Electricity. Chemical Engineering 90. Science and Engineering of Sustainable Energy.* UC Berkeley. April 2016.
- Visiting Lecture. *Automated Demand Response to Enable the Integration of Renewable Resources. International Seminar on Smart Cities and Smart Grid.* Cuenca, Ecuador. June 2015.
- Workshop Presentation. *Emerging Research in Urban Systems Science, International Symposium on Radiological Resilience and Beyond.* LBNL, April 2015.

- Lecture. *Commercial Building Energy Saver Tool Kit*. **International Building Performance Simulation Association San Francisco Chapter Meeting**. San Francisco. February 2015.
- Visiting Lecture. University Enterprise Training Partnership. Demand Response in Deregulated Electricity Markets: Trends and Opportunities. **Polytechnic University of Valencia, Spain**. November 2014.
- Visiting Lecture. Building Energy Efficiency Research at LBNL– Progress and a Vision for Low Energy and Grid Integrated Buildings. **Building Energy Research Center, Tsinghua University, Beijing China**. October 2014.
- Visiting Lecture. Building energy efficiency for class on *Sustainability*. **Merritt College**. March 2013, 2014, 2015.
- Workshop Presentation. National Science Foundation. Building Efficiency for a Sustainable Tomorrow Center. **Laney College, Community College Program**, Oakland, CA. April 2013.
- Visiting Lecture. What Will Drive the Transformation of Energy Systems? A Focus on Smart Buildings and Grid Services. Berkeley. **UCB Center for Research in Energy Systems Transformation**. June 2013.
- Visiting Lecture. Automating Demand Response with OpenADR: Communications, End-Use Loads, and an Advanced Integrated Grid. **Nelson Institute Center for Sustainability and the Global Environment**, and Dept of Civil and Environmental Engineering, University of Wisconsin, Madison. January 2012.
- Workshop Presentation. **National Science Foundation. Laney College**, collaboration for Community College Program. Oakland CA. June 2012.
- Visiting Lecture. Demand Response. **UCLA Anderson School of Business**. Advanced Technology Management. Institute Livermore California. September 2012.
- Lecture. DR and DR automation. **Pacific Energy Center Class**. Pacific Gas and Electric Company. San Francisco. February 2011.
- Visiting Lecture. Energy Information Systems. University of California Berkeley. **Center for the Built Environment, Architecture 241 – Research Methods**, 2010.
- Visiting Lecture. Automated Demand Response. **University of New Mexico**. April 2009.
- Visiting Lecture. Demand Response. **University of California Berkeley: Energy & Resources**. 2009.
- Workshop Presentation to Teachers. **Updating Science Knowledge for Instruction, A Seminar Series for Educators and Students**. LBNL. May 2001.

Recent Invited Presentations - Keynotes

- Keynote. ASHRAE Golden Gate Chapter. *Update on Demand Response in California- From Hot Summer to Any Time DR*. Oakland California. January 2015.
- Keynote. *International Workshop on Energy Efficient Data Centers*. Automation and Communication Systems for Demand Response. UC Berkeley. May 2013.
- Keynote. *Peak Load Management Conference*. Emerging Technologies: Low Energy and Demand Response Technologies. San Francisco. November 2012.
- Keynote. *OpenADR Alliance*. History of OpenADR. Santa Clara CA. 2011.
- Keynote. *IEEE Conference on Sustainable Alternative Energy*, Linking Energy Efficiency and Price Responsive Demand. Valencia Spain. September 2009.
- Keynote. *National Conference on Building Commissioning*. Linking Commissioning, Energy Efficiency, Demand Response and Smart Grid. Portland OR. June 2009.

Public Hearings and Policy

- California Energy Commission. Presentation on Demand Response. Integrated Energy Policy Report workshop. Sacramento CA. August 2017.
- California Public Utilities Commission. 2025 California Demand Response Potential Study, Phase 2 Final Report. Stakeholder Policy workshop. San Francisco. November 2016.
- Testimony to the California State Legislature. Doubling Energy Efficiency in California Buildings.. Hearing on energy efficiency in existing buildings. Sacramento. February 2016.
- California Public Utilities Commission, 2025 California Demand Response Potential Study, Phase 1 Report, Stakeholder Policy workshop. San Francisco. May 2015.
- Minnesota Public Utilities Commission, Smart Grid Workshop on Demand Response. Next Generation Demand Response. August 2014.
- California Energy Commission. Presentation at Integrated Energy Policy report CEC workshop on Demand Response. Sacramento. June 2013.