



# Northeastern University

*Social Science Environmental Health  
Research Institute*



Linda Birnbaum (left), Director of the National Institute of Environmental Health Sciences (NIEHS) poses for a photo with SSEHRI students Stephanie Clark (second from left) and Lourdes Vera (center) after a presentation at Northeastern on July 18, 2016.

## SSEHRI 4th Annual Report

September  
2016

### Our Mission

The mission of the Social Science Environmental Health Research Institute (SSEHRI) is to conduct social science-oriented research, teaching, community engagement, and policy work in the area of environmental health. With 4 core faculty, affiliated faculty at Northeastern and other area universities, 2 postdocs, 14 graduate students, and 2 undergraduates, SSEHRI is a hub for collaborative environmental health learning and interest at NU. The Institute trains graduate students and postdocs for community based participatory research aimed at transforming and improving environmental health. At the same time, it provides faculty with a resource to further their existing efforts in those approaches. Integrating environmental health science, sociology, science and

technology studies, and community organizations, SSEHRI aims to develop novel approaches to studying environmental health questions, communication of environmental health data and conceptualization of environmental health socially, politically, and scientifically. SSEHRI has multiple grants from NIEHS, EPA, NIH, NSF, and the JPB Foundation.

### Highlights from Our 4th Year

In 2015-2016 SSEHRI welcomed 6 new members: Sharon Harlan, Professor of Health Sciences and Sociology and SSEHRI Core Faculty Member; Vanessa De La Rosa, Postdoctoral Researcher; Mariana Sarango, Population Health PhD Student; Nickolas Fayn-





Lauren Contorno (right) receives her award at SSSP, August 2016.

shiteyn, Sociology MA Student; Nicholas Chaves and Yvette Niwa, Environmental Studies and International Affairs BA Students and PFAS Co-ops. We also bid a fond farewell to our first graduates:

J. Matthew Judge completed his PhD in Sociology in

December 2015 with the successful defense of his dissertation, "Identification, Understanding, and Response: Exploring the Exposure Experience." Jamie San Andres completed her MA in Sociology in 2016. We wish them the best of luck in all their future endeavors!

SSEHRI co-sponsored numerous events this past year at Northeastern and around the Boston area. The Reproductive Health and the Environment Symposium in December 2015 and the Greater Boston Women of Color Environmental Health Conference in April 2016 were both put on by the Resilient Sisterhood Project, a largely African-American organization that provides public education about endocrine disrupting chemicals (EDCs) and environmental health. In March 2016 we once again co-sponsored the Local Environmental Action Conference, New England's largest environmental conference, which this year featured a panel of SSEHRI faculty and students on "PFOA and Other Perfluorinated Compounds: Community Organizing Around an Emerging Contaminant."

Postdoc Bridget Hanna attended two very interesting conferences over the summer, a weeklong confer-

ence/course on "exposomics" at Emory University and the ICBO-BioCreative Conference in Corvallis, Oregon a conference on building reality based ontological languages to describe biomedical and

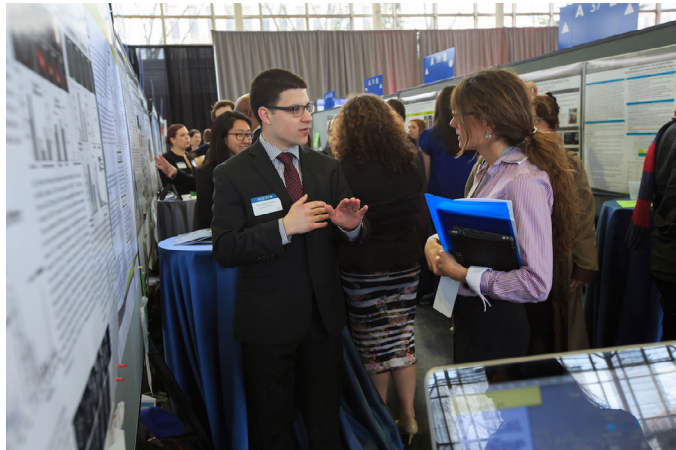
## SSEHRI Members

Marina Atlas (Health Sciences MPH Student)  
Phil Brown (Professor of Sociology and Health Sciences)  
Nicholas Chaves (Environmental Studies and International Affairs BA Student)  
Stephanie Clark (Sociology PhD Student)  
Lauren Contorno (Sociology PhD Student)  
Elicia Cousins (Sociology PhD Student)  
Tibrine Da Fonseca (Sociology PhD Student)  
Vanessa De La Rosa (Postdoctoral Research Associate)  
Nickolas Faynshteyn (Sociology MA Student)  
Bridget Hanna (Postdoctoral Research Associate)  
Sharon Harlan (Professor of Health Sciences and Sociology)  
Stephanie Knutson (Administrative Assistant)  
Rachael Lee (Sociology PhD Student)  
Yvette Niwa (Environmental Studies and International Affairs BA Student)  
Jennifer Ohayon (Postdoctoral Research Associate)  
Mia Renauld (Sociology PhD Student)  
Lauren Richter (Sociology PhD Student)  
Ron Sandler (Professor of Philosophy and Religious Studies)  
Mariana Sarango (Population Health PhD Student)  
Laura Senier (Assistant Professor of Sociology and Health Sciences)  
Sara Shostak (Associate Professor of Sociology - Brandeis University)  
Boris Templeton (Sociology PhD Student)  
Nancy Toure (Sociology MA Student)  
Christine Vatovec (Assistant Professor of Environment and Natural Resources and Medicine - University of Vermont)  
Lourdes Vera (Sociology PhD Student)  
Elisabeth Wilder (Sociology PhD Student)  
Sara Wylie (Assistant Professor of Sociology/ Anthropology and Health Sciences)



environmental phenomena. Sara Wylie collaborated with Mare Liberum a Brooklyn based performance art collective, Northeastern's undergraduate Environmental organization, and MIT engineer Laura Perovich to test and further develop new ways of visualizing water contamination in real-time.

Three of our members won awards this year. Elicia Cousins received an Asian Studies Research Award through the Center for International Affairs and World Cultures. She used the funds this summer to



Nick Chaves presents at RISE:2016.

pursue research on activism in Japan that aims to support children still living in contaminated regions of Fukushima prefecture. Laura Senier received a Faculty Mentorship Award from the Graduate Society of the Department of Sociology & Anthropology at Northeastern. Lauren Contorno is the winner of the Brent K. Marshall Graduate Student Paper Award of the Environment and Technology Division of the Society for the Study of Social Problems for her paper "Turtles & Teamsters Revival? Analyzing Labor Unions' Environmental Discourse from the 2014 People's Climate March."

Other notable accomplishments include Phil Brown testifying at a Boston City Council hearing on flame retardants; Nick Chaves presenting a poster entitled "Perfluorinated Chemicals: The Social Discovery of an Emerging Contaminant" at RISE:2016, the annual Northeastern student research expo; and Lauren Richter's invitation to serve on the Student Editorial

Board of the journal Social Problems.

## SSEHRI's Primary Projects

***Barriers in Translating Genomic Research into State Public Health Programs*** (National Human Genome Research Institute, PI – Laura Senier) – Research has produced a remarkable amount of public health knowledge in recent years, but a significant gap remains in the application of such knowledge in everyday settings and communities. This is especially true in the area of genomics research. Dr. Senier's NHGRI supported research is a multi-year, qualitative comparative case study aimed at understanding the role that state health agencies play in translating genomics discoveries to public health and policy applications that promote population health in an ethical, equitable, and cost-effective manner. In the past year, Dr. Senier and her team of graduate students have wrapped up data collection in one state and have continued to conduct interviews with stakeholders and policy experts and observations of public health agency activities in the other three states included in the study. They have also been working on two separate articles based on their findings. In the past year, Dr. Senier was also invited to participate on an Institute of Medicine action collaborative convened to help integrate genomics in existing population health programs.

***JPB Environmental Health Fellowship*** (Harvard School of Public Health, PI – Sara Wylie) – Following the previous year's research in Texas and Montana, Sara Wylie's research group worked with residents near oil and gas production sites this past summer to conduct two comprehensive three-week tests monitoring hydrogen sulfide ( $H_2S$ ) emissions in Montana and Washington State. The inexpensive, Do-it-Yourself  $H_2S$  sensor consists of a photopaper strip covered by silver gelatin (used in black and white photography) that darkens when exposed to  $H_2S$ , placed inside a film canister that prevents sunlight from reaching the light-sensitive paper. At less than \$1 per canister, this community-oriented



method offers a visual representation of low dose, long term H<sub>2</sub>S exposure that can be mapped to pinpoint potential sources of the toxic gas and reveal where it is most intense in a given region. Wylie's interdisciplinary team currently consists of Sociology PhD student Lourdes Vera, community organizer Deb Thomas from ShaleTest, postdoctoral fellow and exposure scientist Drew Michanowicz from the Harvard School of Public Health, and Northeastern University undergraduates Shawn Sullivan '19 (Architecture) and Sarah Brooks '19 (International Relations/Environmental Studies) that develop and scientifically validate this community-based method. They plan to continue monitoring in Montana and expand the project into New Mexico.

***Perfluorinated Chemicals: The Social Discovery of a Class of Emerging Contaminants*** (NSF, PI – Phil Brown) - Per- and polyfluoroalkyl substances (or PFAS) have been characterized by environmental health advocates as “the big tobacco of chemicals.” Their story is one of large-scale corporate cover-up, with significant population-wide exposure, and

decades of litigation. Since the summer of 2015 a group of SSEHRI students have been working under Dr. Brown and his former student Dr. Alissa Cordner on their National Science Foundation grant, The Social Discovery of Per- and Polyfluorinated Chemicals. Our group at Northeastern has included three PhD students (Lauren Richter, Elicia Cousins and Tibrine Da Fonseca), two Co-op students (Nicholas Chaves and Yvette Niwa), one nursing student (Katherine Stewart-Schor), and one undergraduate volunteer (Matthew Kim). Over the past year our research team has investigated the surprising emergence of lay awareness, government involvement, media coverage, litigation, and advocacy. While the body of published literature on PFASs is significant, it was not until the more recent lay discovery of PFOA contaminated water in Hoosick Falls, NY that a rapid succession of social discoveries of water contamination has spread throughout New England and now across military sites across the U.S. Our group is collaborating with Toxic Action Center, Silent Spring Institute, and the Green Science Policy Institute to track state, industry, and community re-

## Select SSEHRI Presentations 2015-2016

- **Stephanie Clark** - *School-based Exposure to Hazardous Air Pollutants and Grade Point Average: A Multi-level Study* at ASA Annual Meeting. Seattle, WA. August 2016.
- **Elicia Cousins, Lauren Richter, Alissa Cordner and Phil Brown** - *Risky Business? Manufacturer and Retailer Action to Remove Per- and Polyfluorinated Chemicals from Consumer Products* at ASA Annual Meeting. Seattle, WA. August 2016.
- **Lauren Contorno** - *Framing Climate Change: A Comparative Analysis of Labor Unions' Environmental Discourse* at Eastern Sociological Society Annual Meeting. Boston, MA. March 2016.
- **Sharon Harlan** - *Panel on Global Climate Change: The Role of Sociology* at SSSP Annual Meeting. Seattle, WA. August 2016.
- **Jennie Ohayon** - *New Approaches for Understanding and Responding to Environmental Health Threats* at a joint session of the American Association of Geographers and International Society on Urban Health. San Francisco, CA. March-April 2016.
- **Mia Renauld** - *Bridging the Gap: Investigating Environmental Social Problems with Interdisciplinary Research Teams* at SSSP Annual Meeting. Seattle, WA. August 2016.
- **Lauren Richter, Alissa Cordner, Phil Brown, Nick Chaves and Matthew Kim** - *PFOA and Other Perfluorinated Compounds: Community Organizing Around an Emerging Contaminant* at Toxics Action Center Local Environmental Action Annual Conference. Boston, MA. March 2016.
- **Laura Senier, Rachael Lee, Lauren Nicoll, Michael Shields, Danielle Falzon, Boris Templeton** - *Negotiating the Evidentiary Turn in Public Health: Integrating Genomics into a State Health Agency's Mission* at ASA Annual Meeting. Seattle, WA. August 2016.
- **Sara Shostak** - *From Food Access to Food Justice: A Case Study of the Somerville Mobile Farmers' Market* at ASA Annual Meeting. Seattle, WA. August 2016.
- **Elisabeth Wilder** - *“Game Over” for the Climate: The Keystone XL Pipeline on TV News* at ASA and SSSP Annual Meetings. Seattle, WA. August 2016.



sponses to PFAS water contamination. Additionally, we are interviewing communities throughout New England dealing with this water contamination, and facilitating communication across communities and between lay people and environmental health scientists. Lauren Richter is currently working in Washington D.C. at the Environmental Protection Agency Headquarters, conducting interviews with staff and assisting with summarizing data on the human health risks of PFAS exposure.

***Research Experience for Undergraduates: Per-fluorinated Chemicals: The Social Discovery of a Class of Emerging Contaminants*** (NSF, PI - Phil Brown) - This REU proposal will fund two undergraduate students per year on the PFAS project, one for a 6-month co-op (Northeastern University's well-known program that provides experiential learning), and one student as a part-time RA, most likely following their successful work on a co-op.

***Social Equity and Environmental Justice in Urban Water Systems (Supplement to Sustainability Research Network, Urban Water Innovation Network (UWIN): Transitioning Toward Sustainable Urban Water Systems)*** (NSF, Northeastern PI – Sharon Harlan) - The Urban Water Innovation Network (UWIN) is a collaborative partnership among 18 institutions, led by Colorado State University, that is investigating pressures on water systems in six regional U.S. hubs, engaging stakeholders in assessing the broad impacts and tradeoffs associated with sustainable solutions for future water, and developing indicators to measure change and improvements in water management. Sharon Harlan co-directs the UWIN Social Equity and Environmental Justice (SEEJ) team with Elizabeth Mack at Michigan State University. They are working on several projects with other institutions, including the design for a household survey and building a database of urban water environmental justice cases, in order to ensure that SEEJ concerns are a high profile in all aspects of UWIN. Participation in stakeholder meetings is being sought from marginalized populations that typically do not have voices in the municipal water

decision-making process. Sociology PhD student Stephanie Clark and Population Health PhD student Mariana Sarango are collaborating on the project.

***Transdisciplinary Training at the Intersection of Environmental Health and Social Science*** (NIEHS

T32, PI – Phil Brown) – In its first year, this training grant supported two predoctoral and one postdoctoral trainee. Elicia Cousins and Stephanie Clark joined

SSEHRI as T32 trainees and first year PhD students in the fall of 2015. Elicia jumped into an ongoing research project led by Professor Phil Brown tracing the social and scientific discovery of perfluorinated substances (PFASs), while Stephanie's funding gave her the opportunity to continue working on previous research projects, and she also became involved in multiple other projects over the course of the year. Elicia and Stephanie spent the first half of their summer working with Silent Spring Institute researchers and postdocs on two projects: examining the role of corporations and the funding of breast cancer research and a project related to the ethics of reporting individual biomonitoring and personal exposure results to study participants. Elicia spent the latter half of her summer in Japan leading and volunteering for outdoor evacuation retreats for children from Fukushima, and interviewing other retreat leaders about their experiences and concerns, while Stephanie worked with Professor Sharon Harlan on her Urban Water Innovation Network (UWIN) project. Vanessa De La Rosa, who started as a postdoc in June 2016, has been working with Silent Spring Institute to develop projects at the nexus of toxicology and community-based research to investigate environmental chemical exposures and breast cancer.



Recent graduate Lauren Nicoll (left) presents Laura Senier with her Faculty Mentorship Award, May 2016.



Currently she is employing new genomic technologies in cell culture models to understand how chemicals impact biological processes in mammary gland development. She will be working with SSEHRI faculty during this upcoming year to develop projects related to perfluorinated chemical exposure in the New England region and endocrine disrupting chemical exposure among young girls in Chile.

## Other SSEHRI Grants

### ***Center for Research on Early Childhood Exposure and Development in Puerto Rico*** (NIEHS and EPA)

- This multi project program builds on the PROTECT cohort, following 600 children born to PROTECT mothers, examining environmental chemicals and neurological outcomes, as well as asthma and other respiratory conditions resulting from air pollution. Phil Brown is Co-Director of the Community Outreach and Translation Core.

***Data Sharing and Privacy Protection in Digital-Age Environmental Health Studies*** (NIH, Co-PI – Phil Brown) – Evaluates privacy risks and develops solutions for environmental health studies through optimizing procedures to redact or mask data to improve privacy while retaining scientific utility for data sharing.

### ***Ethical and Legal Challenges in Communicating Individual Biomonitoring and Personal Exposure Results to Study Participants: Guidance for Researchers and Institutional Review Boards***

(NIEHS, Co-PI – Phil Brown) - Examines the experiences, values, and attitudes of participants in personal exposure assessment studies, as well as the perspectives of IRB members, researchers, clinicians, and legal experts.

### ***Virtual Consortium for***



Elicia Cousins asks a question at the Reproductive Health and the Environment Symposium, December 11, 2015.

***Translational/Transdisciplinary Environmental Research - Ethical and Legal Challenges in Communicating Individual Biomonitoring and Personal Exposure Results to Study Participants: Guidance for Researchers and Institutional Review Boards*** (NIEHS, Co-PI – Phil Brown) – Extends the biomonitoring ethics project to include healthy homes interventions and to develop computerized approaches to report back data in large biomonitoring program.

### ***Hazards SEES Enhancing Emergency Preparedness for Critical Infrastructure Failure During Extreme Heat Events*** (NSF, Co-I – Sharon Harlan)

- This project is assessing the human, environmental, and technological impacts of concurrent heat wave and electrical grid failure (blackout) events in Atlanta, GA, Detroit, MI, and Phoenix, AZ.

***Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) Program (NIEHS Superfund Research Program)*** (NIEHS) - Investigates preterm births in communities surrounding toxic waste and Superfund sites in Puerto Rico. Phil Brown is part of the Community Engagement Core and Research Translation Core of this multi-project, multi-institution collaboration.

### ***Research Opportunities for Undergraduates: Training in Environmental Health Science (ROUTES)*** (NIEHS)

- The ROUTES program is developed to increase the number of undergraduate underrepresented minority (URM) students participating in the environmental health (EH) research, training them in interdisciplinary settings and continuing onto graduate studies and lifelong EH research careers. ROUTES engages and prepares URM students for EH research careers through hands-on research experience, research community engagement, training, mentoring, and support. Phil Brown is a Faculty Mentor. Two ROUTES students are part of the research team on “Poly- and Perfluorinated Chemicals: The Social Discovery of a Class of Emerging Contaminants.”



## SSEHRI Publications 2015-2016

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- **J. Matthew Judge, Phil Brown**, Julia Green Brody, Serena Ryan. 2016. "The Exposure Experience: Ohio River Valley Residents Respond to Local Perfluorooctanoic Acid (PFOA) Contamination." *Journal of Health and Social Behavior* 57(3) 333-350.
- Li, X., W. Li, A. Middel, **Sharon L. Harlan**, A.J. Brazel, B.L. Turner II. 2016. "Remote Sensing of the Surface Urban Heat Island and Land Architecture in Phoenix, Arizona: Combined Effects of Land Composition and Configuration and Cadastral-Demographic-Economic Factors." *Remote Sensing of Environment* 174: 233-243.
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- Quigley, Dianne, David Sonnenfeld, **Phil Brown**, Linda Silka, Linlang He, and Qing Tian. 2015. "Research ethics training on place-based communities and cultural groups." *Journal of Environmental Studies and Sciences* 1-11.
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- **Sandler, Ronald**. 2015. *Food Ethics: The Basics* (Oxford, UK: Routledge).
- **Senier, Laura**, and **Boris Templeton**. 2015. "Organizing for Community Health: The Potential for Community Health Centers to Foster Cross-Movement Coalitions." *Mobilizing Ideas* (blog for the American Sociological Association's Section on Collective Behavior and Social Movements. Available at: <https://mobilizingideas.wordpress.com/>).
- **Senier, Laura**, Michael Shields, **Rachael Lee**, Lauren Nicoll, **Danielle Falzon**, and Elyssa Wiecek. 2015. "Community-based family health history education: The role of state health agencies in engaging medically underserved populations in understanding genomics and risk of chronic disease." *Healthcare: The Journal of Delivery Science and Innovation* 3(4): 995-1017.
- Smith, V.K., **Sharon L. Harlan**, M. McLaen, J. Fishman, C. Valcarcel, M.L. Nation. In press. "Using Household Surveys to Implement Field Experiments: The Willingness to Donate to Foodbanks." *Applied Economic Letters*. DOI 10.1080/13504851.2015.1125423.
- Vallas, Steven, **J. Matthew Judge**, and Emily Cummins. 2015. "Worker's Rights as Human Rights? Solidarity Campaigns and the Anti-Sweatshop Movement." In: Walker, E., Lee, C., and McQuarrie, M. (ed) *Democratizing Inequalities*. New York: New York University Press.
- **Vatovec, Christine**. 2016. "Making Biodiversity Stewardship Tangible using a Place-based Approach." In: Byrne L (ed.) *Learner-centered Teaching Activities for Environmental and Sustainability Studies*. Springer.
- **Wylie, Sara**. 2015. "Securing the Natural Gas Boom: The Role of Science, the Academy and Regulatory Capture in the Exemption of Hydraulic Fracturing from Regulatory Oversight." In Hannah Appel, Arthur Mason and Michael Watts (eds.) *Subterranean Estates: Life Worlds of Oil and Gas*. Cornell University Press.
- **Wylie, Sara**. Forthcoming. *Corporate Bodies and Chemical Bonds: Transforming Energy and Health Futures through "Civic" Scientific and Social Scientific Study of Shale Gas Extraction*. Duke University Press's Experimental Futures series.
- **Wylie, Sara, Elisabeth Wilder**, Deborah Thomas and **Lourdes Vera**. "Materializing exposure: Engaging STS research to visualize environmental health hazards of oil and gas extraction." Forthcoming in *Engaging Science, Technology and Society*.
- Zarate, Oscar, Julia Green Brody, **Phil Brown**, Monica Ramirez-Andreotta, Laura Perovich, and **Jacob Matz**. 2016. "Balancing Benefits and Risks of Immortal Data: Participants' Views of Open Consent in the Personal Genome Project." *Hastings Center Report*. 46(1):36-45.





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[www.northeastern.edu/environmentalhealth](http://www.northeastern.edu/environmentalhealth)

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