

J. Luke Irwin, MPH, MPhil

jlirwin@rand.org

Assistant Policy Researcher, Ph.D. Candidate

(310) 393-0411, x7598

PERSONAL SUMMARY

I am an enthusiastic convener of people and ideas with an indomitable focus on promoting the public good.

My research interests include Education and Workforce Development, Science and Technology Policy, Social Inequality, and Complex Adaptive Systems.

I am proficient in collecting, integrating, analyzing, and communicating multifaceted quantitative and qualitative data.

EDUCATION

Pardee RAND Graduate School

Ph.D. Candidate in Policy Analysis, current
Master of Philosophy in Policy Analysis, 2018

University of Texas Health Science Center

Master of Science in Public Health, 2014

University of Texas at Austin

B.S. in Neurobiology, 2012
Minors in Computer Programming, Biomimicry

WORK HISTORY AND EXPERIENCE

RAND CORPORATION

Assistant Policy Researcher, Doctoral Candidate

Los Angeles, California

August 2016 – Present

Dissertation Research (Ongoing)

Title: *Preparing for the Future of Work: Leveraging Workforce Systems to Better Serve Displaced and First-Time Workers*

- Evaluating existing workforce systems at the national level to determine successes and gaps in workforce development infrastructure, including education and training systems, employer partnerships, public support systems, and identity mismatches in new forms of employment
- Developing new metrics for identifying individuals and industries at risk to disruption from automation
- Interviewing multiple stakeholders in the public and private sectors in both rural/urban settings

Selected RAND Project Work

Education

Research Study of Mainstreaming/Co-Requisite Acceleration in Texas Community Colleges

- Engaged in semi-structured interviews with secondary education administrators and teachers in Texas Community Colleges, Apprenticeships, & Employment Matching
- Assisted with proposal writing for study on community college partnerships and state incentive structures
- Conducted literature scans and reviews on an underdeveloped area of research

Science and Technology Policy

Autonomous Vehicle Safety: Developing Methods of Demonstrating what is “Safe Enough”

- Explored multidisciplinary literature to construct structural frameworks around AV safety
- Interviewed industry and public stakeholders about perspectives on safety

Security 2040: The Security Implications of Additive Manufacturing

- Co-developed application for RIR internally-funded grant project
- Executed scoping of rapidly developing field of additive manufacturing and 3D printing
- Conducted semi-structured interviews with subject matter experts and industry stakeholders
- Planned and conducted workshop to explore the long-term security implications of additive manufacture

Future Army Installations

- Assessed US Army needs to integrate “smart city” to promote security and improve data quality
- Developed frameworks for planning and implementing provided recommendations

Population Health

Measures Development for Robert Wood Johnson Culture of Health

- Reviewed and synthesized state and federal budgets
- Integrated multiple sources to develop narrative of federal dollars on health spending

Enhancing Prehospital Outcomes for Cardiac Arrest (EPOC)

- Performed semi-structured interviews with diverse healthcare providers and stakeholders
- Created and communicated presentations and graphics surrounding complex health system topics

Complex Systems and Inequality

Characterizing Interdependent Disparities and Inequalities in Rural America

- Developed inequality framework to align disparate metrics on rural structures, outcomes, and sectors
- Co-wrote grant application for \$200,000.
- Developed a framework and risk score measure, based on available data, to determine the degree to which rural decay was impacting communities in the United States

Non-RAND Work History

UNIVERSITY OF CALIFORNIA LA SCHOOL OF LAW

Los Angeles, California

Teaching Assistant for Law 948: Policy Analysis and Advocacy

January 2019

- Co-developed syllabus and curriculum for first-time law class
- Mentored students on final project related to the 2020 United States Census
- Led instruction on topic related to the policy process
- Graded quantitative and qualitative homework assignments

INTERNATIONAL INSTITUTE OF APPLIED SYSTEMS ANALYSIS

Vienna, Austria

YSSP Research Fellow

June 2018 – August 2018

- Independently developed a research plan and conducted analyses on historical German workforce data
- Presented research to diverse international stakeholders about technological disruption of the workforce

DEPARTMENT OF STATE HEALTH SERVICES, CENTER FOR HEALTH STATISTICS

Austin, Texas

Researcher Specialist

January 2015 – July 2016

- Analyzed statewide death, birth, fetal death, and abortion data for accuracy, quality, and trends
- Fulfilled complex data requests for researchers, legislature, the media, and the public
- Developed procedures and creates tools for automation of data-related tasks
- Interfaced with various stakeholders as a subject matter expert on vital event data
- Created annual statistical reports and adapted them for accessibility for the state website

CENTERS FOR DISEASE CONTROL AND PREVENTION

Atlanta, Georgia

Graduate Environmental Health Guest Researcher

June 2014 – August 2014

- Presented research on Climatic Impacts of Confined Animal Feeding Operations at Climate and Health Symposium to colleagues and subject matter experts
- Compiled and reviewed over 8,000 scientific papers to assess the state of knowledge on developmental sensitivity windows for endocrine disrupting chemicals
- Developed a developmental endocrine disruption database from ToxProfiles to stimulate further research and exploration at the Centers for Disease Control
- Completed training in Public Health Communications, Environmental Health Training in Emergency Response, GIS for Environmental Health, and Public Health Law

UNIVERSITY OF TEXAS AT AUSTIN, HEALTH SCIENCE CENTER AT HOUSTON

Austin, Texas

*Graduate Research Assistant, Tobacco Centers of Regulatory Science (TCORS)
and Childhood Obesity Research Demonstration (CORD)*

August 2013 - May 2014

- Coordinated with/contributed to the City of Austin’s development of the *Imagine Austin* Comprehensive Plan, focusing on transportation infrastructure and aligning neighborhood association plans
- Created a class curriculum on Tobacco Regulatory Science for Fall 2014 semester
- Planned annual and monthly lecture series from subject matter experts in Regulatory/Tobacco science
Generated toolkits for the Development and Pilot core including resources to plan future symposium events and how to construct curriculum and coursework for regulatory science classes
- Developed codebooks for organization of statewide data collection
- Implemented structural framework for resource documentation and data collection tools

ST. DAVID’S MEDICAL CENTER

Austin, TX

Patient Care Technician/Unit Clerk, Emergency Department

August 2009 – May 2014

- Performed patient care in fast-paced 48-bed Emergency Department in downtown urban hospital
- Communicated risk, health and safety information to patients and family members
- Coordinated Emergency Medical Services throughput in the Emergency Department
- Utilized personal protective equipment to protect patients and staff

UTEACH TEACHING PROGRAM

Austin, TX

Student Teacher

September 2008 – December 2010

- Developed and applied lesson plans in Science, Biology, and History at Pillow Elementary School, O. Henry Middle School, Crocket High School, and the University of Texas College of Education
- Taught and evaluated in classrooms of over 30 students each from the elementary through collegiate levels of education

THE UNIVERSITY OF TEXAS AT AUSTIN

Austin, TX

Laboratory Technician

January 2007 – May 2012

- Performed lab trials, tested toxicants against neurogenesis for the Neurobiology Department
- Created apparatuses for experiment and analyzed data for Animal Behavior for the Behavioral Sciences Department
- Conducted lab trials, composed research presentation materials on nanomaterials for the Microbiology Department

SKILLS AND TRAINING

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| <ul style="list-style-type: none"> - Statistical Programs – R, Stata, SAS, SPSS - Microsoft Suite - Adobe (Photoshop, InDesign, Illustrator) - Programming - SQL, Python, Java, HTML - Other Software - ArcGIS, EndNote, Tableau | <ul style="list-style-type: none"> - Emergency Medical Technician Basic - Trained - Paramedic Trained at Texas A&M Engineering Extension Service (TEEX) in College Station, Texas - Emergency Medical Services Operations & Planning for Weapons of Mass Destruction Certification |
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PUBLICATIONS AND REPORTS

- 2020 *Los Angeles River Revitalization: Taking Inspiration from Near and Far* – [RAND Blog Post](#)
- 2019 *Algorithmic equity: a framework for social applications* – [RAND Research Report](#)
A systemic framework for understanding the dynamics of rural communities in America – [RAND Working Paper](#)
- 2018 *Additive manufacturing in 2040: powerful enabler, disruptive threat* – [RAND Perspective](#)
Downloadable Guns and Other 3-D Printing Security Threats – [Commentary for Fox News](#)
- 2017 *Trans-generational Developmental Sensitivity Windows of Endocrine Disruptors in Multiple Species* – Centers for Disease Control

- 2014 *An Assessment of the Moderating Effects of Activity Level and Dietary Habits on Contraction of Asthma after Exposure to PM_{2.5} in Adolescents* – Master’s Thesis
A Research Method and Example Geospatial Assessment of Transportation Underserved in Austin, Texas – Working Paper
- 2013 *Austin/Travis County Health Improvement Plan (CHIP) Built Environment Transportation Objective 3.2, Strategies 3.2.1-3.2.3* – Report Submitted to Texas Department of Human and Health Resources
- 2012 *Creative and Sustainable Solutions through Biomimicry: Using Nature as a Guide for Technology* – Undergraduate Capstone Report

LEADERSHIP ACTIVITIES & HONORS

- 2016-2019 Elected CoCom Representative for two years at the Pardee RAND Graduate School. – *Leadership role on Coordinating Committee (student government) 2016-2017*
 Co-Founder, Editor-in-Chief of *The Pardee Times* – *Leadership role in student newspaper, including writing, editing, designing, and managing staff and contributors*
- 2018 Awarded Roger Levien YSSP Fellowship to perform research at the International Institute of Applied Systems Analysis (IIASA)
- 2017 Awarded RAND Spotlight Award for continuing contributions to the “intellectual and cultural environment of Pardee RAND”
- 2017 Chaired “Innovation, Technology, and Progress” Panel at Association for Public Policy Analysis & Management (APPAM) California Student Regional Conference
- 2013-2016 Judge, Austin Energy Regional Science Festival - *Assessed middle and high school students science fair projects for scientific method, clarity, presentation ability, and accuracy*
- 2009-2012 Director, Actor, University of Texas Madrigal Dinner- *Directed multiple student written plays with more than 70 actors for audiences of more than 1,200*
- 2009-2012 Beta Beta Beta Biological Honor Society – *Member and Community Volunteer*
- 2008-2010 Longhorn Emergency Medical Services Organization - *Provided patient care at Darrell K. Royal Stadium during University of Texas football games with over 50,000 spectators*