BIOGRAPHICAL SKETCH

NAME: Sara Elizabeth Grineski

eRA COMMONS USER NAME (credential, e.g., agency login): SGRINESKI

POSITION TITLE: Professor of Sociology

EDUCATION/TRAINING

| INSTITUTION AND LOCATION | DEGREE | Completion Date | FIELD OF STUDY |
| --- | --- | --- | --- |
| Concordia College, Moorhead, MN USA | B.A. | 05/2001 | Sociology, Biology |
| Arizona State University, Tempe AZ USA | M.A. | 05/2003 | Sociology |
| Arizona State University, Tempe AZ USA | Ph.D. | 05/2006 | Sociology, Geography minor |

**A. Personal Statement**

**I am well-suited to the role of PI on this project. I have extensive experience in the topical research area of the proposed project (i.e., the effects of pollution on health and development) as evidenced by my published work and previous research grants, and in the area of grants management. I served as a one of the multiple PIs on a $23 million dollar NIH BUILD research training grant. I have a long track record of collaboration with the second PI (Collins), which has resulted in numerous publications (i.e., 52 with Collins). My doctoral training in an interdisciplinary environment and my current collaborations with scholars from diverse disciplines (e.g., engineering, math, health sciences, medicine) have prepared me well for this project, which integrates the socio-behavioral and biomedical sciences. I am an experienced mentor of graduate and undergraduate students, having mentored over 60 research students over 11 years at UTEP, making me well-prepared to oversee the students whom this award will support. These students will be from groups traditionally underrepresented in science and we will recruit students into the positions who have an interest in pursuing an academic path. We will also integrate one or more undergraduate students into the project. Specifically related to the proposed project, Collins and I, along with our undergraduate and then Master’s research assistant (Stephanie Clark-Reyna), have recently published four articles (listed below and described in more detail in the proposal), which specifically lay the groundwork for this proposal. These articles have used similar methods (although less sophisticated versions of them than what we propose in this grant) and similar types of data. In addition to those studies, many of my other studies have also prepared me to conduct this work, as they have been conceptually and methodologically related to the proposed project.**

1. Clark-Reyna, S, **Grineski, SE**, Collins, T. 2016. Ambient concentrations of metabolic disrupting chemicals and children’s academic achievement in El Paso, Texas. *International Journal of Environmental Research and Public Health*. 13(9): E874. (PMID: 27598179)
2. Clark-Reyna, S, **Grineski, SE**, Collins, T. 2016. Health status and residential exposure to air toxics: What are the effects on children’s academic achievement? *Family & Community Health* 39(3): 160-8. (PMID: 27214671)
3. **Grineski, SE**, Clark-Reyna, S, Collins, T. 2016. School-based exposure to hazardous air pollutants and grade point average: a multi-level study. *Environmental Research*. 147: 164-171. (PMID: 26875067)
4. Clark-Reyna, S., **Grineski, SE**, Collins, T. 2016. Residential exposure to air toxics is linked to lower grade point averages among school children in El Paso, Texas, USA. *Population and Environment.* 37(3): 319-340. (PMID: 27034529)

**B. Positions and Honors**

**Positions and Employment**

* 8/2006-6/2011. Assistant Professor of Sociology, Department of Sociology and Anthropology, University of Texas at El Paso, El Paso, TX.
* 7/2011-8/2015. Associate Professor of Sociology, Department of Sociology and Anthropology, University of Texas at El Paso, El Paso, TX.
* 9/2015-12/2017. Professor of Sociology, Department of Sociology and Anthropology, University of Texas at El Paso, El Paso, TX.
* 1/1/2018-present. Professor of Sociology and Environmental Studies, University of Utah, Salt Lake City, UT
* 9/2011-2014. Director. Environment Core of the Hispanic Health Disparities Research Center, a NIMHD-EPA Center of Excellence in Environmental Health Disparities. University of Texas at El Paso & University of Houston School of Public Health. El Paso, TX.
* 6/2014-12/2017. Director (with Dr. Homer Nazeran). Research Enrichment Core of the NIH BUILDing SCHOLARS Center. NIH Diversity Program Consortium. University of Texas at El Paso, TX.
* 9/2016-12/2017. Director. Sociology Graduate Program. University of Texas at El Paso, TX.

**Other Experiences and Professional Memberships**

* 2001-2006. Doctoral Fellow in the Integrative Graduate Education and Research Traineeship (IGERT) program in Urban Ecology funded by the National Science Foundation.
* 2007-present. Undergraduate Research Mentor. Mentored 25 students on research projects.
* 2008-present. Thesis Supervisor. Sociology Master’s Program. Chaired 15 committees (also served on 15 committees).
* 2013-2015. Graduate Committee Member, Department of Sociology and Anthropology, University of Texas at El Paso, El Paso, TX.
* 2014-present. Executive Committee Member. BUILDing SCHOLARS. UTEP and NIH Diversity Program Consortium.
* 2014-present. Member. Border Biomedical Research Center, UTEP.
* 2015-present. Faculty Liaison. *Familias Unidas de Chamizal*. Environmental Justice community group in El Paso, TX.
* 2015-present. Coordinator. For a summer research program placing over 100 undergraduate students with faculty mentors across 13 research institutions, including UTEP, as part of BUILDing SCHOLARS.
* 2016-present. Environmental Justice Advisory Board Member. Union of Concerned Scientists.
* 2001-present. Member. American Sociological Association, American Association of Geographers.

**Honors**

* 2003. National Science Foundation International Research Experience through Arizona State University’s IGERT Program to conduct research on urban parks at CSIRO (Commonwealth Science, Industry and Research Organization), Canberra, Australia.
* 2008-2009. UTEP Research and Sponsored Projects Outstanding Performance Award “For Outstanding, Performance in Securing External Funding”.
* 2009-2010. Fellow in the “Enabling the Next Generation of Hazards and Disasters Researchers”. Program through the National Science Foundation. One of 16 fellows selected out of 64 applicants.
* 2016. Outstanding Faculty Award, College of Liberal Arts, UTEP.

**C. Contributions to Science**

**\*\*\*denotes undergraduate student author, \*\*graduate student author, and \*post-doctoral author**

1. **Incorporating Health Outcomes into Environmental Justice**: Environmental justice (EJ) research centers on concerns over the societal distribution of environmental risks and hazards. Quantitative studies have shown that minority and lower income neighborhoods tend to suffer from unequal distribution of hazards across the US. Independent of EJ research, social scientists have demonstrated sociospatial disparities in adverse health outcomes, with minority and lower income areas experiencing higher rates of morbidity and mortality. Evidence suggests that disproportionate exposure to environmental hazards might be an important cause of disparities in health outcomes, but this question has been left largely unaddressed. Although much EJ research tacitly assumes that unequal environmental exposures produce disparate health impacts, very few EJ studies have tested that assumption. My research has contributed to this project of bringing health data into EJ studies. These publications show that environmental injustices are contributing to health disparities, but that the associations are complex and at times unexpected.
   1. **Grineski, SE**. 2007. Incorporating Health Outcomes into Environmental Justice Research: The case of children's asthma and air pollution in Phoenix, Arizona. *Environmental Hazards.* 7(4): 360-371.
   2. **Grineski, SE**, Chakraborty, J, Collins, TW, \*\*McDonald, YJ. 2013. Environmental Health Justice: Exposure to Air Toxics and Children’s Respiratory Hospital Admissions. *The Professional Geographer.* 65 (1): 31-46.
   3. **Grineski, SE**, Collins, T, Olvera, H. 2015. Local Variability in the Impacts of Residential Particulate Matter and Pest Exposure on Children’s Wheezing Severity: A Geographically Weighted Regression Analysis of Environmental Health Justice. *Population and Environment.* 37(1): 22-43. (PMID: 26527848)
   4. \*\*McDonald, Y, **Grineski, SE**, Collins TW, \*\*Kim, YA. 2015. A scalable climate health justice assessment model. *Social Science and Medicine*. 133: 242-252. (PMID: 25459205)
2. **Intra-ethnic Inequalities: Within the fields of health disparities and to a greater degree within environmental justice, there has been a tendency to reply on** traditional categorizations of race and ethnicity (e.g., Hispanic). This means that scholars have tacitly assumed a significant degree of homogeneity within minority populations that is not always present. They have thus failed to clarify how racial/ethnic status articulates with other social characteristics in contributing to unequal environmental risks and health disparities. My team and I have helped to unpack the notion that “Hispanic” is a monolithic category by demonstrating that it masks substantial heterogeneity within the Hispanic population in ways that map to intra-ethnic environmental injusticesand health disparities. Important axes of difference within the Hispanic population include substantial differences in culture, language proficiency, nativity, country of origin, and socioeconomic status.
   1. **Grineski, SE**, Collins, T, \*\*Kim, YA. 2016. Contributions of individual acculturation and neighborhood ethnic density to variations in Hispanic children’s respiratory health in a U.S.-Mexican border metropolis. *Journal of Public Health.* 38(3): 441-449. (PMID: 26124235)
   2. **Grineski, SE**, \*\*Hererra, JM, \*\*Bulathsinhala, P, Staniswalis, JG. 2015. Is there a Hispanic Health Paradox in sensitivity to air pollution? Hospital admissions for asthma, chronic obstructive pulmonary disease and congestive heart failure associated with NO2 and PM2.5 in El Paso, TX, 2005-2010. *Atmospheric Environment*. 119: 314-321. (PMID: 26557023)
   3. \*\*\*Balcazar, A, **Grineski, SE**, Collins, T. 2015. The Hispanic Health Paradox across Generations: The Relationship of Child Generational Status and Citizenship with Respiratory Health Outcomes.  *Public Health*. 129: 691-697. (PMID: 26002345)
   4. **Grineski, SE,** Collins, TW, Chakraborty, J. 2013. Hispanic heterogeneity and environmental injustice: Intra-ethnic patterns of exposure to cancer risks from vehicular air pollution in Miami. *Population and Environment*. 35(1): 26-44. (PMID: 23935236)
3. **Advancing Environmental Justice Methods: My collaborators and I have also contributed to advances environmental justice research by pushing forward methodological innovations and new statistical approaches for studying distributional environmental injustices. Prior to 2010, most multi-variate quantitative studies relied on ordinary least squares (OLS) regression, which is poorly suited to spatial data. This is because spatial data often exhibits s**patial autocorrelation, which is the tendency of variables to be influenced by their neighbors. This means that the error terms from the regression analysis do not satisfy the independence conditions generally associated with OLS regression. To address this, we led the change in the field toward the use of spatial autoregressive models, which can appropriately deal with spatial dependence. More recently, we have been using individual-level data in studies of environmental justice, which is new, and has necessitated that we introduce statistical approaches not commonly used in EJ research, specifically statistical techniques appropriate for missing, clustered and non-normally distributed data, in order to support valid inferences.
   1. **Grineski, SE**, Collins, TW. 2010. Environmental Injustice in Transnational Context: Urbanization and industrial hazards in El Paso/Ciudad Juárez.*Environment and Planning A*. 42 (6): 1308-1327.
   2. **Grineski, SE**, Collins, TW, Ford, P, Fitzgerald, R, Aldouri, R, Velazquez-Angulo, G, Romo, L, Lu, D. 2012. Climate change and environmental injustice in a bi-national context. *Applied Geography*. 33(1): 25-35.
   3. **Grineski, SE**, Collins, TW, \*\*McDonald, Y, \*\*Aboargob, F, \*\*Eldeb, A, Romo Aguilar, L, Velázquez-Angulo, G. 2015. Double Exposure and the Climate Gap: Changing demographics and extreme heat in Ciudad Juárez, Mexico. *Local Environment*. 20(2): 180-201. (PMID: 25642135)
   4. Collins, T, **Grineski, SE**, \*Morales, DX. 2017. Sexual orientation, gender, and environmental injustice: unequal carcinogenic air pollution risks in Greater Houston. *Annals of the Association of American Geographers*. 107(1): 72-92.
4. **Broadening the Scope of Environmental Justice Research:** My team and I have contributed significantly to the project of broadening the scope of quantitative EJ research by conducting studies in Méxicoand by introducing an approach for conducting comparative EJ research based on hazard characteristics. The majority of environmental justice (EJ) studies over the past several decades have examined the Global North (US, Canada, Europe) and found that low income and minority residents face exposure to industrial hazards. A small body of research suggests that patterns of environmental injustice may be different in the Global South. Therefore, we have conducted a series of studies in Juárez and Tijuana, Mexico and findings point to the importance of urban development trajectories in shaping patterns of environmental injustice. Stemming from this work, we have also sought to expand the scope of EJ research by focusing on comparative work between cities and different types of hazards. Limited systematic comparative knowledge exists about patterns of environmental injustices in exposure to varied natural and technological hazards in different contexts.
   1. **Grineski, SE**, Collins T, Chakraborty, J. \*\*Montgomery, M. 2016. Hazard characteristics and patterns of environmental injustice: household-level determinants of environmental risk in Miami, Florida. *Risk Analysis*. DOI: 10.1111/risa.12706
   2. **Grineski, S**., Collins, T, Romo Aguilar, L. 2015. Environmental injustice along the US-Mexico border: residential proximity to industrial parks in Tijuana, Mexico. *Environmental Research Letters*. 10: 095012.
   3. **Grineski, SE**, Collins, TW, Chakraborty, J. \*\*Montgomery, MC. 2015. Hazardous Air Pollutants & Flooding: A comparative interurban study of environmental injustice. *GeoJournal*. 80(1): 145-158.
   4. **Grineski, SE**, Collins, TW, Romo Aguilar, L, Aldouri, R. 2010.No Safe Place: Environmental Hazards & Injustice along Mexico’s Northern Border. *Social Forces.* 88 (5): 2241-2266.
5. **Socioenvironmental Disparities in Asthma:** Relying on qualitative/interview methods, my early work focused specifically on children’s asthma. I sought to understand parents’ experiences as they coped with their child’s asthma under very different social and physical environments. Drawing from three diverse school districts in Phoenix, AZ, my 53 participants ranged from low-income undocumented immigrant parents living in substandard housing in the central city to professional parents with high levels of income and expensive homes living near a regional park. Through the analysis of interview transcripts, I learned that the element of control (over ambient conditions, home environment, health care, and school experiences) was a key factor in parents’ abilities to improve the health of their child, and that the poor parents were severely constrained in their ability to control their child’s surroundings. The benefits of control seem to be psychosocial (feeling in control) and physical (reducing asthma triggers, managing asthma effectively).
   1. **Grineski, SE**, \*\*\*Hernández, AA. 2010. Landlords, Fear and Children’s Respiratory Health: An untold story of environmental injustice in the central city. *Local Environment*. 15(3): 197–214.
   2. **Grineski, SE**. 2009. Human-Environment Interactions & Environmental Justice: How do diverse parents of asthmatic children minimize hazards?  *Society and Natural Resources.* 22(8): 727-743.
   3. **Grineski, SE**. 2009. Parental Accounts of Children’s Asthma Care: The roles of cultural, social, and economic capitals in health disparities. *Sociological Focus*. 42(2): 107-143.
   4. **Grineski, SE.** 2008. Coping with asthma in the central city: Parental experiences with children’s health care. *Journal of Health Care for the Poor and Underserved.* 19(1): 227-236.

A full list of research-related published work can be found at:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1JSVQsc--GfkO/bibliography/43329054/public/?sort=date&direction=ascending>

**D. Additional Information: Research Support**

**Ongoing Research Support**

NIGMS Aley, Boland, Collins, Cox 07/01/14-06/30/19

Echegoyen, Grineski, Nazeran, Morera

Building Infrastructure Leading to Diversity: Southwest Consortium of Health-Oriented education Leaders and Research Scholars (BUILDing SCHOLARS).

The goal of this study is to implement a suite of programs and activities that will positively transform the training of the next generation of biomedical researchers from the U.S. Southwest through a multi-institution consortium in Texas, New Mexico and Arizona.

Role: PI (multiple PI team)

**Completed Research Support (last 3 years)**

NIH Common Fund Aguilera, Collins, 9/2013-3/2014

Echegoyen, Grineski,

Morera (PIs/PDs)

“BUILDing SCHOLARS”: Planning Grant for the Building Infrastructure Leading to Diversity (BUILD) Initiative (P20).

The goal of this project is to develop an innovative BUILDing SCHOLARS program plan and a project proposal that successfully competes for funding through the full BUILD mechanism.

National Science Foundation Collins (PI) 2/2011-8/2014

**Advancing environmental equity research: vulnerability to air pollution and flood risks in Houston and Miami.**

The goal of the study is to examine environmental injustice and residential decision-making from a comparative perspective focused on two cities and two environmental hazards.

Role: Co-Principal Investigator

National Science Foundation Collins (PI) 9/2012-8/2014

Research Experiences for Undergraduates (REU) Supplement: **Advancing environmental equity research: vulnerability to air pollution and flood risks in Houston and Miami.**

The goal of this award is to fund two undergraduate student research assistants to work alongside the project team.

Role: Co-Principal Investigator

NIMHD/EPA Provencio-Vasquez (PI) 9/2011-6/2014

Hispanic Health Disparities Research Center: Revision Application to Support Environmental Health Disparities.

The goal of this project is to complete two interdisciplinary research studies and build research capacity in environmental health among faculty and students.

Role: Co-Investigator