

CURRICULUM VITAE
Katherine Ann Willyard

Department of Sociology
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ACADEMIC DEGREES

Ph.D. 2019 Texas A&M University, Department of Sociology

Dissertation: “The Effects of Organizational, Community, and State Regulatory Characteristics on Oil and Gas Extraction Facility Venting and Flaring Practices”

Committee: Dr. Theresa Morris, Department of Sociology (Chair)
Dr. Arthur Sakamoto, Department of Sociology
Dr. Mary Campbell, Department of Sociology
Dr. Daniel Goldberg, Department of Geography

2017 Funded by National Science Foundation Doctoral Dissertation Research Improvement (NSF-DDRI) Grant, [SES-1702683](#)

2017 Received Dissertation Mentorship with Dr. Randy Becker, Principal Economist, and Special Assistant to the Chief Economist, Center for Economic Studies, United States Census Bureau

M.S. 2014 Texas A&M University, Department of Sociology

Dissertation: “Politics and Power: The 1992 Israeli Loan Guarantees”

Committee: Dr. Harland Prechel, Department of Sociology (Chair)
Dr. Joseph Jewell, Department of Sociology
Dr. Michelle Taylor-Robinson, Department of Political Science

B.S. 2008 Texas A&M University, Department of Sociology

GRADUATE CERTIFICATES

2015 Geographic Information Systems, Texas A&M University, Department of Geography and Department of Ecosystem Science and Management

2012 Nonprofit Management, Texas A&M University, Bush School of Public Service

RESEARCH AND TEACHING INTERESTS

Environmental Sociology, Sociology of Food, Research Methods, Spatial Demography

PROFESSIONAL EMPLOYMENT RECORD

- 2019 – current Survey Statistician, United States Census Bureau
- 2019 Student Worker, Hazard Reduction and Recovery Center
- 2015 – 2019 Research Assistant, Texas Federal Statistical Research Data Center
- 2015 Instructor of Record (Social Problems), Texas A&M University
- 2014 Graduate Research Assistant, Texas A&M University, Sociology
- 2012 – 2014 Academic Advisor, Texas A&M University, Sociology
- 2011 – 2102 Advising Intern, Texas A&M University, International Student Services

PEER REVIEWED PUBLICATIONS

Journal Articles

- 2019 Katherine Ann Willyard and Gunnar Schade. “Flaring in Two Texas Shale Areas: Comparison of Bottom-up with Top-down Volume Estimates for 2012 to 2015,” *Science of the Total Environment* <https://doi.org/10.1016/j.scitotenv.2019.06.465>
- 2019 Katherine Ann Willyard. “The Organizational Political Economy of the Environment and Changes in Texas Oil and Gas Flaring Regulations from 1889-1990,” *Energy Policy* 128: 639-647 <https://doi.org/10.1016/j.enpol.2019.01.046>

Manuscripts in Progress

Katherine Ann Willyard. “Wasting Natural Resources: A Quantitative Analysis of Texas Oil and Gas Venting and Flaring Practices” (Revise and Resubmit at *Energy Research & Social Science*)

Katherine Ann Willyard. “Variations in Facility Production of and Community Exposure to Texas Oil and Gas Venting and Flaring” (Revise and Resubmit at *Environmental Sociology*)

Katherine Ann Willyard. “Do Subsidiaries Engage More Heavily in Methane Producing Activities by the Oil and Gas Industry? A Quantitative Analysis of Texas Oil and Gas Venting and Flaring Volumes” (Results using Restricted Data Disclosed by the United States Census Bureau; Revising Paper for Publication)

Megan Augustyn, and Katherine Ann Willyard. “The Contextual Influences of Police and Social Services on Help-Seeking for Intimate Partner Violence” (Under Review at *Journal for Interpersonal Violence*)

OTHER PUBLICATIONS

Op-Ed Articles

2017 Katherine Ann Willyard. “The Need for Better Texas Oil and Gas Industry Regulatory Data,” *Texas Tribune* <https://www.tribtalk.org/2017/05/17/the-need-for-better-texas-oil-and-gas-industry-regulatory-data/>

Web Applications

2017 Katherine Ann Willyard. “Texas Community Exposure to Oil and Gas Facility Venting and Flaring Practices in 2012”
<http://tamu.maps.arcgis.com/apps/webappviewer/index.html?id=05ba58ab4ef1441389289d34395d3587>

Data Products

2017 Katherine Ann Willyard. “The Relationship Between Organizational, Community, and State Regulatory Characteristics and Texas Oil and Gas Extraction Facility Venting and Flaring Practices,” Inter-University Consortium for Political and Social Research
<http://doi.org/10.3886/E101192V1>

2018 Katherine Ann Willyard. “Texas County Oil and Gas Production, Venting, and Flaring Volumes,” Inter-University Consortium for Political and Social Research
<http://doi.org/10.3886/E100901V1>

FEDERAL STATISTICAL CENSUS RESEARCH DATA CENTER (RDC) PROJECTS

Active Research Projects

2018 – 2023 Katherine Ann Willyard (PI). “Organizational Characteristics of Organizational Institutional Environments and Texas Oil and Gas Venting and Flaring Practices,” TX 1758

2016 – 2019 Megan Augustyn (PI), and Katherine Ann Willyard. “Improving the Quality of the National Crime Victimization Survey and Police Public Contact Survey to Better Understand the Determinates of Help-Seeking Behavior Among Victims of Intimate-Partner and Sexual Assaults,” TX 1392

Pending Research Proposals

- 2018 Katherine Ann Willyard (Co-PI), Sarah Gatson (Co-PI), and Marissa Cisneros. “The Contextual Effects of Supplemental Nutrition Assistance Program Participation on Health Care Expenditures among Low-Income Adults,” CFACT 472
(Approved by the Agency for Health Care Research and Quality)

Research Proposals in Progress

- 2018 Verna Keith (PI), Mark Fossett, and Katherine Ann Willyard. “Residential Segregation, Neighborhood Disadvantage and Allostatic Load”

Completed Research Projects

- 2016 – 2018 Johnelle Sparks (PI) and Katherine Ann Willyard. “Examining the Impact of Segregation on Racial/Ethnic and Educational Differences in Allostatic Load Levels and Mortality Risks,” TX 1341

FUNDED GRANTS

- 2017 – 2019 Katherine Ann Willyard (PI) and Theresa Morris (Project Director). National Science Foundation Doctoral Dissertation Research Improvement Grant, [SES-1702683](#), “The Effects of Organizational, Community, and State Regulatory Characteristics on Texas Gas Well Venting and Flaring Rates,” \$11,954
- 2018 Katherine Ann Willyard, and Sarah Gatson. Seed Grant, Texas Federal Statistical Research Data Center, “The Contextual Effects of Supplemental Nutrition Assistance Program Participation on Health Care Expenditures among Low-Income Adults,” \$4,250
- 2018 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Undergraduate Corporate Structure Data Collection and Training,” \$900
- 2017 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Texas Railroad Commission Digital Map and API Data Purchase,” \$3,082
- 2016 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Texas Railroad Commission Drilling Permit, Production Data, and Regulatory Data Purchase” \$4,135
- 2015 – 2016 Katherine Ann Willyard. Texas A&M University Melbern G. Glasscock Center for Humanities Research Graduate Research Fellowship Program, “Archival Research on the Historical Development of Texas Railroad Commission Venting and Flaring Regulations,” \$2,000

- 2015 Katherine Ann Willyard. Texas A&M University, College of Liberal Arts, Professional Development Support Award, "Longitudinal Data Analysis Workshop," \$2,337
- 2015 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, "Texas Railroad Commission Programmed Data Purchase," \$765
- 2011 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, "Archival Research on the Development of United States Loan Guarantee Policy," \$600

AWARDS

- 2018 Exxon Mobil Best Oral Presentation Award for the presentation "Flaring in Two Texas Shale Areas: Comparison of Bottom-Up and Top-Down Volume Estimates from 2012 to 2015," \$500
- 2018 Rural Sociological Society Graduate Student Paper Award- Natural Resources Research Interest Group for the article, "Who Is Burning Money and Throwing It In the Air?: A Quantitative Analysis of Disproportionality of Texas Oil and Gas Venting and Flaring Practices in 2012," \$100
- 2017 United States Department of Commerce, Census Bureau, Center for Economic Studies Dissertation Mentorship, Mentor is Dr. Randy Becker, Principal Economist and Special Assistant to the Chief Economist
- 2017 Texas A&M University GIS Day Paper Completion, 2nd Place Award for the paper "Comparing Block Group and Facility Analysis of Disproportionate Community Exposure to Texas Oil and Gas Venting and Flaring Practices in 2012," \$100
- 2015 Texas A&M University Graduate Teaching Academy, Academy for Future Faculty Fellowship
- 2014 International Interdisciplinary Social Sciences Graduate Scholar Award, \$500
- 2011 Southwestern Social Science Association, Best Graduate Presentation- Visual Sociology for the display "Separation Barriers," \$100

SCHOLARSHIPS

- 2014 Texas A&M University, Texas Aggie Graduate Grant, \$1,500

2011 Texas A&M University, Bush School of Public Service, Online Student Scholar Award, \$1,000

2011 Texas A&M University, Department of Sociology, Academic Recognition Scholarship, \$1,000

PRESENTATIONS

Papers Presented at Conferences

* Undergraduate student collaborator

2019 Katherine Ann Willyard. "Do Subsidiaries Engage More Heavily in Methane Producing Activities in the Oil and Gas Industry?" Presented at the American Sociological Association Annual Meeting, Environmental Change and Inequality Paper Session

2018 Katherine Ann Willyard, Nina Canal*, Angelina Dumlao*, Miranda Hooper*, William Thompson*, and Gunnar Schade. "Estimation of Texas Flaring and Venting Volumes from upstream Oil and Gas Facilities Using Texas Railroad Commission Reports and National Oceanic and Atmospheric Administration Satellite Imagery, 2012-2015," Presented at the Annual Texas A&M Conference on Energy*

*Awarded the Exxon Mobil Best Oral Presentation Award, \$500

2018 Megan Augustyn, and Katherine Ann Willyard. "Improving the Quality of the National Crime Victimization Survey and Police Public Contact Survey in order to Better Understand the Determinates of Help-Seeking Behavior among Victims of Intimate-Partner Violence and Sexual Assaults," Presented at the Annual Federal Statistical Research Data Center Annual Research Conference

2018 Katherine Ann Willyard. "Disproportionalities in Facility Production of and Community Exposure to Oil and Gas Venting and Flaring," Presented at the American Sociological Association Annual Meeting, Innovative Perspectives on Environmental Justice Paper Session

2018 Katherine Ann Willyard. "Who Is Burning Money and Throwing It in the Air?: A Quantitative Analysis of Disparities in Texas Oil and Gas Extraction Facility Venting and Flaring Practices in 2012," Presented at the Rural Sociological Society Annual Meeting

2017 Megan Augustyn, and Katherine Ann Willyard. "Contextual Influences on Help-seeking Behavior for Intimate Partner Violence," Presented at the American Society of Criminology Annual Meeting

2017 Katherine Ann Willyard. "Comparing Block Group and Facility Analysis of Disproportionate Community Exposure to Texas Oil and Gas Venting and Flaring Practices in 2012," Presented at Texas A&M GIS Day*

*Received 2nd Place Paper Presentation Award, \$100

2017 Katherine Ann Willyard. "Community Exposure to Texas Gas Well Venting and Flaring Emissions in 2012," Presented at the Southwestern Social Science Association Annual Meeting

2016 Harland Prechel, and Katherine Ann Willyard. "Organizational Political Economy and Greenhouse Gas Emissions: A Multilevel Analysis of the United States Energy Sector," Presented at the Annual Federal Statistical Research Data Center Annual Research Conference

2015 Katherine Ann Willyard. "Corporate-State Relations and State Environmental Policy: A Historical Study of Texas Flaring Regulations, 1930-2013," Presented at the American Sociological Association Annual Meeting, Environmental Sociology Round Table Session

2014 Katherine Ann Willyard. "Understanding United States Foreign Policy in the Middle East: The 1992 Israeli Loan Guarantee Showdown," Presented at the International Interdisciplinary Social Science Conference Annual Meeting*

*Received the International Interdisciplinary Social Sciences Graduate Scholar Award, \$500

2014 Katherine Ann Willyard. "The 1992 Israeli Loan Guarantees: A Key to Understanding Political Power in the United States' Middle East Foreign Policy," Presented at the Southwestern Social Science Association Annual Meeting

Posters Presented at Conferences

2011 Katherine Ann Willyard. "Separation Barriers," Presented at the Southwestern Social Science Association Annual Meeting*

*Awarded the Visual Sociology Best Graduate Presentation, \$100

Invited Lectures

2018 Ernesto Amaral, and Katherine Ann Willyard. "Introduction to Bayesian Models Using Stata," Presented at the Texas Federal Statistical Research Data Center

- 2017 Katherine Ann Willyard. "Graduate Student Dissertation Research in a Federal Statistical Research Data Center (FSRDC): The Effects of Organizational Characteristics and the Characteristics of Organizational Institutional Environments on Texas Oil and Gas Venting and Flaring Practices," Presented at the Rocky Mountain Federal Statistical Research Data Center
- 2016 Katherine Ann Willyard. "Corporate-State Relations and State Environmental Policy: Texas Oil and Gas Flaring Regulations, 1890-2014," Presented at the Glasscock Center Library

COURSES TAUGHT AT TEXAS A&M UNIVERSITY

Instructor of Record- Full Responsibility

| | | | |
|------|--------|----------|-----------------|
| 2015 | Spring | SOCI 316 | Social Problems |
| | Summer | SOCI 316 | Social Problems |

Guest Lecturer

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| 2014 | SOCI 230 | Classical Sociological Theory | "The Nature and Types of Social Theory" |
| 2017 | SOCI 335 | Sociology of Organizations | "Resource Dependence Theory" |

SERVICE

Texas A&M University

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|-----------|---|
| 2018 | Texas A&M Aggie Undergraduate Research Leader |
| 2012-2016 | ATMentors, College of Liberal Arts |
| 2013-2014 | Diversity Committee, Department of Sociology, elected |
| 2012-2013 | Sociology Club Advisor, appointed |

STUDENTS SUPERVISED

Undergraduate Research Mentees

| | |
|------------------|----------------|
| Emma Alexander | Completed 2019 |
| Nina Canal | Completed 2018 |
| Angelina Dumlao | Completed 2018 |
| Miranda Hooper | Completed 2018 |
| William Thompson | Completed 2018 |
| Garrison Reed | Completed 2017 |

PROFESSIONAL AFFILIATIONS

American Sociological Association
Southwestern Social Science Association
Rural Sociological Society

RESEARCH SKILLS

Research Ethics

Data Stewardship Training
Title 26 Awareness Training

Facilitating Large Restricted Federal Data Analysis

Administered 1900, 1910, 1920, 1930, and 1940 IPUMS- USA 100% count micro-level Census data files located at Texas A&M University
Currently granted Special Sworn Status (SSS) by the United States Census Bureau
Managed and analyzed restricted business, community, health and crime data available at a Federal Statistical Research Data Center

Research Methods

Archival research
Bayesian spatial modeling with R-INLA & MCMC
Content analysis
Contextual analysis
Difference-in-difference estimation
Econometric models for dealing with excess zeros
Econometrics for experimental economics
Focus groups
Generalized linear mixed modeling for clustered and longitudinal data
Historical comparative analysis
Interviews
K-Nearest neighbor analysis
Participant observation
Program evaluations
Spatial statistics
Two-step multilevel analysis to deal with large level-two sample sizes

Statistical Software and Other Programming Skills

ArcGIS
ATLAS.ti
Qualtrics
Python
R
Stata
SAS
VBA
HTML
SQL

ADMINISTRATIVE AND TEACHER TRAINING

Diversity and Inclusiveness

Building a Community of Respect in the Classroom
Enhancing Teaching and Learning for All Students with Universal Design and Technology
Working with Students with Disabilities

Communication

Assertiveness Training
Interpersonal Communication Skills
Understanding Communication Styles
Working in a Team Environment

Teaching

Effective Exam Item Creation
High Impact Practices and Measuring Effectiveness
Humanizing Education, Learning, and Leadership On/Offline
Metacognition
Questioning Skills and Techniques
Strategies to Promote Active Learning
Technology Enhanced Approaches for Engaging Students in Large Classes
Techniques in Lecturing
The Six Pillars of Engagement
Teaching College Writing

Advising

Fundamentals of Managing Departmental Records

Goal Setting

Intrusive Academic Advising: An Effective Strategy to Increase Student Success

Organizational Alignment and Culture

Student Safety

Brutality 101- Bullying in Higher Education

Emergency Preparedness

QPR Suicide Prevention Gatekeeper

Responding to Reports of Sexual Harassment

Shots Fired on Campus