***Skumatz Economic Research Associates, Inc.***

***Qualifications in Energy Consulting***

Skumatz Economic Research Associates, Inc. (SERA) has worked in program evaluation, market assessment, and potential studies for residential (single and multi-family, and low income), commercial, industrial, and agricultural energy efficiency initiatives.  We have evaluated single programs, as well as entire utility portfolios.  The firm (a WBE) was established in 1990 and in that time, SERA has conducted more than 200 project assignments in the US and internationally, and has published extensively on our project research.  Our staff includes economists and analysts with experience in evaluation, surveys and statistics, quantitative, and policy analysis.  SERA has a reputation for quantitative, data-based research, and developing creative approaches to find practical (and affordable) methods to quantify complex or hard-to-measure impacts.  SERA is based in Colorado, and maintains an office in the Northwest.  SERA has presented the results of our research in 150 papers in trade journals, refereed journals, and national and international conference proceedings.

For energy utilities, regulators, and states, SERA has provided detailed research on best practices in evaluation methods for impact, attribution / net to gross, measure lifetimes, and non-energy benefits work.  Dr. Skumatz conducted work for the California Public Utilities Commission assessing compliance of all state IOUs with mandated programs and activities for four program years; analyses with consequences in the tens of millions of dollars for regulatory proceedings. SERA served as advisors to ALJs on a variety of issues. We reviewed more than 100 studies to assess conformance with protocols; and reviewed measure life values and derivations to set new EUL values or protocols / guidelines for several states and agencies.  She conducted extensive work reviewing and providing advice on cost-effectiveness tests and revisions to better address goals and weaknesses.  Her work in two areas have been developed into widely accepted protocols. SERA staff have provided expert witness testimony or documents for regulatory purposes in Maryland, Colorado, California, Connecticut and elsewhere. For the State of Connecticut, SERA is responsible for peer review and oversight of all energy efficiency evaluation work conducted in support of State gas and electric company programs.

SERA provides a range of economic, statistical, planning, and analysis work.  The firm and its multi-disciplinary staff have years of experience in key areas of utility-related research, including expertise in: 1) EE program / market process and attribution evaluation and tracking; 2) non-energy benefits (NEBs); 3) persistence and measure life; 4) Survey and market research; 5) integrated planning forecasting and statistical analysis; and 6) integrated planning.  SERA’s work is designed to provide information to support decision making in program design / refinement, targeting and investment; customer retention; ratemaking; and resource planning.  SERA's staff has experience working inside utilities as well as in a consulting role.

SERA has extensive experience conducting, managing, and analyzing large survey projects for evaluation, retention, market share impacts, targeting / marketing and other applications.  We have conducted scores of program evaluations, and SERA staff have taught workshops in evaluation, and helped develop a manual on new evaluation techniques for MT programs.  SERA has developed widely-cited state-of-the-art capabilities in measuring non-energy benefits – including applying sophisticated techniques to value and assess the impacts and behavioral changes for participants, measure job creation, and assess emissions impacts.  SERA created a Non-energy benefits computation model that is used across the State of California.  We have developed creative methods of measuring and attributing program effects, and measuring “hard to measure” program benefits.  As examples, we pioneered the methods currently used as state-of-the-art protocols for measure lifetimes, created an innovative approach for measuring market progress through price decomposition, and demonstrated more robust methods for baseline / market projections, and for estimating net-to-gross using multiple perspectives, real-time data collection, and corroborating questions.  A list of a few clients in key areas follows, and for most of the clients, we have conducted work for multiple programs.

SERA’s evaluation expertise is considerable, involving all phases from research design, methods, survey approach, sampling, instrument design, and analysis.  SERA has expertise in survey issues including bias identification, imputation and bias reduction approaches, weighting, and other topics.  We have conducted market characterization / assessment / market potential for a host of residential, commercial, R&D, low income, and other programs – including measure-based, market transformation, education / training, real time pricing, and other programs.  We have developed innovative methodologies and “best practices” research for clients from California to the Northeast.  Finally, a summary of SERA’s broader list of assignments follows. (For many clients, SERA completed multiple assignments.)

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| * **Non-energy benefits** (NRDC, NGRID, CPUC / CIEE, Xcel, PG&E, NYSERDA, SCE, NU, SDG&E, IEA, NZ, BCHydro, Energy Center of Wisc, SCL, SCG, Rightlights, ASE, CYC, private client, CT) * **Regulatory / Testimony assistance** (Ameren, PG&E, CPUC, SCE, NU, PSE, NRDC, Energy Outreach Colorado, Xcel Energy, other) * **Best Practices / Framework/ Oversight** (CIEE, State of CT, NVEnergy, State of California / CPUC, PG&E) * **Cost-Effectiveness Tests** (CPUC/CIEE, PG&E, NRDC for MD, NRDC for CA, NRDC for Maine, ACEEE, IEA, NGRID, SDG&E, NYSERDA, EO Colorado) * **Market characterization for commercial, residential, and multifamily programs** (NYSERDA, NU, PG&E, MEEA, WWP, PSE) * **Market assessment, market progress indicators, tracking** (PG&E, NYSERDA, NU, Rightlights, ASE, BPA, CBEE, private client) * **Process evaluations** (NYSERDA, NVEnergy, STEP-UP, PG&E, BPA, NU, ECWisc, Energy Trust of Oregon, SCE, CBEE, PSE, SCL, Curb Your Carbon (CYC)) * **Impact evaluations, attribution, NTG** (PG&E, NYSERDA, SCL, BPA) * **RFP development / evaluation** (State of CT, Xcel, NSP, PSCo) | * **Measure lifetimes** (States of ME, CA, NY, IL, RI; RTF, CT, CPUC, SCE, BPA, PG&E, CCIG, PSE, NU, NRDC) * **Job creation / economic development / “green” jobs** (NGRID, NRDC, PG&E, NU, SDG&E, SCL, SCG, ACEEE, CPUC / CIEE, Xcel Energy, WI-DAS) * **GHG / emissions estimation** (PG&E, NYSERDA, SCE, NU, SDG&E, NZ, BCHydro, Energy Center of Wisc, SCL, SCG, NGRID, Rightlights, ASE, CYC, NRDC, NGRID) * **Low income program support** (NU, NGRID, PG&E, NGRID, Wisc DAS, SCG, NYSERDA, SDG&E, PSE, SCE, NRDC) * **Commercial sector / stakeholder interviews** (PG&E 4 programs, NYSERDA 7 programs, SCE 3 programs, Rightlights, Xcel Energy)**Surveys and market research** (NRDC, STEP/UP, ECW, PSE, SCL, NU, PG&E, SCE, NYSERDA, CEC, Sierra Pacific, WWP, BPA, CYC, NRDC) * **Rates / forecasting / statistical analysis** (PSE, PG&E, PGE, NERA, EPRI) * **Potential studies** (WWP, BC Hydro, MEEA) * **Behavioral / Education / Outreach evaluations** (CIEE, State of CO, NYSERDA, State of Iowa, Curb Your Carbon, CEC Chicago, Alliance to Save Energy, other) |

**Lisa A. Skumatz**, Ph.D., is President of Skumatz Economic Research Associates.  An economist, she has more than 25 years of experience in energy evaluation.  For energy utilities, regulators, and states, she has provided detailed research and publications on best practices in evaluation methods for impact, attribution / net to gross, measure lifetimes, and non-energy benefits work.  She is nationally known for her work in NEBs and in EULs, and developed the methods that are currently used as best practices or in protocols for those topics.  Dr. Skumatz conducted work for the California Public Utilities Commission assessing compliance of all state IOUs with mandated programs and activities for four program years; analyses with consequences in the tens of millions of dollars for regulatory proceedings. Dr. Skumatz served as advisor to ALJs on a variety of issues. She reviewed more than 100 studies to assess conformance with protocols; and reviewed measure life values and derivations to set new EUL values or protocols / guidelines for several states and agencies.  She has provided regulatory support, reports, or testimony in California, Maryland, Connecticut, Illinois, Missouri, Colorado, and elsewhere. She conducted extensive work reviewing and providing advice on cost-effectiveness tests and revisions to better address goals and weaknesses.  She has conducted work on “best practices” and frameworks for evaluation for California and the CIEE.  Dr. Skumatz developed the research plan, sampling, survey instruments, and analysis matrix for the analysis for the portfolio of residential, commercial, and renewables programs for a large northeast energy agency.  She brings special expertise in survey research, and was responsible for PG&E’s residential appliance saturation surveys for many years; she has conducted all phases of statistical survey for scores of projects for regulatory compliance, evaluation, load research and other applications.  She has published specialized work in identification and treatment of survey bias in energy survey work in refereed journals.  Dr. Skumatz has taught workshops and trainings in program evaluation at utilities and conferences around the country, and has published more than 75 conference papers in energy evaluation topic, and for all the leading national, and international energy evaluation conferences.  Dr. Skumatz holds a B.A. from the University of Wisconsin and a Ph.D. from The Johns Hopkins University (Economics / Econometrics).

**Dana D’Souza, Energy Analyst, SERA,** is an energy analyst with SERA with 8 years of experience, and has conducted process evaluations, market progress research, NEB analysis, and detailed interview work for energy clients across the nation and internationally.  She has conducted detailed process / NTG / NEB telephone interviews with participants and non-participant homeowners, builders, and other stakeholders for projects in California, Colorado, Rhode Island and other states / utilities. She has conducted interviews and analysis of a large commercial and industrial energy efficiency rebate program for a client in NY, and other commercial interviews in California and elsewhere. She has collected and used data to measure market progress, identify key barriers and opportunities, and estimate the gross and net savings attributable to various energy related programs across the country.  She has detailed work in non-energy benefits work, assessing the “hard to measure” program impacts beyond energy savings that accrue due to program efforts.  Her non-energy benefits and net to gross work includes assisting Dr. Skumatz in her work for CIEE/CPUC on measuring behavioral impacts, analysis of the NEBs for the California Statewide Energy Star® Single Family Homes Program and Home Performance with Energy Star®, as well as the California Statewide Energy Star® Multifamily Homes Program, Green Campus program, San Francisco Environment, City of Oakland, Building Research of New Zealand, and other clients.  Ms. D’Souza conducted a detailed process analysis of the Green Campus program, analyzing the participation decision-making, program impacts, program design / implementation, and NEBs associated with the program.

Ms. D’Souza has conducted work in DSM program tracking and evaluation, and conducted field and phone research on energy decision-making / program options / preferences.  She has analyzed the pros and cons of alternative policies and programs, identified the attributable effects, conducted and analyzed large-scale surveys.  She has conducted detailed interviews with building stakeholders, and has analyzed topics including attitudes, adoption of new practices, barriers, investment decisions, customer satisfaction, preferences and behavior.  She has presented her findings at multiple national conferences including AESP and ACEEE.

**Dawn BeMent, Energy Analyst, SERA,** is an energy analyst with SERA with 9 years of experience, and has conducted process evaluations, market progress research, NEB analysis, and detailed interview work for energy clients across the nation including New York, California, Rhode Island, Illinois, Maine, Colorado, and Connecticut.  She is a skilled interviewer, gathering qualitative and quantitative data from participating and non-participating vendors, commercial and residential customers, market actors (lenders, associations, developers, suppliers, etc.). She conducted detailed interviews for a number of recent non-residential programs, including an agricultural program (8 sectors), a commercial dishwashing / warewashing program, and a commercial laundry program. She has conducted detailed process / NTG / NEB telephone interviews, and conducted interviews and analysis of a large commercial and industrial energy efficiency rebate program for a client in NY. She recently conducted several hundred commercial sector interviews across Maine and New York to assess measure lifetimes of thermostats. The interviews and surveys Ms. BeMent has conducted have included modules for program satisfaction and awareness, barriers and opportunities, net to gross, non-energy benefits, measure lifetimes, firmographics, and other topics. Her non-energy benefits and net to gross work includes assisting Dr. Skumatz in her work for CIEE/CPUC on measuring behavioral impacts, analysis of the NEBs for the California Statewide Energy Star® Single Family Homes Program and Home Performance with Energy Star®, as well as the California Statewide Energy Star® Multifamily Homes Program, Green Campus program, San Francisco Environment, City of Oakland, Building Research of New Zealand, and other clients.  Ms. BeMent helped conduct a detailed process analysis of the Green Campus program, analyzing the participation decision-making, program impacts, program design / implementation, and NEBs associated with the program.   She has conducted detailed interviews with building stakeholders, and has analyzed topics including attitudes, adoption of new practices, barriers, investment decisions, customer satisfaction, preferences and behavior.

Ms. BeMent, has conducted process evaluations for energy clients across the nation.  In support of these assignments, she has conducted detailed telephone interviews and literature review work on NTG, NEB, persistence, and lifetime issues. This includes work for the CPUC, review work for Xcel Energy, the Regional Technical Forum (RTF) and the four California IOUs. She recently conducted nearly 100 NEB interviews for an evaluation of a set of low-income weatherization and energy efficiency assistance programs in Colorado and was a primary researcher involved in a state-wide existing homes energy efficiency evaluation. She also conducted detailed NEB and NTG interviews with participating and non-participating builders and households for an evaluation of the California Statewide Energy Star® Single Family Homes Program and Home Performance with Energy Star®, as well as the California Statewide Energy Star® Multifamily Homes Program. Ms. BeMent has co-authored a number of publications in national trade journals and national conference proceedings.

***LISA A. SKUMATZ, Ph.D., Principal, SERA, Inc.***

**EDUCATION**

Ph.D., M.A. Economics, The Johns Hopkins University, Baltimore, Maryland, 1978, 1987.

B.A. Economics, The University of Wisconsin, Madison, Wisconsin, 1975.

Certification Sustainability Leadership and Implementation Certification, University of Denver and Natural Capitalism, 2011

**EXPERIENCE**

1994- Principal, Skumatz Economic Research Associates (SERA, Inc.)

1998- President, The Econservation Institute (non-profit)

2014 Faculty, Graduate Department, University of Colorado, Denver

1990-94 Vice President, Pacific Northwest Division, Synergic Resources Corporation.

1987-90 Rates Economist, City of Seattle.

1985-87 Energy Research Analyst, Pacific Gas and Electric Company.

1980-85 Research Economist, Battelle Pacific Northwest Laboratories.

1978-80 Research Economist, U.S. Bureau of Labor Statistics.

1977-78 Economist, U.S. Department of Health, Education, and Welfare.

Previous - Teaching Assistant and Research Assistant, The Johns Hopkins University, Baltimore

Paid Intern - Ralph Nader’s Public Interest Research Group, Washington DC

Other - Town Trustee, Town of Superior, CO 2004-2014

Dr. Skumatz is Principal of SERA, Inc. and manages the firm's practice in energy-related research. She is an experienced economist with more than 35 years of experience in non-energy benefits, program evaluation and attribution, measure lifetimes, behavioral programs, and market research / assessment. Dr. Skumatz holds a Ph.D. in econometric modeling. Her interests include both quantitative and policy analysis for utilities, and she is most known for using innovative approaches to measure hard-to-measure effects. She has extensive experience in directing / managing, and designing and conducting evaluation projects, from questionnaire design, conducting detailed commercial and residential program stakeholder interviews (she has conducted many hundreds), and developing evaluation results and reports.

***Best Practices Methods and Advisory Assignments***: Dr. Skumatz has conducted nationwide “best practices” research in four key evaluation topics, and she has provided expert witness testimony or documents for regulatory purposes in Maryland, Colorado, California, Connecticut and elsewhere. For the State of Connecticut, Dr. Skumatz is responsible for peer review and oversight of all energy efficiency evaluation work conducted in support of State gas and electric company programs. She serves as an independent evaluation advisor on a portfolio evaluation, and is conducting work coordinating the market assessment / characterization, and attribution work for the portfolio evaluation. These assignments were designed to ensure that the evaluation approach, data collection instruments, analysis, and reporting are efficient, effective, internally consistent, and up to the highest industry standards. This independent evaluation work ensuring that the project undergoes substantial internal scrutiny and review and that the evaluations meet the highest external standards and rigor. In another western state, she is the expert reviewer for all process evaluation and M&V reports, providing expertise on best practices, methods, and analysis. Dr. Skumatz has conducted “best industry practices” work in all the key evaluation topics, including multiple projects on impact evaluation (including dynamic baselines and other topics), attribution / net-to-gross, non-energy benefits (multiple projects), measure lifetimes (multiple projects), and evaluations of behavioral programs (multiple projects). This includes work for the State (the “Framework…” Study), and for the CIEE / CPUC. Dr. Skumatz conducted a detailed evaluation of alternative structures for utility shareholder earnings formulae, and proposals for best practices. She conducted an extensive review of the performance of four IOUs for four program years, assessing the shareholder earnings that should be awarded, a project that addressed tens of millions of dollars of earnings. She led a detailed review of the best practices for measure life studies, examining more than 100 reports, and provided feedback to the regulators on studies not conforming to best practices or protocols. She served as an advisor to an ALJ on a host of follow-up issues around a regulatory proceeding. Dr. Skumatz is also responsible for developing the non-energy benefits methods and modeling work used for low income and other programs by the utilities across the State of California.

* Clients include NV Energy, Connecticut Energy Efficiency Board (Statewide oversight), CPUC / CIEE, PG&E / Statewide, CPUC, NRDC, State of Maryland, State of Maine, EO Colorado, Ameren, State of Illinois, State of Rhode Island, State of NY.

***Non-energy benefits (NEB)****:* Dr. Skumatz is the leading researcher in the nation in the area of Non-Energy Benefits, or monetizing the omitted positive and negative effects attributable to program interventions. She has conducted state-of-the-art work in NEB of DSM programs, developing quantitative estimates of over 3 dozen categories of direct and indirect benefits from the customer, utility, and societal perspectives (each valued using appropriate methodologies). She has more than 40 widely-cited publications in the area, and has pioneered much of the measurement work being conducted in participant-side NEBs. She has analyzed NEBs for more than 50 programs across the US and internationally. SERA completed an exhaustive study for the California Utilities to estimate the array of NEBs for low-income weatherization programs, and reviewed more than 350 articles and publications to develop estimation methods, review secondary and default values, and develop an integrated model of NEBs. She used NEB and input-output models to demonstrate differences in societal economic multipliers depending on program type and region, and has conducted extensive work on emissions-related and health-related NEBs. She has conducted work measuring NEBs for statewide portfolios of energy efficiency programs, and the wide range of residential, commercial, commissioning, real-time pricing, renewables, and other programs. She conducted early and continuing work on policy, best practices, and recommended values for incorporating NEBs in cost-effectiveness tests. Her work has been used in regulatory proceedings and in refining program cost-effectiveness tests.

* These projects were conducted for NGRID, NRDC, IEA, PG&E, SCE, SDG&E, SoCalGas, NYSERDA, Energy Trust of Oregon, Seattle City Light, Northeast Utilities, Energy Center of Wisconsin, BCHydro, NGRID, NU, and many others in the US and internationally, including work in Canada and New Zealand.

***Retention / Measure Lifetime Analyses****.* Dr. Skumatz has conducted a number of residential and commercial measure retention studies, and recently conducted a detailed evaluation of “best practices” for retention work for the CPUC. She conducted the major early EUL studies for Bonneville (BPA), developing the analysis method that has become industry standard. She conducted cutting edge work in measure lifetimes, developing the methods currently considered state of the art in the field, and conducting the most recent and comprehensive study of more than 100 measure life studies to update the measure lifetimes used in the State of California for planning and regulatory purposes, and for the DEER database. She has conducted work to compare EULs used nationally, tracked the origins of the EULs being used across the nation, and identified those without strong foundations to prioritize research needs.

* She has conducted measure life studies for BPA, NorthWest’s Regional Technical Forum (RTF), SCE, NGRID, NRDC IL, RI, CA, NY, CPUC, PG&E, PSE, CCIG, NU, and other clients across the nation.

***Market Research, Survey Design, Sampling, and Statistical Modeling / Analysis****:* Dr. Skumatz has extensive experience in all phases of detailed survey design and analysis for research and program evaluation purposes, including impact / behavioral / demographic / retention surveys and detailed non-energy benefits surveys, appliance saturation and characteristics surveys for residential and commercial customers; NEB research, measure lifetime work, “wants and needs” surveys; attitudinal surveys; self-efficacy, contingent valuation and WTP surveys, ordered logit (for market share analyses); and in-depth interview work. For both the residential and commercial sectors, she has conducted and analyzed validation surveys, determining the accuracy and consistency of phone, on-site, and mail surveys for particular types of questions. Dr. Skumatz has extensive experience in sampling work for energy efficiency evaluation assignments, including process and impact evaluation, load research, net-to-gross studies, residential and commercial saturation surveys, and other evaluation work. She has taught survey sampling and analysis in numerous workshops, and has published on bias reduction techniques for surveys. Dr. Skumatz has used sophisticated methods to identify bias and to impute missing data in surveys. She has conducted statistical and modeling work for energy efficiency projects, including conditional demand analyses, multiple regression analysis, principal components, logit, hazard analyses / measure lifetime analyses, and many other statistical modeling assignments. She integrated ordered logit methods and card rankings into surveys to assess the impact of alternative program interventions on market shares for new technologies. For program evaluation projects, she used surveys to collect data on behaviors, decision-making, and attribution of changes to programs and educational efforts. She used surveys and adaptations of conditional demand techniques to measure the impact of education on behavior changes and program impacts.

* Clients include PG&E, WWP, SCL, Puget Sound Energy, BPA, SCE, and many others discussed elsewhere in these qualifications and project listings (process, impact, NEB, retention, and behavioral studies).

***Social Marketing and Behavioral Programs*; *Outreach / Education Studies*:** Dr. Skumatz has conducted cutting edge work in social marketing and evaluation / measurement of behavioral programs. She has implemented more than 40 social marketing programs, evaluated more than 50, has written a “how to” toolkit on social marketing, a “state of the art / best practices” report on evaluation of behavioral programs, and conducted social marketing workshops across Canada and the US. Her work identified two key gaps in social marketing measurement – cost-effectiveness and retention. She designed and conducted a cutting-edge experiment / program that provided reliable estimates of both these factors, which she placed in the context of other types of traditional energy efficiency programs. She analyzed retention of impacts as well. She designed, conducted, and is evaluating a social marketing program addressing energy and recycling in the Northeast. Her social marketing evaluation work includes military programs, schools-based programs, and numerous residential initiatives. Dr. Skumatz also conducted studies measuring the impacts of outreach and education studies, including projects assessing the relative impacts of various outreach methods.

* Clients include CIEE / CPUC, State of Colorado, NYSERDA, Military client, Curb Your Carbon, Canadian MOE, and many others.

***Process Evaluation and Market Transformation Tracking***: Dr. Skumatz has extensive experience conducting process evaluations for programs across the country. Her process evaluation work goes beyond the standard, incorporating innovative practices for examining program barriers and remedies using techniques that provides specific, implementable recommendations for program staff – including tailored strategies for getting potential participants past barriers to indifference or preference for energy efficient equipment. She developed and published innovative methods for tracking market progress indicators – including and beyond hard-to-measure market share estimates – for energy efficiency equipment. This includes work in market characterization, and measuring market progress and tracking indicators (for residential, commercial, and renewables programs). She has conducted process evaluation work for the residential, C&I, and agricultural sector. Her work on market assessments includes assignments on market adoption of residential and C&I air conditioner equipment, on premise laundry facilities, commercial warewashing equipment, and other technologies. She has conducted focus groups with stakeholders at many levels, including vendors, C&I managers, contractors, and participants / non-participants in residential and commercial programs.

* Clients include BPA, PG&E, SCE, NYSERDA’s portfolio, O&R, ConEd, Xcel Energy, and others.

***Attribution / Net to Gross (NTG), Tracking, Measurement and Evaluation Methods****:*  Dr. Skumatz has conducted state-of-the-art work in attribution and net-to-gross assessments for utilities including work on the wide range of residential, low income, and commercial/ industrial and renewable energy efficiency programs including market transformation, direct install, rebate, and other designs. She has conducted cutting-edge work in free ridership, spillover, and net-to-gross (NTG). She has used specialized techniques to achieve consistency and “bounded” results for NTG and its components (free ridership, spillover), and employs interviews with multiple decision-makers along the chain to program entry to more fully assess attributable program effects. She has “written the manual” (co-author) of the California “Framework…” report on methods for evaluating market transformation and other energy efficiency programs. She conducted a review of techniques for attributing causality in energy conservation / DSM / MT programs, and applied enhanced methods to more than a dozen residential, commercial, and renewable programs. She was responsible for co-writing the impact / baseline, and tracking evaluation sections of the California’s Framework study.

* Clients include PG&E, NYSERDA, CPUC, CIEE, and many others.

**HONORS, MEMBERSHIPS, PRESENTATIONS, AND PUBLICATIONS**

**Lectures and Honors**: Dr. Skumatz has been an invited guest lecturer at Brown University, Yale University, Keio University (Tokyo), University of Wisconsin, University of Washington, and elsewhere. She has been presented with two awards for lifetime achievement at the national level from sustainability organizations.

**Professional Memberships**: Dr. Skumatz served as a member of the Technical Advisory Committee (TAC) for the CBEE, and is a member of the Association of Energy Service Professionals (and its Program Evaluation subcommittee, previous Board member), AEA, WEA, Association of Environmental and Resource Economists, and other professional associations. She serves on the Board of three non-profit organizations.

**Presentations**: She has been a regular speaker (usually with more than one paper presented) at the ACEEE Summer Study (each session since 1986), the Evaluation Conference (IEPEC), AESP, Affordable Comfort, international conferences (EEDAL, ECEEE), and other energy and environmental conferences WEA, AERE, etc.). She has been keynote speaker at a number of conferences in the US and internationally.

**Publications:** Dr. Skumatz has more than 125 articles and papers (beyond reports) in trade journals, conference proceedings, refereed journals and other publications on her work in NEBs, evaluation techniques, measure lifetimes, surveys and bias reduction, program evaluation results, evaluation methods for education programs, self-efficacy, advanced baseline / impact evaluation methods, conditional demand, and other topics. She has another 125 publications (not including reports) in resource economics / recycling / sustainability.

**Non-Energy Benefits (NEBs), Climate Change, Jobs, and Hard To Measure Program Effects**

NEBs: The Latest in Results, Applications, and Best Practices for State Cost-Effectiveness Tests, Proceedings of the IEPEC Conference, August 2015.

Efficiency Programs’ Non-Energy Benefits: How States are Finally Making Progress in Reducing Bias in Cost-Effectiveness Tests, *The Electricity Journal*, September 2015.

Marketing Energy Efficiency – What I Learned from Betty White, Proceedings from the 2014 ACEEE Conference on Buildings, Asilomar, August 2014

Lessons from the Field: Practical Applications for Incorporating Non-Energy Benefits into Cost-Effectiveness Screening*, (with Malmgren), Proceedings of the 2014 ACEEE Summer Study on Buildings, Asilomar CA, August 2014.*

Non-Energy Benefits (NEBs): Theory, Measurement, and the Case for Revision of Utility Cost-Effectiveness Testing, Western Economics Association Conference, Denver, CO, July 2014.

Non-Energy Benefits in an Unusual Environment: The Military. An Example of Ready, Fire, Aim. Proceedings of the IEPEC Conference, August 2013.

A kWh is not just a kWh: Comparing Energy Efficiency Programs in Terms of GHG, Job Impacts, and Policy Achievements (NEBs and Beyond), Proceedings of the American Council for Energy Efficiency Summer Study on Buildings (ACEEE), Asilomar, CA,, August 2010.

Current and Best Practices for Attributing Effects to Energy Efficiency and Behavioral Programs – Discussion of Net-to-Gross (NTG) and Non-Energy Benefits (NEBs), EEDAL, Berlin, June 2009

Do Energy Efficiency Strategies Outperform Recycling in GHG Mitigation and Job Creation? IEPEC, Portland, August 2009

“Tapping Into” Commercial Energy Savings Two Non-Traditional Commercial Sector Energy Users, ACEEE, New York, August 2009

Using NEBs to Attract “Ordinary” Homeowners to Energy Efficiency: The New Zealand Case”, Proceedings of the 2007 IEPEC Evaluation Conference, Chicago, IL (Skumatz & Stoecklein)

NEBs from the Societal Perspective: Methods, Results, Patterns, and Implications”, proceedings of the 2007 IEPEC Evaluation Conference, Chicago, IL. (Skumatz)

Zero And Low Energy Homes In New Zealand: The Value Of Non-Energy Benefits And Their Use In Attracting Homeowners (Stoecklein And Skumatz, Paper 9314), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

New Non-Energy Benefits (Nebs) Results In The Commercial / Industrial Sectors: Findings From Incentive, Retrofit, And Technical Assistance / New Construction Programs (Skumatz & BeMent, 7318), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Commissioning In Public Sector Building—Non-Energy Benefits (Nebs), Not Savings, Are The Selling Point (McClain, Skumatz, And Jennings, 5313), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Attributable Effects From Information And Outreach Programs: Net To Gross, Nebs, And Beyond (Myers & Skumatz, 4322), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Measuring Non-Energy Benefits (Nebs): Valuation Approaches For Participant Nebs (Gardner & Skumatz, 5316), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Economic Impacts From Energy Efficiency Programs –Variations In Multiplier Effects By Program Type And Region (Gardner & Skumatz, 3315), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

NEBs for New Construction Programs: Implications for Building Green, GreenBuild Conference, Denver, CO, November 2006.

Measuring “Hard to Measure” Non-energy benefits (NEBs) from Energy Programs: Methods and Results, American Evaluation Association, Portland, OR, November 2006. American Evaluation Association, Portland, OR, November 2006.

Creative Approaches to Measure Indirect and “Hard to Measure” (HTM) Program Effects: Non-energy Benefits as an Example, American Evaluation Association, Portland, OR, November 2006.

Optimizing Education and Program Outreach: Measuring the Impacts of Resource Conservation Programs, American Evaluation Association, Portland, OR, November 2006.

Actual vs. Perceived Energy Savings: What Causes the Difference and Why Is It Important?, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Attributing NEB Values to Specific Measures: Using Statistical Methods to Disaggregate Results from Programs with Multiple Measures, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Enhanced Techniques for Assessing Attribution, Causality, NEBs, and Cost-Effectiveness in Multifamily Programs, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Net NEB Multipliers for Economic Impacts – Do Multipliers Vary Significantly by State and Program Type?, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

NEBs from Commissioning Programs: Methods, Results, and Implications, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

NEBs in the Commercial and Industrial Sector: Findings from TA, Incentive, Retrofit, and New Construction Programs, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

NEBs from Zero and Low Energy Homes, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Methods for Measuring Non-Energy Benefits and Attributing Program Effects, Proceedings of the 2006 EEDAL Conference, London, England, June 2006.

NEBs in Low Income Applications: Methods, Results, and Implications, Proceedings of the Affordable Comfort International Conference, Austin, TX, May 2006.

Differences in the Valuation of Non-Energy Benefits According to Measurement Methodology: Causes and Consequences, Proceedings of the Association for Energy Service Professionals NESP Conference San Diego, CA, AESP, Clearwater FL, January 2006.

Methods and Results for Measuring Non-Energy Benefits in the Commercial and Industrial Sectors, Proceedings of the ACEEE Industrial Conference, West Point New York, July 2005.

Non-Energy Benefits (NEBs) for a Real Time Pricing Experiment, Proceedings of the Association for Energy Service Professionals (AESP) Conference, Clearwater, Florida, December 2004.

The Most Volatile Non-Energy Benefits (NEBs) – New Research Results “Homing In” on Values for Environmental and Economic Impacts, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Using Non-Energy Benefits (NEBs) to Market Zero and Low Income Homes in New Zealand, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Non-Energy Benefits from ENERGY STAR®: Comprehensive Analysis of Appliance, Outreach, and Homes Programs, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Non-Energy Benefits (NEBs) in the Commercial Sector: Results from Hundreds of Buildings, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Assessing the Economics of Environmental Program Policy Tradeoffs: Applications in Energy Efficiency, Presented to Keio University, Tokyo Japan, October 2003.

The “Mother” of Non-Energy Benefits (NEBs) Studies – Comprehensive Analysis and Modeling of NEBs for Resource Acquisition and Market Transformation Programs, Proceedings of the EEDAL Conference, Turin, Italy, October 2003.

Non-Energy Benefits (NEBs) in Offices and Schools: Do They Influence Building Design and Decision-Making?, Proceedings of the 2003 Energy Program Evaluation Conference, Seattle, WA, August 2003

Determining the Total Costs and Benefits of Commissioning Public Buildings, Proceedings of the 2003 Energy Program Evaluation Conference, Seattle, WA, August 2003 (Authors: Tso, Skumatz, Cohan)

The “Mother” of all Non-Energy Benefits (NEBs) Studies, Presented at Western Economics International Conference, Denver, CO, June 2003.

Comparing Participant Valuation Results Using Three Advanced Survey Measurement Techniques: New Non-Energy Benefits (NEB) Computations of Participant Value, Proceedings of the 2002 ACEEE Summer Study on Energy Efficiency in Buildings, Asilomar, Washington, DC, August 2002.

Non-Energy Benefits Including Productivity, Liability, Tenant Satisfaction, and Others: What Participant Surveys Tell Us About Designing and Marketing Commercial Programs, Proceedings of the 2002 ACEEE Summer Study on Energy Efficiency in Buildings, Asilomar, Washington, DC, August 2002.

Making The Most Of Your Data – Reliable Techniques For Estimating Baseline And Projected Market Shares From Market Transformation Interventions With Limited Observation, Proceedings from the 2001 Association of Energy Service Professionals (AESP) Conference, Ponte Vedra, Florida, December 2001.

Non-Energy Benefits (Nebs) – A Comprehensive Analysis And Modeling Of NEBs For Commercial & Residential Program”, Proceedings from the 2001 Association of Energy Service Professionals (AESP) Conference, Ponte Vedra, Florida, December 2001.

Non-Energy Benefits (NEBs) – The New “Standard” in Comprehensive Estimation and Modeling of NEBs for Commercial and Residential Programs, Proceedings to the 2001 International Energy Program Evaluation Conference, The Tenth International Evaluation Conference, Salt Lake City, Utah, August, 2001.

Non-Energy Benefits (NEBs): Recognizing and Measuring All Net Program Benefits, Skumatz Economic Research Associates Research Report Number NEB2001-02, Boulder, CO, March, 2001.

Non-energy Benefits in the Residential and Non-Residential Sectors – Innovative Measurements and Results for Participant Benefits, for 2000 ACEEE Conference Proceedings, Asilomar, California, August 2000.

What Do Customers Value? What Benefits Utilities? Designing to Maximize Non-Energy Benefits from Efficiency Programs in the Residential Sector, 1999 Energy Evaluation Conference, Denver, August, 1999.

Extra! Extra! Non-Energy Benefits of Residential Programs Swamp Load Impacts!, 1998 ACEEE Conference Proceedings, Asilomar, California, August 1998.

Non-Energy Benefits (NEBs) Swamp Load Impacts – Results for Multiple Residential Programs, Skumatz Economic Research Associates Research Report Number NEB98-2, Boulder, CO, April 1998.

Recognizing All Program Benefits: Estimating the Non-Energy Benefits of PG&E’s Venture Partner Pilot Program (VPP), (coauthor), 1997 Energy Evaluation Conference, Chicago, August 1997.

Recognizing All Program Benefits: Estimates of Non-Energy Benefits from the Customer Perspective, Skumatz Economic Research Associates, Inc., Seattle, Washington, Research Paper Series 9699-3, 1996.

**Social Marketing / Outreach, Behavioral Programs**

“Social Marketing in an Unusual Environment – The Military. One Case Study in Ready, Fire, Aim”, Proceedings of the IEPEC Conferences, 2013.

“Social Marketing Can Be Measured – Four Concrete Examples”, Proceedings of the AESP Conference, Orlando, FL, 2013.

“Is Social Marketing Actually Effective or Cost Effective? Theory, Pilots, and Full-Scale Results, and What it Means for Best Practices in Outreach”, International Solid Waste Association conference, September 2012, Florence, Italy.

Measuring the Impacts of Behavior Change Programs – Filling in the Blanks, Proceedings of the ACEEE Summer Study on Buildings, August 2012, Asilomar, CA

Widgets vs. Actions: Measuring the Role of Behavior Change in DSM Programs, IEPEC International Conference, June 2012, Rome Italy.

Spending Your Outreach Dollar Wisely: Increasing Recycling Using Community-Based Social Marketing”, *Waste Advantage*, February 2012

“Filling Two Key Research Gaps in Social Marketing: Exploring Cost-Effectiveness and Retention in an Experiment to Influence Energyand Trash Recycling Behaviors”, Proceedings of the Association of Environmental and Resource Economists Conference (AERE), 2011.

“Measuring the Impacts of Social Marketing – What is the “Bang for the Buck”? Is it Worth It?”, Proceedings of the EEDAL Conference, 2011

“Does Social Marketing Work: Addressing Measurement Gaps in Impacts and Retention for Behavioral Programs, Proceedings of the IEPEC Conference, 2011 (short presentation and poster)

“Social Marketing – How Cost-Effective is it?”, *Resource Recycling* April 2010.

“Social Marketing – Measuring Impacts and Costs in a Project in the Broadlands Neighborhood”, Proceedings of the Solid Waste Association of North America Wastecon Conference, 2010.

“The Broadlands Project: Using Social Marketing Theory to Influence Energy and Trash Recycling Behaviors”, Proceedings of the AESP Conference, 2009.

Evaluation of the Green Campus Program, prepared for CPUC, October 2006.

\*“Exploring the Role of Attitudes and NEBs in Green Initiatives: Results, Implications, and Uses for Evaluating “Green” Programs”, Western Economics Association, San Diego, July 2006.

\*“Valuing Hard to Measure Program Effects: Survey and Results”, Western Economics Association, San Diego, July 2006.

“Attributable Effects for Information and Outreach Programs: Net to Gross, NEBs, and Beyond”, Proceedings of the ECEEE Conference, France, 2006.

\*“Education / Outreach Programs in Recycling: Impacts and Effects”, SWANA Wastecon, 2006.

Measuring Source Reduction from Composting: Quantitative Analysis”, Prepared for Portland Metro, 2002.

\*“Optimizing Education and Program Outreach: Measuring the Impacts of Recycling and Resource Conservation Programs”, prepared for SWANA WasteCon 2001 proceedings, October 2001.

\*“Evaluating the impact of recycling education”, Resource Recycling, August 2001.

\*Evaluating the Impacts of Recycling / Diversion Education Programs – Effective Methods and Optimizing Expenditures, report prepared for Econservation Institute, for Iowa Department of Natural Resources, August 2001.

Evaluating the Impacts of Education / Outreach Programs – Lessons on Impacts, Methods, and Optimal Education, (coauthor) for 2000 ACEEE Conference Proceedings, Asilomar, California, August 2000.

**Specialized Statistical Analysis**

Updated Measure Lifetime Estimates: EULs Based on 10 Years of Studies, Proceedings of the 2007 IEPEC Evaluation Conference, Chicago, IL.

Incremental / Hedonic Price Analysis: Cost-Effective Methods of Tracking Program Impacts Over Time, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Differences in the Valuation of Non-Energy Benefits According to Measurement Methodology: Causes and Consequences, Proceedings of the Association for Energy Service Professionals NESP Conference San Diego, CA, AESP, Clearwater FL, January 2006.

Attributing NEB Values to Specific Measures: Using Statistical Methods to Disaggregate Results from Programs with Multiple Measures, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Decomposing Price Differentials Due to Energy Star Labels and Energy Efficiency Features in Appliances: Proxy for Market Share Tracking?, proceedings of the ECEEE Conference, Cote d’Azur, France, May 2005.

Efficient Techniques for Estimating Baseline and Market Shares Projections from Market Transformation Interventions”, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Self-Efficacy in Conservation – How Much Does it Matter Whether Customers Believe they Can Effect Change?”, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Successful Techniques for Identifying, Measuring, and Attributing Causality in Residential Programs, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Buying Into Conservation – How Much Does it Matter Whether Customers Believe They Can Effect Change?”, Proceedings of the EEDAL Conference, Turin, Italy, October 2003.

Estimating Baseline and Projected Market Shares from MT Interventions with Limited Observations – Making the Most of Your Data, Proceedings of the EEDAL Conference, Turin, Italy, October 2003.

Comparing Participant Valuation Results Using Three Advanced Survey Measurement Techniques: New Non-Energy Benefits (NEB) Computations of Participant Value, Proceedings of the 2002 ACEEE Summer Study on Energy Efficiency in Buildings, Asilomar, Washington, DC, August 2002.

Making The Most Of Your Data – Reliable Techniques For Estimating Baseline And Projected Market Shares From Market Transformation Interventions With Limited Observation, Proceedings from the 2001 Association of Energy Service Professionals (AESP) Conference, Ponte Vedra, Florida, December 2001.

Energy Consumption, Appliance Holding, Housing, and Demographic Characteristics of Target Groups in the PGandE Service Territory, (author), in Proceedings for DOE Conference on Socioeconomic Research and Analysis, 1987, updated version in Proceedings for ACEEE Conference, Asilomar, California, 1988.

Non-Response in Residential Energy Surveys: Systematic Patterns and Implications for End-Use Models, (co-author), in The Energy Journal, 1988

Truncation Bias in Energy Demand Equations: Effects of Missing Survey Data, in Proceedings for the PG&E Energy Expo, 1986.

Truncation Bias in Energy Demand Equations: Effects of Missing Survey Data, (primary author), Proceedings for ACEEE Summer Study, 1986, ACEEE Washington DC.

**Evaluation Methods, Results, and Policy Implications**

The Tri-Fecta: Comprehensive Review and Best Practices in Impact, Attribution, and Retention of Behavioral Programs and Beyond, Proceedings of the EEDAL Conference, 2011

Status Quo and Gaps for Impact, Attribution and Retention of Behavioral Programs and Beyond, Proceedings of the IEPEC Conference, 2011 (poster presentation)

Saving Energy and Water in On-Premise Laundry and Commercial Warewashing Sectors, Proceedings of the IEPEC Conference, 2011 (short presentation/poster)

Finally – A Simple Way of Getting Measures with More than 3 Year Paybacks Installed!”, Proceedings of the American Council for Energy Efficiency Summer Study on Buildings (ACEEE), Asilomar, CA,, August 2010.

Best Practices and Issues in Attribution and Net-to-Gross – Results of the SERA Nationwide Whitepaper Study for CIEE , Proceedings of the American Council for Energy Efficiency Summer Study on Buildings (ACEEE), Asilomar, CA,, August 2010.

Tracking Market Progress – Alternatives to Market Share Methods to Better Identify “Market Effects” and Program Exit Information, EEDAL 2009

Recycling vs. Energy Efficiency Programs –Which are More Cost-Effective for Reducing GHG?, Western Economics Association, Vancouver BC, June 2009

Measuring Progress In Appliance Market Transformation Programs: Weaknesses Of Traditional Sales / Shipment Methods And Innovative Proxy Metrics – The “NEEPP” Tracking Approach (Skumatz, 6317), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Green Campus: Innovative Approaches To Energizing The “Next Generation” Toward Energy Efficiency And Green Behaviors (Coghlan And Skumatz, 3320), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Integrated, Real Time (IRT), On-Going Data Collection For Evaluation – Benefits And Comparative Results (Gordon & Skumatz, 4323), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Incremental / Hedonic Price Analysis: Cost-Effective Methods of Tracking Program Impacts Over Time, Proceedings for the ACEEE Summer Study on Buildings, Asilomar, CA, August 2006.

Findings and Gaps in CFL Evaluation Research, Proceedings of the 2006 EEDAL Conference, London, England, June 2006.

Comparing Award Mechanisms - What Works?, Proceedings of the 2005 International Energy Program Evaluation Conference, Brooklyn, NY, August 2005

Decomposing Price Differentials Due to Energy Star Labels and Energy Efficiency Features in Appliances: Proxy for Market Share Tracking?, proceedings of the ECEEE Conference, Cote d’Azur, France, May 2005.

Techniques for Getting the Most from and Evaluation: Review of Methods and Results for Attributing Progress, Non-Energy Benefits, Net to Gross, and Cost-Benefit, proceedings of the ECEEE Conference, Cote d’Azur, France, May 2005.

Efficient Techniques for Estimating Baseline and Market Shares Projections from Market Transformation Interventions”, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Self-Efficacy in Conservation – How Much Does it Matter Whether Customers Believe they Can Effect Change?”, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Successful Techniques for Identifying, Measuring, and Attributing Causality in Residential Programs, Proceedings of the 2004 ACEEE Summer Study, Asilomar, CA, August 2004.

Buying Into Conservation – How Much Does it Matter Whether Customers Believe They Can Effect Change?”, Proceedings of the EEDAL Conference, Turin, Italy, October 2003.

Estimating Baseline and Projected Market Shares from MT Interventions with Limited Observations – Making the Most of Your Data, Proceedings of the EEDAL Conference, Turin, Italy, October 2003.

Decision-Making And Intervention Needs In New Offices And Schools – Results Of Detailed Interviews And Surveys For The Energy Center Of Wisconsin, Proceedings to the 2002 AESP Conference, Ponte Verdra, FL, December 2002.

Evaluating Multi-Resource Audit Programs to Demonstrate Sustainability, Payback, and Customer Benefits: Incorporating Non-Energy Benefits (NEBs), Proceedings to the 2001 International Energy Program Evaluation Conference, The Tenth International Evaluation Conference, Salt Lake City, Utah, August, 2001.

A Framework for Planning and Assessing Publicly Funded Energy Efficiency, (coauthor), for AESP Conference Proceedings, October 2000.

Evaluating the Impacts of Education / Outreach Programs – Lessons on Impacts, Methods, and Optimal Education, (coauthor) for 2000 ACEEE Conference Proceedings, Asilomar, California, August 2000.

Working Toward Market Transformation Through Residential and Non-Residential Standard Performance Contract (SPC) Programs – Lessons Learned on Delivery, Design, Participation, and Needs, (coauthor) for 2000 ACEEE Conference Proceedings, Asilomar, California, August 2000.

New Methods for Assessing the Effects of Market Transformation Programs, Policy, Planning, and Evaluation, (coauthor), prepared for Pacific Gas and Electric Company, October 2000.

Tracking Methods for Residential Market Transformation Programs – Methods and Preliminary Results, SERA Working Paper, August, 1999.

Transforming Markets to Get Efficiency into the Residential Sector: Where are the Contractors and What Do They Want and Need?, 1999 Energy Program Evaluation Conference Proceedings, Denver, Colorado, August 1999.

Market Transformation Through Nonresidential Standard Performance Contract Programs – What Drives the Participation Decision? 1999 Energy Program Evaluation Conference Proceedings, Denver, Colorado, August 1999.

Joint On-Site Audits: Getting More for Less with Collaborative Field Visits, (coauthor), 1997 Energy Evaluation Conference, Chicago, August 1997.

Joint On-Site Audits: Providing Better (and More Cost-Effective) Service to Customers, (coauthor), 1996 ACEEE Summer Study, Asilomar, CA.

**Measure Retention and Persistence of Savings**

Mercury-Containing Thermostats – Population, Lifetimes, Decay, and Policy Implications: A Study in Several States, Western Economics Association Conference, Denver, CO, July 2014.

What Makes a Good EUL? New Protocols for Estimating Useful Lifetimes and An Analysis of Existing Estimates, IEPEC International Conference, June 2012, Rome Italy.

The Tri-Fecta: Comprehensive Review and Best Practices in Impact, Attribution, and Retention of Behavioral Programs and Beyond, EEDAL 2011 (also listed above in “Methods”)

Remaining Useful Lifetimes and Persistence – Literature and Methods, Proceedings of the IEPEC Conference, 2011

Status Quo and Gaps for Impact, Attribution and Retention of Behavioral Programs and Beyond, Proceedings of the IEPEC Conference, 2011 (poster presentation; also listed above in “Methods”)

How Long Do Program Savings Last? Issues in Measure Lifetimes and Retention of Savings and Behaviors, EEDAL, Berlin, June 2009

Updated Measure Lifetime Estimates: EULs Based on 10 Years of Studies, Proceedings of the 2007 IEPEC Evaluation Conference, Chicago, IL.

Incorporating Real-World Data Into Measure Lifetime Estimates: How Long Does Energy Efficient Equipment Really Last On-Site?, (Woods & Skumatz, 4319), Proceedings for the European Council for an Energy Efficient Economy (ECEEE), June 2007, France.

Measure Retention, Pricing Analysis, and Actual vs. Perceived Savings, Proceedings of the 2006 EEDAL Conference, London, England, June 2006.

Best Practices in Measure Retention and Lifetime Studies: Standards for Reliable Measure Retention Methodology Derived from Extensive Review, Proceedings of the 2005 International Energy Program Evaluation Conference, Brooklyn, NY, August 2005

Measure Retention Study: Revised Lifetimes for a Residential Weatherization Program, Proceedings of the 2002 ACEEE Summer Study on Energy Efficiency in Buildings, Asilomar, Washington, DC, August 2002.

Measure Retention in Residential New Construction, (coauthor) for 2000 ACEEE Conference Proceedings, Asilomar, California, August 2000.

ECM and Equipment Lifetimes: Results and Implications of Recent Measure Life Studies, (primary author), 1995 Energy Program Evaluation Conference, Chicago, August, 1995.

Effective ECM Measure Lifetimes in Commercial Buildings: Calculations and Analysis of Impacts. (primary author) 1994 ACEEE Summer Study on Energy Efficiency in Buildings, Berkeley, California

Bonneville Measure Life Study: Effect of Commercial Building Changes on Energy Using Equipment, (co-author), for Bonneville Power Administration, 1991, a version of which appeared in Proceedings: ACEEE 1992 Summer Study on Energy Efficiency in Buildings.

*Dr. Skumatz has more than 125 additional publications in the Resource Economics and Sustainability areas.*

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**EDUCATION**

B.A. International Business, San Diego State University

**WORK EXPERIENCE**

2008-present SERA, Energy Analyst

2004-2010 Town Board Trustee, Town of Superior, CO

2008-2010 Representative to Denver Regional Council of Governments

1998-1999 Accounting, Roche Pharmaceuticals, Boulder, CO

**RELEVANT PROJECTS**

Ms. D’Souza has been a research analyst with SERA for more than seven years. She has conducted process evaluations, market progress research, NEB analysis, NTG / Free Rider and Spillover, best practices projects for clients across North America and internationally. Her work includes detailed literature reviews on evaluation topics, as well as surveys and detailed telephone interviews with participants, non-participants, and an array of stakeholders for residential and non-residential programs (including homeowners, low income, MF owners, businesses, agricultural customers, and builders / developers, vendors, lenders, associations, property managers and others). She has conducted both quantitative surveys and detailed case study research for energy utility, regulator, city / county, and other clients.

She is a skilled interviewer, with excellent capabilities obtaining cooperation with participants and non-participants alike for a wide range of program evaluation projects. She has successfully interviewed an array of stakeholders – households, commercial businesses, cities and state contacts, and others -- for residential and non-residential programs in California, Minnesota, Colorado, and across the nation. She is also a skilled facilitator of stakeholder focus groups. Her strengths include an understanding of how the information will be used, which helps make sure she conducts appropriate follow-up on complex analytical issues. She conducted detailed literature review work on NTG, NEB, lifetime, and impact evaluation methods and results in work for the CPUC and other clients, and additional NEB literature review work for Xcel Energy and the four California IOUs. A summary of project efforts is provided below.

* *Energy Efficiency Process / market assessment for agricultural sectors in California*: Ms. D’Souza interviewed numerous actors in 8 sectors of the agricultural market collected detail information for a statewide assessment and energy potential study for several IOUs. Topics included awareness, program uptake, program strengths and barriers, current and upcoming market conditions, operational cost information, regulatory issues / barriers, program interest, and other topics. The production process and regulations were assessed for their effects on energy usage.
* *New York Large Commercial Customer Interviews*: Ms. D’Souza conducted an evaluation of a large commercial and industrial energy efficiency rebate program for Con-Edison and Orange and Rockland including participant, non-participant, and trade ally surveys. These interviews were used to identify market barriers, messaging and outreach improvements, and ways to attract non-participants. The project provided the utilities with recommendations on project delivery improvements and refinements for future years.
* *Social Marketing Evaluation of Military Conservation Behaviors*: This project involved behaviors in energy and water conservation, as well as recycling behavior. Ms. D’Souza conducted program evaluation interviews for a program implemented in military installations in a state. The interviews addressed program awareness and attitudes, behaviors and changes, and other topics used in the evaluation of the program. She also assessed the numbers of proposed behaviors and gave recommendations on project implementation.
* *Colorado Low Income Weatherization*: For an evaluation of a set of low-income weatherization and EE assistance programs in Colorado she conducted nearly 100 NEB and process evaluation interviews.
* *Energy Star®* Program *Stakeholders Project*: This project focused on process evaluation, analysis of barriers and market progress, as well as a detailed computation of net-to-gross and non-energy benefits associated with the program. The work is ultimately used to identify program performance and associate shareholder benefits for utility investments in the program. Ms. D’Souza conducted detailed NEB and NTG interviews with participating and non-participating builders and households for an evaluation of the California Statewide Energy Star® Single Family Homes Program and Home Performance with Energy Star®, as well as the California Statewide Energy Star® Multifamily Homes Program. The topics include awareness and understanding of the program, decision-making, program preferences, program impacts, standard practices / baseline issues, free ridership, three kinds of spillover, and other topics.
* BRANZ – New Zealand: Ms. D’Souza conducted detailed NEB surveys for the Building Research of New Zealand, covering the Zero and Low Energy Homes program (ZALEH), solar water heating, and insulation-related programs. She helped analyze the results for the client.
* *Trade Ally Existing Homes Program, Oregon*: Ms. D’Souza gathered and analyzed data from participants and non participants to assess outreach, practicality, and satisfaction levels for the program. Determined if there was sufficient “buy in” from contractors for effective program promotion and participation. Recommendations for the program were discussed with participants and most efficient means of communication and program outreach to non participants.
* *PACE Programs – Property Tax Energy Efficiency & Renewables Programs:* Ms. D’Souza conducted detailed interviews with four of the major jurisdictions with APCE programs in place, including Berkeley, Boulder County, and two others. She gathered information on the source of funds, measures included, eligibility and administration, participants, and impacts. She compared and contrasted the programs, describing strengths and weaknesses, and cost of impacts across the four designs. She presented this work at ACEEE and AESP conferences.
* *Mercury Thermostats in Existing Buildings- CA, NY, ME, RI, and IL.* For these complex (peer-reviewed) statistical projects, initial information was gathered from HVAC experts, thermostat manufacturers and distributors as a baseline for mercury potential in various style thermostats. Ms. D’Souza conducted hundreds of interviews with businesses and households across these States (in 5 different projects) to gather data on the number, types, age, and removal of thermostats in their businesses or homes. These data were combined with data on the percent of thermostats of different types that contain mercury and used to compute the flow of thermostats available for recycling for each of the next 20 years. The data were used by the thermostat industry and the State’s regulators set goals for product stewardship legislative requirement to establish goals for recycling of mercury thermostats. She also facilitated digital validation of self reported thermostats for each subgroup.
* *Evaluation, Process and Attribution Interviews and Analysis – ENERGY STAR® Homes in California*: Ms. D’Souza conducted interviews with multiple program participants and stakeholder groups to identify the share of conservation behavior and actions that are attributable to program interventions. She conducted detailed interviews with builders / contractors, and homeowners about a variety of process, NEB, and impact issues including questions about awareness and understanding of the program, decision-making, program preferences, program impacts, standard practices / baseline issues, free ridership, three kinds of spillover, and other topics. The work was used for a process evaluation, analysis of barriers and market progress, as well as computation of net-to-gross figures to “check” or validate the results of a difference of differences impact analysis for the program.
* *Market Progress Tracking / Price Decomposition*. Ms. D’Souza conducted “mystery shopper” work, gathering extensive data on prices and features for an array of Energy Star® and non-Energy Star® appliances for a project for on-going tracking of the market progress of an Energy Star® outreach / appliance incentive program. The work involved in-store and other research to gather information on sales price, promotions, and an array of features for lighting and household appliances. Analyses of these data were used to quantify the price differential, or the “premium” associated with the Energy Star® feature to examine reflected market share progress, “exit” timing, and develop estimates of any needed rebates.
* *Literature Review and Best Practices in Impact Evaluation, Net-to-Gross, Non-Energy Benefits, and Measure Lifetimes:* Ms. D’Souza conducted a detailed literature review (web, conference papers, databases, interviews with leading researchers) to assemble papers, reports and research that had been conducted across the US. The project was focused on identifying progress, gaps, best-practices, and patterns in results for these four key evaluation topics. Ms. D’Souza identified and reviewed more than 200 reports and papers to conduct this literature review for CIEE.
* *Measure Lifetimes Research for RTF / Northwest:* This projectinvolved determining the original sources of EUL tables cited in current reports to determine which programs researched and determined their own data or used previous (and often very old) reported data. Ms. D’Souza conducted detailed literature reviews and interviews to support two projects on this topic. First, she gathered data on the tables of EULs being used by utilities across North America, and the sources that were cited. Many sources cited reports whose numbers derived from older reports and dated back decades; for those that were uncited, she conducted interviews to try to identify the sources. She gathered information on a variety of types of primary research used to support existing EUL estimates (statistical EUL studies conducted in various states, ASHRAE tables, manufacturer data, etc). Finally in a follow-up project, she assembled the “best sources” for EUL data to provide EUL estimates to be used by the Regional Technical forum for more than a dozen residential and commercial measures.
* *Non-Energy Benefits for California Low Income Customers:* Ms. D’Souza conducted extensive literature review tasks (web, research and conference papers, and evaluation reports) to assemble data, methods, and best practices on EULs for low weatherization programs. The project was used to identify “state of the art”, gaps, and best interim values to use for NEBs for low income programs in California.
* *Net-To-Gross and Rebound Effects:* For expert witness testimony, Ms. D’Souza conducted extensive literature review on the topics of free ridership, spillover (all types), net-to-gross, realization rates, and rebound effects. The work was used to support testimony for a utility in the Midwest and included sources both regional and national.
* *Biomass Energy Plant Feasibility Analysis, New York:* Ms. D’Souza gathered data on feedstock parameters, risk factors, surrounding markets, regulations, and other topics to conduct a detailed feasibility assessment of a proposed multimillion dollar biomass / gas plant being considered in New York. The client was DOE, the potential granting agency.
* *Commercial Energy Rates Comparisons, Four States:* Ms. D’Souza gathered rates data for key tariff classes from utilities in four states being considered for re-location for a large commercial / industrial customer. This included usage capabilities and rate discount potential.
* *Expert Review of Reports for Connecticut and Nevada:* Ms. D’Souza assisted in the review of process and M&V reports prepared by evaluation consultants in the states of Connecticut and Nevada. This work supported SERA’s work as expert peer-review tasks for these studies.
* *Hard-to-Measure Impacts from Sustainability Initiatives:* This was an impact analysis on sustainability measures. This work is being used to construct a model that can be used to more readily measure / compute the broad array of sustainability impacts of municipal sustainability programs, and measure progress toward sustainability goals. Ms. D’Souza conducted interviews on the hard-to-measure impacts from sustainability initiatives for two municipal clients in California.  She gathered data on a variety of sustainability initiatives on energy, waste, water, air/emissions, economic development, and health.
* *Market Assessment and Evaluation of On-Premise Laundry Efficiency Program:* Ms. D’Souza conducted research and detailed interviews to support a California Utility sponsored market research initiative. She interviews with engineering directors, program managers, and stakeholders to ascertain the efficiency of recycled wastewater technologies. The interviews included information on decision making, characterization, capital improvement projects, performance, and efficiency. The results of these interviews were used to identify technologies impacting a multi-year DSM incentive program.
* *Evaluation of Green Campuses Program*: The Green Campuses Programs worked to increase student awareness of the near and longer-term environmental consequences of their behaviors, and the evaluation examined the impacts of the program on efficiency, technology, energy conservation, and other behaviors. The results of our evaluation were used to make recommendations on program improvements for future years. Ms. D’Souza conducted detailed NEB, NTG, and process evaluation interviews for the Green Campus program, run by Alliance to Save Energy, and active across the State of California. For this student / intern-based multi-campus education-based program, Ms. D’Souza conducted detailed interviews of interns, campus staff, program staff regarding program objectives, strengths and weaknesses, as well as design / cost / impact information on specific elements implemented by the interns (“energy efficiency 101” curricula, residence hall and other efficiency “challenges”, “stairs not elevator” days, fairs, / events, posters, and other initiatives). The work was combined with survey data collected in a series of baseline and end-of-year surveys from 12 college campuses around California to evaluate the success of the “Green Campus” energy-efficiency programs.
* *Market Assessment / Potential for Commercial Dishwashing Program:* Ms. D’Souza conducted interviews and research for a market assessment for a program for energy efficient dishwashers in the commercial sector. Interviews were conducted with cafeterias, restaurants, and other relevant businesses to examine current practices and factors affecting the acceptability of new equipment and practices. The interviews covered decision making, O&M, characterization, capital improvement projects, performance, and efficiency issues.
* *Curb Your Carbon/Cool the Earth.* The Cool the Earth program is a ready-to-run program for K-8 students to educate students and their families about climate change and actions they can take to reduce their impacts. Ms. D’Souza was responsible for collecting information about environmental “equivalencies” to allow translation of survey results to GHG reductions and progress toward program goals. The report included details on program impacts and recommendations for program delivery and evaluation in subsequent years.
* *Social Marketing-The Broadlands Project:* For this grant project, SERA designed and implemented an experimental design to measure the impacts and cost effectiveness of community based social marketing on energy efficiency and recycling behaviors. Control routes were identified through coordination with the local hauler. The project included the use of social norms, new media, incentives, recognition, and multiple other outreach and education tools to increase the adoption of recycling and energy saving actions in a neighborhood of around 1,600 HHs in Colorado. Ms. D’Souza was responsible for literature review (identifying / helping adapt suitable intervention options), baseline measurement efforts (behavioral surveys and weights), delivery and design input of social marketing efforts (posters as well as door-knocking and personal education / “commitment” efforts, and phone calls), and on-going performance measurement (weights and tracking). The project found significant impacts in energy efficiency and recycling, measured retention of behaviors, and tracked a variety of cost-effectiveness metrics. The project also developed a toolkit of outreach and education best management practices. Ms D’Souza led or assisted on most of these activities on the project including focus groups and project coordination.

**PUBLICATIONS, PRESENTATIONS, AND WORKSHOPS**

Ms. D’Souza has given presentations and poster sessions on her energy, recycling, and sustainability work at conferences including the Behavioral Energy (BECC) conferences, Colorado Association for Recycling, USCC, and National AESP, and ACEEE conferences. She has authored / co-authored half a dozen papers in the energy field.

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**EDUCATION**

B.S. Cellular Molecular Biology, University of Michigan, Ann Arbor, MI

B.S. Plant Science, Howard Community College, Columbia, MD

**EXPERIENCE**

2005-Present SERA, Environmental Analyst

1987-1990 Diabetes and Cancer Research, University of MI and University of MD

**RELEVANT PROJECTS**

Ms. BeMent is a research analyst with nearly ten years of experience in energy efficiency program evaluation. Her work focuses on:

* Surveys and interviews for evaluation,
* Literature review and research for best practices, and
* Analysis of markets, potential, and program effects.

Ms. BeMent has conducted primary and secondary data collection work for dozens of SERA evaluation projects, including extensive literature review assignments and hundreds of quantitative and qualitative surveys and detailed interviews. She has conducted detailed surveys and interviews to address process evaluation issues, NTG, NEB, and other issues. Interviewees for residential and non-residential project include participants, non-participants, stakeholders, vendors, program staff, builders / developers, property managers, and others involved in efficiency programs. She has examined program impacts, successful designs, costs, and “best practices” on dozens of projects. She has excellent interview skills, and an ability to obtain cooperation from participants and non-participants, including difficult business interviewees. A summary of project efforts is provided below.

Her project experience includes:

* *Evaluation and Market Research on Commercial On-Premise Laundry:* Ms. BeMent conducted detailed interviews to assess current practices in commercial on-premise laundry and the potential for an initiative to encourage energy efficiency practices and equipment. She conducted interviews with engineering directors, program managers, supply companies, and stakeholders to examine decision making, characterization, capital improvement projects, performance, and efficiency. The results of these interviews were used to identify technologies impacting a multi-year DSM incentive program.
* *Dishwasher / WareWashing Market Assessment and Evaluation:* Ms. BeMent conducted sector and stakeholder interviews and other research to assess the potential for energy and water savings from a proposed warewashing program directed at cafeterias, restaurants, and other relevant businesses. She interviewed businesses, suppliers, O&M staff, program managers, and others to gather data on current practices and factors affecting the acceptability of new equipment and practices. The interviews covered decision making, O&M, characterization, capital improvement projects, performance, and efficiency, and the project identified identify technologies toward a possible DSM incentive program.
* *Process / market assessment for 8 agricultural markets in California*: Ms. BeMent conducted detailed interviews and data collection for a statewide agricultural market assessment and energy potential study for several IOUs. Topics included awareness, program uptake, program strengths and barriers, current and upcoming market conditions, operational cost information, regulatory issues / barriers, program interest, and other topics.
* *Interviews of New York Large Commercial Customer*: Ms. BeMent interviewed Orange and Rockland, and Con-Edison participant, non-participant and trade allies to identify market barriers, messaging and outreach improvements for a commercial and industrial energy efficiency rebate program. As a result, recommendations on future project delivery improvements and refinements were offered, as well as advice on attracting non-participants into the program.
* *Evaluation of Military Social Marketing Program*: Ms. BeMent conducted program evaluation interviews for a program implemented in military installations in a state. The interviews addressed program awareness and attitudes, behaviors and changes, and other topics used in the evaluation of the program.
* *Property Tax Energy Efficiency & Renewables Programs / PACE Programs:* Information on the source of funds, measures included, eligibility and administration, participants, and impacts was gathered by Ms. BeMent through detailed interviews with Berkeley, Boulder County, and two major jurisdictions with APCE programs in place. Program strengths and weaknesses, and cost of impacts across the four designs were compared and contrasted as well.
* *Biomass Plant Feasibility Analysis in New York:* For a project for DOE’s grant program, Ms. BeMent conducted a detailed feasibility assessment of a proposed multimillion dollar biomass / gas plant being considered in New York. She reviewed reports, conducted interviews and analyzed data to assess feedstock parameters, risk factors, surrounding markets, regulations, economic scenarios, and other topics in this feasibility analysis project.
* *Commercial Energy Rates Comparisons, Four States:* Ms. BeMent gathered rates data for key tariff classes from utilities in four states being considered for re-location for a large commercial / industrial customer.
* *Turnover of Mercury Thermostats- CA, NY, ME, RI, and IL* For these complex (peer-reviewed) statistical projects, Ms. BeMent conducted hundreds of interviews with businesses and households across these States (in 5 different projects) to gather data on the number, types, age, and removal of thermostats in their businesses or homes. These data were combined with data on the percent of thermostats of different types that contain mercury and used to compute the flow of thermostats available for recycling for each of the next 20 years. The data were used by the thermostat industry and the State’s regulators set goals for product stewardship legislative requirement to establish goals for recycling of mercury thermostats.
* *California Energy Star® Homes Process and Attribution Interviews*: Ms. BeMent conducted detailed process (awareness / participation / decision-making, etc.), NEB, NTG elements, and impact interviews with program participants and stakeholder groups to identify the share of conservation behavior and actions that are attributable to program interventions. Interviewees included builders / contractors, and homeowners. The work was used for a process evaluation, attribution, barriers, and market progress work.
* *Market Progress Tracking / Price Decomposition*. Ms. BeMent conducted “mystery shopper” work, gathering extensive data on prices and features for an array of Energy Star® and non-Energy Star® appliances for a project for on-going tracking of the market progress of an Energy Star® outreach / appliance incentive program. The work involved in-store and other research to gather information on sales price, promotions, and an array of features for lighting and household appliances. Analyses of these data were used to quantify the price differential, or the “premium” associated with the Energy Star® feature to examine reflected market share progress, “exit” timing, and develop estimates of any needed rebates.
* *Best Practices and Results in 4 Key Evaluation Topics:* This project focused on progress, gaps, best-practices, and patterns in results for four key evaluation topics – Impact Evaluation, Net-to-Gross, Non-Energy Benefits, and Measure Lifetimes. Ms. BeMent conducted a detailed literature review (web, conference papers, databases, interviews with leading researchers) of papers, reports and research on the topics and reviewed more than 200 studies to identify the “state of the art”, and gaps and directions for CIEE.
* *Measure Lifetimes Research for RTF / Northwest:* Ms. BeMent conducted detailed literature reviews and interviews to support two projects on this topic. First, she gathered data on the tables of EULs being used by utilities across North America, and the sources that were cited; for those that were uncited, she conducted interviews to try to identify the sources. She gathered information on a variety of types of primary research used to support existing EUL estimates (statistical EUL studies conducted in various states, ASHRAE tables, manufacturer data, etc). Finally in a follow-up project, she assembled the “best sources” for EUL data to provide EUL estimates to be used by the Regional Technical forum for more than a dozen residential and commercial measures.
* *California Low Income Programs - Non-Energy Benefits:* This project focused on identifying “state of the art”, gaps, and best values for NEBs for low income programs in California. Ms. BeMent conducted extensive literature review including web searches, review of research and conference papers, and analysis of evaluation reports. She helped summarize existing data, methods, and best practices on EULs for low weatherization programs.
* *Low Income Weatherization in Colorado*: In this project, Ms. BeMent conducted nearly 100 NEB and process evaluation interviews in Colorado to evaluate a set of low-income weatherization and EE assistance programs.
* *California Single and Multifamily Program*: Ms. BeMent conducted detailed NEB and NTG interviews with participating and non-participating builders and households for an evaluation of the California Statewide Energy Star® Single Family Homes Program and Home Performance with Energy Star®, as well as the California Statewide Energy Star® Multifamily Homes Program. The topics include awareness and understanding of the program, decision-making, program preferences, program impacts, standard practices / baseline issues, free ridership, three kinds of spillover, and other topics. The work is being used for a process evaluation, analysis of barriers and market progress, as well as a detailed computation of net-to-gross and non-energy benefits associated with the program. The work is ultimately used to identify program performance and associate shareholder benefits for utility investments in the program.
* *Evaluation of Green Campuses Program*: Ms. BeMent conducted detailed NEB, NTG, and process evaluation interviews for the Green Campus program, run by Alliance to Save Energy, and active across the State of California. For this student / intern-based multi-campus education-based program, Ms. BeMent conducted detailed interviews of interns, campus staff, program staff regarding program objectives, strengths and weaknesses, as well as design / cost / impact information on specific elements implemented by the interns (“energy efficiency 101” curricula, residence hall and other efficiency “challenges”, “stairs not elevator” days, fairs, / events, posters, and other initiatives). The work was combined with survey data collected in a series of baseline and end-of-year surveys from 12 college campuses around California to evaluate the success of the “Green Campus” energy-efficiency programs. This program worked to increase student awareness of the near and longer-term environmental consequences of their behaviors, and the evaluation examined the impacts of the program on efficiency, technology, energy conservation, and other behaviors. The results of the evaluation were also used to make recommendations on program improvements for future years.
* BRANZ in New Zealand: Ms. BeMent analyzed and surveyed participants in Zero and Low Energy Homes program (ZALEH), solar water heating, and insulation-related programs for the Building Research of New Zealand.
* *Trade Ally Existing Homes Program, Oregon*: Ms. BeMent gathered and analyzed data from participants and non participants to assess outreach, practicality, and satisfaction levels for the program. Determined if there was sufficient “buy in” from contractors for effective program promotion and participation.
* *Literature Review for Testimony on Net-To-Gross and Rebound Effects:* For expert witness testimony, Ms. BeMent conducted detailed literature review on the topics of free ridership, spillover (all types), net-to-gross, realization rates, and rebound effects. The work was used to support testimony for a utility in the Midwest.
* *Expert Review of Evaluation Reports:* SERA is the oversight evaluation contractor in Connecticut, and peer review expert in Nevada. As part of this expert review work, Ms. BeMent assisted in the review of process and M&V reports prepared by evaluation consultants, including a wide range of impact and process evaluations, market assessments, NTG studies, and other work.
* *Sustainability Research and Impact Analysis.* Ms. BeMent conducted interviews on the hard-to-measure impacts from sustainability initiatives for two municipal clients in California.  She gathered data on a variety of sustainability initiatives on energy, waste, water, air/emissions, economic development, and health.  This work is being used to construct a model that can be used to more readily measure / compute the broad array of sustainability impacts of municipal sustainability programs, and measure progress toward sustainability goals.
* *Evaluation of K-8 Education / Social Marketing Program:* As part of this evaluation of the Cool the Earth / Curb Your Carbon program (a program that educates students and their families about climate change and actions to reduce GHG impacts), Ms. BeMent gathered information about environmental “equivalencies” to allow translation of survey results to GHG reductions and progress toward program goals. The evaluation estimated program impacts and recommendations for program design and implementation refinement.
* *The Broadlands Project:* *Measuring the Impacts of Social Marketing*. The Broadlands Project, designed and implemented by SERA under a grant, used an experimental design to measure the impacts and cost effectiveness of community based social marketing on energy efficiency and recycling behaviors. The project included the use of social norms, new media, incentives, recognition, and multiple other outreach and education tools to increase the adoption of recycling and energy saving actions in a neighborhood of around 1,600 HHs in Colorado. Ms. BeMent was responsible for literature review (identifying / helping adapt suitable intervention options), baseline measurement efforts (behavioral surveys and weights), delivery of social marketing efforts (posters as well as door-knocking and personal education / “commitment” efforts, and phone calls), and on-going performance measurement (weights and tracking). The project found significant impacts in energy efficiency and recycling, measured retention of behaviors, and tracked a variety of cost-effectiveness metrics. The project also developed a toolkit of outreach and education best management practices. Ms BeMent led or assisted on most of these activities on the project.

**PUBLICATIONS, PRESENTATIONS, AND WORKSHOPS**

Ms. BeMent has co-authored half a dozen papers in the energy field as well as given presentations and poster sessions on her energy and recycling work at conferences including the Behavioral Energy (BECC) conference and the Colorado Association for Recycling.