NSF SES Project, Proposal 1535888

September 1 , 2015 - August 31, 2017

Award 1535888. Award Date: August 25, 2015.

**TITLE**

Environmental Health Governance in Six Cities: How Scientific Cultures, Practices and Infrastructure Shape Governance Styles

**RESEACH TEAM**

PI Kim Fortun is a cultural anthropologist and Professor of Science & Technology Studies at Rensselaer Polytechnic Institute. Co-PI Mike Fortun is a historian and ethnographer of science and Associate Professor of Science & Technology Studies at Rensselaer.  Sam Elrahman, lead collaborator for New York City, is a Senior Research Scholar at the Center for Infrastructure, Transportation, and Environment at Rensselaer. Govind Gopakumar, lead collaborator for Bengaluru (Bangalore), India, is an Associate Professor at the Centre for Engineering in Society, Concordia University, Montreal. Scott Kellogg, lead collaborator for Albany, is a STS PhD candidate at Rensselaer and Educational Director at the Radix Ecological Sustainability Center in Albany. Alison Kenner, lead collaborator for Philadelphia, is an Assistant Professor of History and Politics at Drexel University. Dan Price, lead collaborator in Houston, is a philosopher and a faculty member in the Honors College at the University of Houston, the director of Data Analytics in Student Hands (DASH) at UH, and the director of The Houston Clean Air Network (HCAN). Rodolfo Hernandez, lead collaborator for Beijing, China, is a PhD candidate in the Institute of Science, Technology, and Society at Tsinghua University (China), and visiting researcher at Rensselaer Polytechnic Institute August 2015 through August 2016.

**SUMMARY**

The aim of this project is to advance understanding of different ways scientific capacity is developed and used in governance, examining how environmental health research and governance has developed in six cities (four in the United States and two in Asia). Extending on-going work since 2008 through The Asthma Files project, this project will focus on efforts to understand and address the health effects of long term exposure to transportation-related air pollution. In each city studied, project researchers will examine the operation and use of science in four arenas of governance (environment, health, transportation and education), and how these different arenas interrelate. They will map the sources of scientific evidence used in governance, how these sources are evaluated, and translated into policy and programming. They will also document and analyze the scientific infrastructures that produced the findings used in governance, the diversity of stakeholders involved in interpreting scientific findings, and diverse cultural logics that shape the creation and use of scientific knowledge in different settings. Ethnographic interviews will be the primary means of data collection, supplemented by analyses of scientific publications, policy debates, and media coverage. The cities to be studied are Albany, New York City, Philadelphia, Houston, Beijing, and Bengalura. In each city, there is a collaborating researcher with deep experience and prior research in the city. The digital platform built for The Asthma Files project will support collaboration among researchers involved in the project, and the involvement of student researchers. In each city, there will be a field school to teach the project’s methods to students, and to enroll them in the on-going effort to advance effective development and use of science in governance. Methodologically, the project will model and advance understanding of collaborative research in the social studies of science.

**Intellectual Merit:** The project will result in a theoretically robust, empirically grounded conception of (environmental health) research and governance styles, detailing and categorizing different ways of developing environmental health data, advancing the sciences of environment and health, and directing

these toward governance of complex problems. The project will extend theorization of governance

by addressing how scientific cultures, practices, and infrastructure shape governance processes

and outcomes. The project will also test and stabilize the process and cyberinfrastructure

needed to support collaborative research in the social studies of science.

**Broader Impacts:** Project results will have wide implications in efforts to improve collaboration between governance regimes (across scale, and between nations); such collaboration is particularly important

in addressing complex, often transboundary problems like air pollution, which call for new levels of cooperation and sharing of technology, data, and effective policy design. In the final stage of the project, recommendations resulting from the project will be actively disseminated.

**Human Subjects Dimension:** Empirical material for this study will be collected through approximately 150 qualitative interviews (approximately one hour in length) with scientists, policymakers and others involved in environmental health policy making in the six cities focused on in the study (Albany, New York City, Philadelphia, Houston, Beijing, and Bengalura). Most interviews will be conducted face-to-face, either at the interviewee’s home organization, or at meetings or conferences that we will attend.

The project will provide opportunities for students to be involved in anthropological research, learning the techniques of qualitative interviewing and socio-cultural analysis.

When supporting consent is received, interviews collected for this project will be archived online, in a manner designed for public access and use by the scholarly community. Interview material will also be used in analyses published as working papers, journal articles and books.

The research web platform established for this project (http://theasthmafiles.org/) will follow the lead of established projects in the oral history of environmental science and politics. The Natural Histories Project, for example, delivers a set of interviews with working naturalists of many kinds, “focused on the future of natural history [in] four broad areas: society, education, environmental research and environmental management” (<http://histories.naturalhistorynetwork.org/>).)

Interviews collected for this project will be used to document and analyze the perspectives of differently positioned stakeholders in environmental health governance in different cities. When supporting consent is received, interviews will be archived online, in a manner designed for public access and use by the scholarly community. Interview material will also be used in analyses published as working papers, journal articles and books.

**Cyberinfrastructure:** This project utilizes the cyberinfrastructure built for The Asthma Files, consisting of an open source (Drupal) content management system (CMS) customized for ethnographic researchers. The Asthma Files is an instance of the Platform for Experimental and Collaborative Ethnography (PECE; world-pece.org), also built and maintained at Rensselaer. PECE allows researchers to archive and annotate artifacts of many kinds (documents, photographs, audio and video recordings) and provides tools for collaborative analysis and presentation. PECE is currently being updated to reflect best-practice research data management as recommended by the Research Data Alliance’s Practical Policies Working Group.