Bio

LINKS
• Personal research website: http://www.stanford.edu/~brodrick/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS
My research focuses on designing various forms of thermal energy production, while incorporating system operation choices into the design. Computational optimization is used to determine these design and operational choices. I am particularly interested in comparing the environmental effects and economic value of using natural gas and solar thermal systems, both for process steam production and for electricity production.

LAB AFFILIATIONS
• Adam Brandt, Energy Assessment and Optimization (9/1/2012)
• Louis Durlofsky, Smart Fields Consortium (9/1/2012)

Publications

PUBLICATIONS
• Optimization of carbon-capture-enabled coal-gas-solar power generation *ENERGY*
  2015; 79: 149-162

• Cost-availability curves for hierarchical implementation of residential energy-efficiency measures *Energy Efficiency*
  Villoria-Siegert, R., Brodrick, P. G., Hallinan, K. P., Brecha, R. J.
  2014

• Energy Information Augmented Community-Based Energy Reduction *SUSTAINABILITY*
  2012; 4 (7): 1371-1396

• Broadband aperiodic air coupled ultrasonic lens *APPLIED PHYSICS LETTERS*
  Welter, J. T., Sathish, S., Dierken, J. M., Brodrick, P. G., Cherry, M. R., Heebl, J. D.
  2012; 100 (21)

• Focusing of longitudinal ultrasonic waves in air with an aperiodic flat lens *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
  Welter, J. T., Sathish, S., Christensen, D. E., Brodrick, P. G., Heebl, J. D., Cherry, M. R.
  2011; 130 (5): 2789-2796

• Establishing Building Recommissioning Priorities and Potential Energy Savings from Utility Energy Data *ASHRAE TRANSACTIONS 2011, VOL 117, PT 2*
Hallinan, K. P., Brodrick, P., Northridge, J., Kissock, J. K., Brecha, R. L.
2011; 117: 495-505