Anna Grace WHITE

PERSONAL DATA

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RESEARCH GROUP:	Guikema Research Group

EDUCATION

University of Michigan, Ann Arbor, Michigan   MAY 2022 *(Expected)*
PhD Candidate in INDUSTRIAL AND OPERATIONS ENGINEERING
Advisor: Seth Guikema, PhD
Science, Technology, & Public Policy Certificate Program
GPA: 3.96/4.00

Clemson University, Clemson, South Carolina   MAY 2017
Bachelor of Science in INDUSTRIAL ENGINEERING
Calhoun Honors College: General and Departmental Honors
Minor in Modern Languages - Spanish
GPA: 4.00/4.00 *(Summa Cum Laude)*

Universitat Autonoma de Barcelona, Barcelona, Spain   SPRING 2015
Semester Study Abroad

RESEARCH EXPERIENCE

Transportation investments to improve access to treatment for opioid misuse disorder   FALL 2020 - PRESENT
Anticipated journal submission Spring 2022

In this collaboration with Vanderbilt University, we are evaluating transportation barriers to opioid treatment in Tennessee. Using case studies of rural, urban, and suburban areas, we are evaluating treatment demand, disparities in transportation access, and impact of new transportation investments.

A Framework for predicting cell coverage during hurricanes   WINTER 2019 - PRESENT
Anticipated journal submission Spring 2021

To better understand the risk of cell service outages during natural disasters, we simulated the effects of hurricane speed winds on geospatial cell tower and antenna data. We estimated network coverage using a genetic algorithm and used Monte Carlo simulation to predict service loss under hazard scenarios. This work is funded by One Concern, Inc., a Silicon Valley start-up focused on data analytics for community resilience and natural hazards.

Modeling illicit massage business location characteristics with machine learning   FALL 2018 - WINTER 2021
Journal paper under review

Using scraped web data and publicly available census tract characteristics, this study uses inferential modeling to detect high-risk areas for illicit massage businesses and reveal significant factors in the existence of these high-risk environments across the US.

Persistent patterns of discriminatory housing policy and inequity: A spatial statistical analysis *Accepted, Applied Geography* We compared spatial patterns between discriminatory lending maps, often called redlining maps, drawn by the Home Owner's Loan Corporation (HOLC) and 12 current quality of life indicators including health, employment, education, and income. We use statistical analysis tools and unsupervised learning techniques. Our findings suggest that discriminatory housing patterns continue to be reflected in outcomes across 14 wide ranging cities today.	FALL 2017 - WINTER 2020
Cost minimization and fleet sizing for multi-function electric bus fleets *Honors Thesis*	FALL 2016 - SPRING 2017

SELECTED AWARDS AND GRANTS

- Rackham Predoctoral Fellowship	2021
- North Campus Deans' MLK Spirit Award, INFORMS at UM President term	2021
- Bayer Women in Operations Research Registration Award	2020
- INFORMS Student Chapter Summa Cum Laude, Vice President term	2020
- College of Engineering Diversity, Equity, and Inclusion Student Grant	2020
- Graduate Student Community Grant	2019
- Tennessee Department of Transportation 2019 Mini Call for Research Proposals to addressing the opioid crisis in TN	2019
- National Defense Science and Engineering Graduate Fellowship Finalist	2018, 2019
- Rackham Merit Fellow	2017
- Michigan Institute for Computational Discovery and Engineering Fellow	2017
- Clemson University Faculty Scholarship Award	2017
- Dixon Global Policy Scholar	2013

PUBLICATIONS

White, A. G., Logan, T., Guikema, S. D., Urban population characteristics and their correlation with historic discriminatory housing practices.
Accepted 2021, *Applied Geography*

Zhai, C., Chen, T. Y. J., White, A. G., & Guikema, S. D. Power outage prediction for natural hazards using synthetic power distribution systems. *Reliability Engineering & System Safety*, 208, 107348. Accepted 2020.
doi.org/10.1016/j.ress.2020.107348

PATENTS

Guikema, S., Zhai, C., White, A., Chen, T. Y. J. "Spatial power outage estimation for natural hazards leveraging optimal synthetic power networks." U.S. Patent Filing (patent pending). August 2020.

TEACHING EXPERIENCE

University of Michigan, Ann Arbor, Michgian *Graduate Student Instructor: IOE 202, Intro to Operations Modeling* Selected for a mentored GSI position to be the solo instructor of a small class section Prepared course material and online organization for fully virtual course Taught the half semester course to 10 second year undergrads Teaching Evaluation Results: – "Overall, this was an excellent course" (Q1) – **4.6/5.0**, CoE Median: 4.3	FALL 2020

- "Overall, Anna White was an excellent teacher" (Q2) – **4.5/5.0**, CoE Median: 4.7
- "I had a strong desire to take this course" (Q4) – **4.8/5.0**, CoE Median: 4.1
- "Anna White treated students with respect" (Q217) – **5.0/5.0**, CoE Median: 4.9
- "I have a greater understanding of how course concepts apply to contemporary problems" (Q34) – **4.9/5.0**, University Median: 4.4

University of Michigan, Ann Arbor, Michgian | WINTER 2020
Graduate Student Instructor: IOE 561, Risk Analysis

Gave 3 solo lectures to hybrid classroom of 24 in-person and 17 online students

Helped create exam questions, graded assignments, and offered small group assistance during class periods

Held weekly office hours to help students in one-on-one and small group settings

Seneca High School, Seneca, South Carolina | FALL 2015
TigersTeach Intern

Assisted instruction in three Algebra I sections and one Pre-Calculus section.

Explored teaching methods and teaching career on a weekly basis with a collaborating teacher.

T.C. Roberson High School, Asheville, North Carolina | FALL 2012 – SPRING 2013
After-school Peer Tutoring Program Founder

Started an after-school tutoring program to facilitate peer-to-peer tutoring in math courses.

INDUSTRY EXPERIENCE

Air Force Research Laboratory, Systems Technology Office, Dayton, Ohio | SUMMER 2019
Associate General Engineer

Developed organizational capacity to implement advanced communication system modeling capabilities in AFSIM (Advanced Framework for Simulation, Integration and Modeling software)

Developed training materials for future work in communications modeling in AFSIM

Draexlmaier Automotive of America, Duncan, South Carolina | SUMMER 2016
Corporate Logistics Intern

Worked as a Material Flow Planner to update 40 bay Marketplace and 10 Tugger routes in preparation for building expansion for new carline launch.

Facilitated Kaizen event among four departments to improve machine leasing protocol.

Verified, maintained, and created a total of four logistics databases to ensure all planning information was correct in systems and matched information available in plant.

BorgWarner Turbo Systems, Asheville, North Carolina | SUMMER 2015
Supplier Quality Intern

Verified incoming prototype materials were to specification by reviewing supplier submissions; resolved missing and deficient submissions concerns.

Provided launch support on new customer program through packaging verification and leveling verifications; manufacturing readiness preparation.

Became skilled with new computer systems (SAP, eQLR, EMS) and developed instructions for their use.

Participated in supplier visits and audits to develop an understanding of manufacturing and quality processes.

Biltmore Estate Winery, Asheville, North Carolina | SUMMER 2014
Tasting room wine server

Managed tasting room of high-volume winery by efficiently moving guests through the line

Communicated with guests about wine varieties and the history of Biltmore while serving complimentary wine tasting

Outreach and Mentorship during PhD program

Mentor: SWE Michigan Student Chapter (undergraduate student),
INFORMS Michigan Student Chapter (graduate student),
Lunch & Lab with a Graduate Student (undergraduate students)

Volunteer: Lasagna Love "Lasagna Mama",
Dawn Farm Addiction Treatment Center,
GISE (Girls in Science and Engineering) Summmer Camp,
Xplore Engineering Summer Camp,
FEMMES (Females Excelling More in Math, Engineering, and the Sciences)

Professional Service and Affiliations

2016 - Present   **Institute for Operations Research and Management Sciences (INFORMS)**

2021   *Past President, University of Michigan Student Chapter*
Co-organized and faciliated international movie nights series for College of Engineering graduate students to gather virtually

2020   *President, University of Michigan Student Chapter (Elected)*
Created new committee dedicated to anti-racism and DEI that started a newsletter, held monthly journal clubs, and raised $1345 for Black Girls Code
Chapter received 2021 North Campus Deans' MLK Spirit Award

2019   *Vice President, University of Michigan Student Chapter (Elected)*
Organized 2 day Python workshop for student members to improve Python skills
Chapter received Summa Cum Laude recgonition at Annual Conference

2019   *INFORMS Pro Bono Consulting Project Lead, 2019*
Led a 6 member project team on a facility layout project for a neighborhood association in Ypsilanti, MI.
In the news: 'New tool lending library aims to create "chain reaction of beauty" for West Willow neighborhood'

2018   *Outreach Committee Co-Chair*
Organized industrial engineering activities during 2 summer programs for middle and high school students interested in engineering

2016 - Present   *Student member*

2019 - Present   **Society for Risk Analysis (SRA)**
2021   *Justice, Equity, and Risk Specialty Group Young Professional Representative*
Student member
Reviewer: Journal of Risk Analysis

Conference Presentations

White, A. G.*, Guikema, S., Carr, B. "Why are you *here*? Machine learning for illicit massage business location." *INFORMS Annual Meeting*, Virtual.   Nov 2020

White, A. G.*, Guikema, S., Logan, T. " Framework for predicting cell coverage during hurricanes." *Michigan University-Wide Sustainability and Environment (MUSE) Annual Conference*, Ann Arbor, Michigan.   Feb 2020

White, A. G.*, Guikema, S., Carr, B. "Risk factors for the existence of illicit massage parlors." *SRA Annual Meeting*, Arlington, Virginia.   DEC 2019

White, A. G.* "Panel: Human Trafficking and ORMS." Panelist at *INFORMS Annual Meeting*, Seattle, Washington.   OCT 2019

White, A. G.*, Guikema, S., Logan, T. "Persistent patterns of discriminatory housing policy and inequity: a spatial analysis" **Plenary speaker** at *Michigan University-Wide Sustainability and Environment (MUSE) Annual Conference*, Ann Arbor, Michigan.   FEB 2019

White, A. G.*, Guikema, S., Logan, T. "Persistent patterns of discriminatory housing policy and inequity: a spatial analysis" *INFORMS Annual Meeting*, Phoenix, Arizona.   NOV 2018

White, A. G.*, Guikema, S., Logan, T. "Persistent patterns of discriminatory housing policy and inequity: a spatial analysis" *International Conference on Transport and Health 2018*, Mackinac Island, Michigan.   JUNE 2018

Farthing, A.*, Harris, N., Riggs, R., Mason, S., White, A. G. "Cost minimization and fleet sizing for multifunction electric bus fleets" *INFORMS Annual Meeting*, Nashville, Tennessee.   NOV. 2016
*Presenting author indicated with ***

SKILLS

PROFICIENT:	R, ArcGIS, VBA, AMPL, LaTeX, AutoCAD, Solidworks Mechanical Design, Python, Microsoft Office, AFSIM
INTERMEDIATE:	MATLAB, Arena Simulation Software, SAP
BASIC:	Wolfram Mathematica, CPLEX Solver, Gurobi Solver, Minitab

AFFILIATIONS: PREVIOUS

Michigan University-wide Sustainability & Environment Initiative (MUSE)
Social Chair   AUG 2019 - MAY 2020

University of Michigan Central Student Government
Rackham Graduate School Representative (Elected)   FEB 2018 - NOV 2018

Dixon Global Policy Scholar   SPRING 2014 – SPRING 2017
Studied European identity and policy-making as one of 12 selected students in a 12-day study abroad program through Belgium, Luxembourg, France, Germany, and Switzerland.
Continued policy studies through two courses and bi-weekly peer discussion groups, culminating in a policy proposal document for a topic of our choosing.

Clemson University Student Government: Sustainability Committee   FALL 2013 – SPRING 2017
Sustainable Education Programs Chair
Led subcommittee to plan and carry out sustainability education events with local elementary and high schools.
Organized and supported initiatives like Earth Day, Sustainability Week, Student Sustainability Initiative, "Zero-waste" events, and education programs on campus.
Promoted sustainable organizations and events on campus and in the community.

Clemson University Women's Rowing Team

Balanced academics and six days of strenuous training per week.
Competed in all home regattas.