

SETH B.C. SHONKOFF, PhD, MPH

1440 Broadway, Suite 205, Oakland, CA 94612 USA / +1 (510) 899.9706 / sshonkoff@berkeley.edu

EDUCATION

University of California, Berkeley (Sept 2006-May 2012) Berkeley, CA
PhD, Environmental Science, Policy, and Management

University of California, Berkeley (Sept 2007-May 2008) Berkeley, CA
MPH, School of Public Health, Epidemiology

Skidmore College (Sept 1999-May 2003) Saratoga Springs, NY
Bachelor of Arts, Environmental Studies

School for International Training (Jan 2002-May 2002) Belém, Pará, Brazil
Environmental and Cultural Emersion Abroad Program
Focus: Amazonian Ecology and Natural Resource Management

WORK AND RESEARCH EXPERIENCE

Executive Director, PSE Healthy Energy (December 2012-Present)
Oakland, CA; Ithaca, NY; New York City, NY

- PSE Healthy Energy is an energy science and policy institute focused on bringing scientific transparency to energy policy. Science at PSE is generated, translated, and disseminated to ensure it is used to ensure more responsible energy policy decisionmaking.
- Focus on oil and gas development (e.g., shale gas and tight oil development) and renewable energy technologies.
- Management of staff and programs; plan and execute the operational strategy to carry out the mission of the organization.

Visiting Scholar, Dept. of Environmental Science Policy & Management, UC Berkeley (May 2012-Present)

- Environmental public health and climate science and policy; public health and climate dimensions of unconventional fossil fuel development (i.e., shale gas and tight oil development) and renewable energy science and policy.

Affiliate, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory (July 2014-Present) Berkeley, CA

- Environmental and public health dimensions of fossil fuel and hydrocarbon development

Affiliated Faculty Member, Berkeley Food Institute, UC Berkeley (August 2014-Present) Berkeley, CA

Independent Climate & Public Health Consultant (January 2012-Present)

- Research, analysis, and testimony on environmental, public health, energy, and climate issues
- Development of data-driven strategies for effective foundation and philanthropic work.

Contributing Author, IPCC, UC Berkeley (April 2011-April 2014) Berkeley, CA

- Contributing Author, “Human Health” chapter of Working Group II, AR 5 report for the Intergovernmental Panel on Climate Change (IPCC).

Climate & Environmental Public Health Graduate Student Researcher, UC Berkeley (May 2008-May 2012) Berkeley, CA

- Conducted research across environmental, health, and policy disciplines (*with Kirk R. Smith, PhD, MPH & Rachel Morello-Frosch, PhD, MPH*).

Program Associate, Berkeley Air Monitoring Group (February 2010-December 2010) Berkeley, CA

- Managed local staff and executed household energy monitoring and evaluation programs in Ghana and Mali; Built international partnerships; Assessment of climate forcing emissions, technology adoption, energy efficiency, health, and development dimensions of household energy projects in developing countries.

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Health Policy Analyst, San Francisco Dept. of Public Health (May 2007-Sept 2007) San Francisco, CA

- Conducted epidemiologic research; tested patients for HIV and other STIs (*with Jeffrey Klausner, MD, MPH*).

Molecular Epidemiology Graduate Student Researcher, UC Berkeley (Sept 2007-May 2008) Berkeley, CA

- Investigated risk factors for rheumatic fever in children from northeastern Brazil and Oakland, CA (*with Lee Riley, MD, MPH*)

Environmental Analyst, San Francisco Estuary Institute (Sept 2003-June 2006) Oakland, CA

- Managed projects; Collected and analyzed ecological, geomorphological, and aquatic field data; Co-authored science and policy reports for CA state agencies and peer reviewed journals.

SELECTED PUBLICATIONS AND REPORTS

Krieger E, McPhail A, Millstein D, Shehabi A, Czolowski E, Hays J, Casey J, **Shonkoff SBC**. 2016. The Clean Power Plan in Pennsylvania Analyzing power generation for health and equity. *PSE Healthy Energy Technical Report*. June 2016

Krieger E, Casey J, **Shonkoff SBC**. *Forthcoming*. A framework for siting and dispatch of emerging energy resources to realize environmental and health benefits: Case study on peaker power plant displacement. *Energy Policy*.

Hays J, **Shonkoff SBC**. 2016. Toward an Understanding of the Environmental and Public Health Impacts of Unconventional Natural Gas Development: A Categorical Assessment of the Peer-Reviewed Scientific Literature, 2009-2015. *PLOS ONE*. DOI:10.1371/journal.pone.0154164. Available at: <http://dx.plos.org/10.1371/journal.pone.0154164>

Santoro RL, Wells MT, Ingraffea AR, Edelstein K, **Shonkoff SBC**. *Under Review*. Explaining Spatial Variability in Wellbore Impairment Risk for Pennsylvania Oil and Gas Wells, 2000-2014.

Hays J, McCaulley, M, **Shonkoff SBC**. 2016. Public health implications of environmental noise associated with unconventional oil and gas development.

Czolowski E, Hays J, **Shonkoff SBC**. *Under Review*. A geospatial analysis of distances between producing unconventional natural gas wells and places children live, play, and learn in Pennsylvania, USA.

Garcia-Gonzales DA, **Shonkoff SBC**. 2016. Hazardous Air Pollutants from Oil and Gas Development in the United States: A Systematic Review of the Peer-Reviewed Literature from 2012-2015. *A Report Submitted to the United States Environmental Protection Agency*. March 2016.

Shonkoff SBC, Maddalena RL, Hays J, Stringfellow W, Wettstein ZS, Harrison, R, Sandelin W, McKone, TE. 2015. Potential Impacts of Well Stimulation on Human Health in California. *In: An Independent Scientific Assessment of Well Stimulation in California*. California Council on Science and Technology, Sacramento, CA. Available at: <http://ccst.us/publications/2015/vol-II-chapter-6.pdf>

Shonkoff SBC, Jordan P, Brandt A, Ferrar K, Maddalena RL, Greenfield BK, Jerrett, M, Heberger M, McKone TE. 2015. A Case Study of the Petroleum Geological Potential and Potential Public Health Risks Associated with Hydraulic Fracturing and Oil and Gas Development in The Los Angeles Basin. *In: An Independent Scientific Assessment of Well Stimulation in California*. California Council on Science and Technology, Sacramento, CA. Available at: <http://ccst.us/publications/2015/vol-III-chapter-4.pdf>

Hays J, Finkel M, Depledge M, Law A, **Shonkoff SBC**. 2015. Considerations for the development of shale gas in the United Kingdom. *Science of the Total Environment*. 512-513: 36-42

Ingraffea A, Wells M, Santoro R, **Shonkoff SBC**. 2014. Assessment and Risk Analysis of Casing and Cement Impairment in Oil and Gas Wells In Pennsylvania: 2000-2012. *Proceedings of the National Academy of Science*. 111 (30): 10955-10960.

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- Shonkoff SB**, Hays, J, Finkel, MF. 2014. The Public Health Dimensions of Shale Gas Development. *Environmental Health Perspectives*. 122 (8): 787-795. <http://dx.doi.org/10.1289/ehp.1307866>.
- Law A, Hays J, **Shonkoff SB**, Finkel, ML. 2014. Re: Public Health England's reply to editorial on its draft report on shale gas extraction. *BMJ*. 348:g3280
- Law A, Hays J, **Shonkoff SB**, Finkel, ML. 2014. Public Health England's draft report on shale gas extraction: Mistaking best practices for actual practices. *BMJ*. 348:g2728
- Smith KR, et al. (**Shonkoff SB** contributing author). 2013. Chapter 11. Human Health: Impacts, Adaptation, and Co-Benefits, Intergovernmental Panel on Climate Change (IPCC), Assessment Report 5 (AR5). https://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap11_FINAL.pdf
- Shonkoff SB**. 2013. Shale gas and tight oil development: look before we leap. *Global Energy Affairs*.
- Shonkoff SB**. 2012. The Frack Gap: well density, environmental and health protections, and socioeconomic status in the United States. *A Whitepaper*.
- Shonkoff SB**, Morello-Frosch R, Pastor M, Sadd J. 2011. Environmental Health and Equity Implications of Climate Change and Mitigation Policies in California: A Review of the Literature. *Climatic Change*. Volume 109. Supp. 1.
- Jerrett M, Su JG, Ortega Hinojosa OM, Kontgis C, **Shonkoff SB**, Yuen T, Seto E, Jesdale, B, Morello-Frosch R. *In Preparation*. Mapping Climate Change Exposures, Vulnerabilities and Adaptation to Public Health Risks in the San Francisco Bay and Fresno Regions. California Energy Commission.
- Shonkoff SB**, Chafe Z, Smith KR. 2010. Addressing Inconsistencies in Black Carbon Literature. Poster presented at the *American Geophysical Union*. Session Title: Black Carbon's Role in Global to Local Air Quality and Climate Change. San Francisco, CA. December 15, 2010.
- Smith KR, Jerrett M, Anderson HR, Burnett RT, Stone V, Derwent R, Atkinson RW, Cohen A, **Shonkoff SB**, Krewski D, Pope CA, 3rd, Thun MJ, Thurston G. 2009. Public Health Benefits of Strategies to Reduce Greenhouse-Gas Emissions: Health Implications of Short-Lived Greenhouse Pollutants. *The Lancet*. 374(9707): 2091-2103.
- Shonkoff SB**, Morello-Frosch R, Pastor M, Sadd J. 2009. Minding the Climate Gap: Implications of Environmental Health Inequities for Mitigation Policies in California. *Environmental Justice 2(4): 173-177*.
- Morello-Frosch R, Pastor M, Sadd J, **Shonkoff SB**. 2009. The Climate Gap: Inequalities in How Climate Change Hurts Americans & How to Close the Gap. The Program for Environmental and Regional Equity (PERE). University of Southern California. Available at: <http://dornsife.usc.edu/pere/publications/>
- Shonkoff SB**, Morello-Frosch R, Pastor M, Sadd J. 2009. Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature." In: Cal-EPA Climate Action Team Report. Available at: <http://www.climatechange.ca.gov/publicationscatindex.html>
- Shonkoff SB**, Ahrens K, Klausner JA. 2008. Comparing HIV Positivity Rates in Risk Based Targeted vs. Opt-in Expanded HIV Testing Frameworks in a Municipal STD Clinic in San Francisco, CA. Poster Presented at the CDC National STD Conference, Chicago, IL, March 10-13, 2008.
- Spencer DF, Ksander GG, Donovan MJ, Liow PS, Chan WK, Greenfield BK, **Shonkoff SB**, Andrew S. 2006. Evaluation of Waterhyacinth Survival and Growth in the Sacramento Delta, California, following cutting. *The Journal of Plant Management*. 44: 50-60
- Greenfield BK, Jahn A, Grenier JL, **Shonkoff SB**, Sandheinrich M. 2006. Mercury in Biosentinel Fish in San Francisco Bay: First Year Project Report: A report of the Regional Monitoring Program Exposure and Effects Pilot Study. SFEI; River Studies Center, University of Wisconsin.

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Greenfield BK, David N, Siemering GS, McNabb TP, Spencer DF, Ksander GG, Donovan MJ, Liow PS, Chan WK, **Shonkoff SB**, Andrews SP, Andrews JC, Rajan M, Howard V, Sytsma M, Earnshaw S, Anderson LWJ. 2005. Aquatic Pesticide Monitoring Program Non-Chemical Alternatives Year 3 Final Report. APMP Technical Report: SFEI Contribution 390. Oakland, CA.

Pearce S, McKee L, **Shonkoff SB**. 2005. Pinole Creek Watershed Sediment Source Assessment. Oakland, California. SFEI Contribution 316.

Greenfield BK, Wittner E, David N, **Shonkoff SB**, Davis JA. 2004. Monitoring Trace Organic Contamination in Delta Fish: Current Data and Future Steps. A report to the Central Valley Regional Water Quality Control Board. SFEI Contribution 99. Oakland CA.

Hayworth J, David N, **Shonkoff SB**. 2004. Phase 2 (2003) Bioassessment of Waterbodies Treated with Aquatic Pesticides. SFEI Contribution 117. Oakland, CA.

Pearce SA, McKee LJ, **Shonkoff SB**. 2004. San Pedro Creek Watershed Sediment Source Analysis, Volume III: Tributary sediment source assessment. A report prepared for the City of Pacifica, California. SFEI Contribution 87. Oakland, CA.

OPINIONS AND OTHER MEDIA PUBLISHED

Krieger E, Shonkoff SBC. August 26, 2015. Published in: *The Hill*, “Strong EPA methane rule required to fully realize Clean Power Plan benefits” http://thehill.com/blogs/congress-blog/energy-environment/251903-strong-epa-methane-rule-required-to-fully-realize#disqus_thread.

Shonkoff, SB. July 7, 2013, Published in: *Pittsburg Post Gazette*. Letter to the editor: “Shale Cherry Picking” <http://tinyurl.com/ktpom8c>

UNIVERSITY TEACHING EXPERIENCE

Environmental Science Senior Research Seminar; UC Berkeley (Fall 2010-Spring 2012)

Sociology of Natural Resources; UC Berkeley (Fall 2009)

Environmental Health and Development; UC Berkeley (Fall 2008)

COMMITTEES AND BOARDS SERVED

Expert Committee Member, Food Safety Expert Panel on Oil Field Produced Water for Agricultural Irrigation, California Central Valley Regional Water Quality Control Board (October 2015 – Present) Sacramento, CA

- Provide public health and oil and gas technical expertise and guidance on the issue of the use of oil field produced water for agricultural irrigation

Member of The Steering Committee, California Council on Science and Technology Study of Well Stimulation Technologies in California, Senate Bill 4 (SB 4) Study. (June 2014-July 2015) Sacramento, CA

- Provided public health and oil and gas development expertise and guidance to report authors at Lawrence Berkeley National Laboratory, The Pacific Institute, and Stanford University

Member of The Steering Committee, United States Climate-Health Alliance (January 2015 – Present) Oakland, CA

- Provide climate and public health expertise to the organization; engage public health experts in discussing the interplay between climate change and public health.

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Member of The Steering Committee, California Council on Science and Technology Study of Well Stimulation Technologies in California, Bureau of Land Management Study. (March 2013-July 2014) Sacramento, CA

- Provided public health and oil and gas development expertise and guidance to report authors; peer review of analysis and writing.

CONFERENCES ORGANIZED

Symposium on the Public Health Dimensions of Oil and Gas Development: Tools, Strategies, and Collaboration

- Occidental College, Los Angeles, CA January 21-22, 2016

Fracking and Health Symposium: Community-Based Monitoring

- George Washington University, Washington, D.C. October 1-2, 2014

Fracking and Health Research Workshop

- London School of Hygiene and Tropical Medicine (LSHTM) – London, UK, November 15, 2013

AWARDS

Grantee, Emerging Leaders Fund, The Claneil Foundation, Pennsylvania (April 2014-Present)

Outstanding Graduate Student Instructor Award, UC Berkeley (Fall 2012)

SELECTION OF INVITED LECTURES, WORKSHOPS AND TALKS

The Climate Change Mitigation-Air Quality-Human Health Nexus: Opportunities and Considerations

- Presented to The Carnegie Endowment for International Peace panel on “Climate, Air Pollution, and Public Health—Revisiting the Energy Innovation Agenda”. Washington, DC. – June 7, 2016.

The Effects of Oil and Gas on California’s Communities

- Panel, Sacramento, CA – April 18, 2016

The Water-Energy-Public Health Nexus: The Case of California Oil and Gas

- Presented to Environmental Health and Development Course, UC Berkeley, Berkeley, CA – April 5, 2016

Chemical Hazards and Risks of Beneficial Reuse of Oil Field Produced Water

- Presented at the American Chemical Society Annual Meeting, San Diego, CA – March 16, 2016

Water Quality and Public Health Risk Factors of Oil and Gas Development in California – An Update

- Presented to The San Francisco Estuary Institute, Richmond, CA – March 9, 2016

Public Health and Climate Risk Factors of Oil and Gas Development

- Presented to The Oil and Gas Citizen Monitoring Symposium, Occidental College, Los Angeles, CA – January 21, 2016

Air Pollution Monitoring of Oil and Gas Development in the United States (Panel Moderator)

- Panel at The Oil and Gas Citizen Monitoring Symposium, Occidental College, Los Angeles, CA – January 21, 2016

Public Health Considerations for Health Care Professionals

- Presented to The Occupational and Environmental Medicine Grand Rounds, University of California, San Francisco, San Francisco, CA – January 12, 2016

Public Health Findings From The Senate Bill 4 Independent Scientific Study

- Presented to Touro University School of Public Health, Vallejo, CA – November 19, 2015

Updates on Findings from Public Health Science: Oil and Gas Development

- Presented to Health and Environmental Funders Network, Baltimore, MD – November 16, 2015

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Climate And Public Health Findings From The Senate Bill 4 Independent Scientific Study

- Presented to the masters of public health core seminar, UC Berkeley. Berkeley, CA – November 9, 2015

Public Health Risk Factors Associated with Well Stimulation in California

- Presented to the Interagency Workgroup on Well Stimulation. Sacramento, CA – July, 2015

The Public Health Dimensions Of “Fracking” (And Other Oil And Gas Development) In California

- Presented to the American Lung Association in California. Sacramento, CA – February 6, 2015

The Environmental Public Health Dimensions of Shale Oil and Gas Development in the USA

- Keynote Talk at University of Calgary. Calgary, Canada – January 30, 2015

Oil and Gas Development and Agriculture in CA

- A panel discussion with the UC Berkeley Food Institute. Berkeley, CA – September 22, 2014

Fracking (and Oil and Gas Development) in California

- Presented to a public audience at the San Francisco Public Library. San Francisco, CA – July 23, 2014.

Environmental Policy Will Never Be the Same after “Fracking”

- Presented to *ESPM 175: Resources and Environmental Policy* course, UC Berkeley. Berkeley, CA – April 15, 2014.

The Environmental Public Health and Climate Dimensions of Oil and Gas Development Enabled by Well Stimulation in The USA

- Presented to *ESPM 167: Environmental Health and Development* course, UC Berkeley. Berkeley, CA – April 8, 2014.

Fracking and Environmental Equity

- Presented at the *Center for Race, Poverty, and Environment (CRPE) luncheon*. San Francisco, CA – March 6, 2014.

Oil and Gas Development: Climate, public health, Air and Water. What Do We Know?

- Presented to the *San Ramon Valley Democrats*. Danville, CA – February 27, 2014

The Public Health and Climate Dimensions of Shale Gas Development in the USA

- Presented to the *Fracking and Health: Research Workshop*. The London School of Hygiene and Tropical Medicine (LSHTM), London, UK – November 15, 2013.

You Don’t Get What You Expect, You Get What you Inspect: Methane, Energy Intensity, and Climate Dimensions of Shale Development

- Presented to the *Physicians for Social Responsibility Health Professionals Series*. Washington, DC – October 31, 2013

You Don’t Get What You Expect, You Get What you Inspect: Public Health, Climate Science, and Shale Development

- Presented to the *Health and Environmental Funders Network (HEFN)*, Washington, DC – October 31, 2013

What Does the Science Say? Shale Gas and Tight Oil Development

- Presented to the *Environmental Policy Graduate Seminar, UC Berkeley School of City and Regional Planning*, Berkeley, CA – October 15, 2013

Shale Gas and Tight Oil Development in California: Public Health and Climate Considerations

- Presented to the *California Department of Conservation* and the *Department of Gas and Geothermal Resources*, Sacramento, CA – May 1, 2013

Air Pollution, Water Quality, and Climate Change: The Case of Shale Gas and Tight Oil Development

- Presented to the *Global Public Health Core* course, UC Berkeley – April 24, 2013

Fracking in the News: Modern Energy Policy Analysis

- Presented to the *Energy and Resources Group*, UC Berkeley – April 23, 2013

Is Shale Gas a Sound Transition Fuel?

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- Presented to the *Climate and Health Course*, School of Public Health, UC Berkeley – April 18, 2013

The Public Health and Climate dimensions of Shale (Tight) oil and gas Development

- Presented to the *Environmental Health and Development* course, School of Public Health & The Dept. of Environmental Science, Policy, and Management, UC Berkeley – April 9, 2013

The Scientific Understanding of Shale (Tight) Oil and Gas Development: Implications for Policy in the US

- Presented to the *Environmental Policy, Administration and Law* course, UC Berkeley – March 12, 2013

Environmental and Public Health Impacts of Shale Oil and Gas Development

- Presented at the *Public Interest Environmental Law Conference (PIELC)*, University of Oregon School of Law – March 2, 2013

Public Health Dimensions of Hydraulic Fracturing

- Presented to the *Environmental Health Sciences Doctoral Seminar*, School of Public Health, UC Berkeley – February 25, 2013

The Public Health Dimensions of High Volume Horizontal Hydraulic Fracturing

- Presented to the Environmental Funders Meeting on Natural Gas, San Francisco, CA – October 25, 2012

Fracking with Our Air? The Health Concerns of Hydraulic Fracturing

- Presented to the *Department of Environmental Science, Policy and Management*, UC Berkeley – May 5, 2012

Identifying the Public Health Concerns of Hydraulic Fracturing: What we Know and How to Fill the Gaps

- Presented to *The Schmidt Family Foundation/ 11th Hour Project*, Palo Alto, CA – March 22, 2012

Climate Change and Human Health: Impacts and Opportunities

- Presented to *San Francisco State University*, San Francisco, CA – June 21, 2011

The Philosophy of Science

- Presented to the *Department of Environmental Science, Policy and Management*, UC Berkeley – Sept. 27, 2011.

Where Global Meets Local: Climate Change Mitigation Strategies and Population Health Co-Benefits

- Presented at the *Global Health: Breaking Borders and Boundaries* Conference, UC Davis – April 9, 2011.

Climate Change and Health: Direct and Indirect Health Effects

- Presented at the *Global Health: Breaking Borders and Boundaries* Conference, UC Davis– April 9, 2011.

Inconsistencies in Black Carbon Measurement: Implications for Climate and Health Policy Development

- Presented to the *Energy and Resources Group Climate Lab*, UC Berkeley – February 17, 2011.

Climate Change and Environmental Health Co-Benefits

- Presented to the *Department of Environmental Studies*, Skidmore College, Saratoga Springs, NY – Feb 17, 2011.

Interview and Survey Instrument Development and Study Design Workshop

- Presented to the *Department of Environmental Sciences*, UC Berkeley – November 15, 2010.

Quantitative Analysis for Survey Data

- Presented to the *Department of Environmental Sciences*, UC Berkeley – January 15, 2011

SELECTED INTERVIEWS, TELEVISION, RADIO AND OTHER PRESS

Grist, April 28, 2016 “Don't look now, but the oil industry miiiiight be poisoning your food” <http://grist.org/food/dont-look-now-oil-industry-poisoning-food/>

CBS Local SF Bay Area, April 28, 2016 “Some Central Valley Orchards Irrigated With Oilfield Waste Water” <http://sanfrancisco.cbslocal.com/2016/04/28/california-farmer-says-orchards-irrigated-oilfield-wastewater/>

Spotlight California, Winter 2016, “Water and Oil” <https://spotlightcalifornia.com/water-oil/>

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Washington Post, January 14, 2016, “An oversight: Calif. utility understated levels of cancer-causing chemical in L.A. gas leak” <https://www.washingtonpost.com/news/morning-mix/wp/2016/01/15/an-oversight-calif-utility-understated-levels-of-cancer-causing-chemical-in-l-a-gas-leak/>

Associated Press, January 14, 2016, “Utility understated levels of cancer-causing chemical” <http://bigstory.ap.org/article/08b5bcd284854f3282b8bd8ddbfa0f8d/utility-may-have-understated-health-threat-gas-leak>

The Guardian, January 11, 2016, “California gas company promises action to capture some of leaking methane” <http://www.theguardian.com/us-news/2016/jan/11/california-gas-company-socalgas-promises-action-to-capture-some-of-leaking-methane>

Circle of Blue, January 11, 2016, “California Water Board to Investigate Use of Oilfield Wastewater to Irrigate Crops” <http://www.circleofblue.org/waternews/2016/world/california-water-board-to-investigate-use-of-oilfield-wastewater-to-irrigate-crops/>

Al Jazeera America, January 4, 2016, “California gas disaster highlights patchwork of environmental laws” <http://america.aljazeera.com/articles/2016/1/5/california-gas-disaster-environmental-law.html>

Vice News, July 16, 2015, “CA Officials Green-light Offshore Fracking As Santa Barbara Beach Is Set to Reopen After Oil Spill” <https://news.vice.com/article/ca-officials-green-light-offshore-fracking-as-santa-barbara-beach-is-set-to-reopen-after-oil-spill>

Los Angeles Times, July 9, 2015, “Water and wildlife may be at risk from fracking's toxic chemicals, panel finds” <http://www.latimes.com/local/lanow/la-me-california-science-panel-warns-that-fracking-poses-unknown-risk-20150709-story.html>

The Guardian, May 2, 2015, “New report estimates enough natural gas is leaking to negate climate benefits” http://www.theguardian.com/environment/2015/jun/24/natural-gas-leaks-methane-environment?CMP=share_btn_tw

Los Angeles Times, May 2, 2015, “Central Valley's growing concern: Crops raised with oil field water” <http://www.latimes.com/local/california/la-me-drought-oil-water-20150503-story.html#page=1>

Newsweek, April 6, 2015, “In California, Farmers Rely on Oil Wastewater to Weather Drought” <http://www.newsweek.com/california-farmers-rely-oil-wastewater-weather-drought-319648>

Inside Climate News, January 13, 2014, “California's New Fracking Rules: Too Little, Too Early?” <http://insideclimatenews.org/news/20150113/californias-new-fracking-rules-too-little-too-early>

In These Times, November 19, 2014, “Fracking the Poor” http://inthesetimes.com/article/17355/fracking_the_poor

Al Jazeera, October 7, 2014, “Report: Fracking study changed after intervention by NY State officials” <http://america.aljazeera.com/articles/2014/10/7/report-ny-governorsaideseditedfrackingfindingsinfederalstudy.html>

Los Angeles Times, May 20, 2014, “U.S. officials cut estimate of recoverable Monterey Shale oil by 96%” <http://www.latimes.com/business/la-fi-oil-20140521-story.html>

The Economic Voice, April 19, 2014, “Is UK shale gas extraction posing a risk to public health?” <http://tinyurl.com/n42toxg>

Common Dreams, April 17, 2014, “Third Report in Three Days Shows Scale of Fracking Perils” <http://tinyurl.com/lbl7was>

Le Monde, April 17, 2014, “Gaz de schiste : quelles conséquences sanitaires?” <http://tinyurl.com/o2nc6n8>

The Information Daily, April 17, 2014, “Fracking risk to public health ignored, says doctor” <http://tinyurl.com/17415jl>

Science Codex, April 17, 2014, “Is UK shale gas extraction posing a risk to public health?” <http://tinyurl.com/mqnsbxk>

Al Jazeera, April 17, 2014, “Interview on British Medical Journal paper on the Public Health England shale gas report” with Harry Smith.

Grist, April 16, 2014, “Here's What Fracking Can Do to Your Health”, <http://tinyurl.com/kbdsswu>

Mother Jones, April 16, 2014, “Here's What Fracking Can Do to Your Health” <http://tinyurl.com/oxangvk>

ShaleReporter, February 8, 2014, Letter to the editor: “Sickened by fracking? Helping doctors decide” <http://tinyurl.com/monm2no>

EnergyWire, December 5, 2013, “Is California’s Monterey Shale a major oil resource or over-hyped?” <http://tinyurl.com/m6p4urq>

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Food Safety News, October 1, 2013, "As California Begins Regulating Fracking, Agricultural Concerns Arise"
<http://tinyurl.com/kv2fbch>

Legislative Gazette, September 23, 2013, "New fracking study, new controversy" <http://tinyurl.com/kqotcxt>

Scientific American, September 16, 2013, "Switching from coal to natural gas may be better for the climate than previously thought: new measurements see lower fugitive emissions from fracking" <http://tinyurl.com/p4dcpva>

The Hill, September 16, 2013, Study finds limited greenhouse gas emissions from fracking"
<http://tinyurl.com/kopam7x>

The Daily Californian, September 8, 2013, "Scientists find link between ozone, heart disease"
<http://tinyurl.com/kq7py7m>

Breakthroughs Magazine, Spring 2013, "Confronting The Climate Gap: Communities Of Color Feeling The Heat"
http://nature.berkeley.edu/breakthroughs/pdf/breakthroughs_sp13.pdf

Davis Media Access, Davis, CA, April 8, 2013: "Fracking in California"

EcoNews, "100 Leading Medical, Scientific Experts Urge Obama Administration to Halt Fracking for Exports"
<http://ecowatch.com/2012/12/17/halt-fracking-exports/>

New York Times Green Blog, December 13, 2012, "Doctors Urge U.S. to Block Gas Export Terminals"
<http://tinyurl.com/n5k9a9x>

ORGANIZATIONAL MEMBERSHIP

Member, American Chemical Society (2016 –Present) USA

Member, American Public Health Association (2015 –Present) USA

Co-Founder & Director, Berkeley Rural Energy Group (January 2010-May 2012) Berkeley, CA

- Directed a network of more than 40 NGO, private sector, and university experts in the San Francisco Bay Area, CA in activities, meetings, and projects focused on innovative solutions to rural energy and health access.

Advisor, The Center for Public Health and Climate Change, PHI (March 2010-Present) Oakland, CA

Member, American Geophysical Union (Sept 2006-Present) USA

Member, Science, Technology, and the Environment IDEA Lab, UC Berkeley (Sept 2007-May 2009) Berkeley, CA

OTHER RELEVANT EXPERIENCE AND SKILLS

Languages Spoken: English (fluent), Spanish (conversant)

International Work Experience: Ghana, Mali, Brazil, Costa Rica, Guatemala, Nicaragua, Ecuador, and The United Kingdom.