Veronica White

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Statement of Purpose

I am a 5th year PhD student in Industrial and Systems Engineering at UW-Madison. My focus area is operations research with emphasis on Optimization (stochastic, discrete, mixed-integer), simulation (discrete event), program evaluation (causal inference, statistical tests), implementation science. My research interests involve modeling, developing, and evaluating the interconnected systems essential to improving substance use disorder and related community outcomes via policies and programming. Substance use disorder is a societal problem that impacts many disciplines/areas (e.g., social services, healthcare, criminal justice) and many populations (e.g., people with mental illness, LGBTQIA+, people experiencing homelessness). I have experience working on collaborative projects with various groups such as medicine, public policy, law enforcement, farmers, etc.

Education

University of Wisconsin – Madison **Anticipated Graduation:** May 2022
Doctor of Philosophy, Industrial Engineering
Master of Science, Industrial Engineering May 2019

Iowa State University – Ames, Iowa May 2017
Bachelor of Science, Industrial Engineering Magnum cum Laude

Relevant Research Experience

Policing and Opioid Use Disorder– Graduate Research Assistant October 2019 to Present
UW Industrial and Systems Engineering – with Dr. Albert & Dr. Zayas-Caban
- Study Overview: NSF funding for analysis of a smart policing initiative, MARI, which will be used for optimization models in illicit drug interdiction and police scheduling
- Creating graphs and simple statistical analysis done with RStudio
- Developed causal inference methods to evaluate 6-month recidivism outcomes
- Developed DES simulation to understand county-level outcomes of the program

Stochastic Ambulance Dispatching Modeling – Graduate Research Assistant May 2018 to June 2020
UW Industrial and Systems Engineering – with Dr. Albert; resulting paper in press.
- Completed and summarized computational results using Python for a stochastic programming model that optimizes the location and dispatching of emergency medical service (EMS) vehicles
- Modified associated discrete event simulation and dispatching algorithm in Python

Additional Research Experience

Research Assistant October 2020 to Present
National Institute of Justice (NIJ), RAP program
- Developed two NIJ solicitations and part of another solicitation's grant review process
- Added to two NIJ research portfolios on hot-spot mapping metrics and mass shootings
- Enhanced Office of Justice Program's human subjects IRB approval process
- Organized April 2021 Forensic Intelligence Workshop for over 50 federal partners

Iowa e-Health Project –Research Assistant October 2018 to May 2020
University of Wisconsin Madison, Center for Health and Systems Studies – with Dr.Gustafson & Dr.Molfenter
- Study Overview: RCT on implementing an addiction-based recovery mobile application in the clinic setting.
- Working with Iowa Department of Public Health to obtain de-identified data for the study
- Wrote protocol paper, summarized survey results, and developed analytic procedures for future results paper
- Planned and developed study protocol execution and materials for training at 11 addiction organizations

Predicting Post Surgery Prescribing of Opioids – Graduate Research Assistant September 2017 to May 2018
UW Industrial and Systems Engineering – with Dr. Bain MD & Dr. Li
- Developed study design after completing literature review and interviews of physicians and patients
- Managed and cleaned database of 250+ orthopedic patients, which was collected from multiple sources
- Built logistic regression model and visualization in Python from statistically significant variables
- Resulting paper: https://doi.org/10.1109/JBHI.2020.2992973

Iowa Food Hub Network Project – Undergraduate Research Assistant September 2016 to June 2017
Iowa State University – with Dr. Krejci
- All deliverable materials can be found on our project site: https://sites.google.com/site/ifhnetwork/home
- Created labeling system in VBA and integrated it into our inventory tracking-transportation application
- Related Publications: paper at 2017 IISE Conference, Presented poster ISU IMSE Board Meeting. Apr. 20.

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Industry Experience

Amazon – DIAL OR Scientist Intern, Amazon Devices optimization team — Summer 2020
Virtual Due to COVID-19
- Created a new solver that separated the final Amazon Devices supply chain optimization model from the main Amazon Devices Solver, allowing it to be solved separately and repeatedly
- Communicated and documented model logic for optimization team, demand planning team and contractors
- Corrected and simplified several model constraints handling backlog and inventory penalties

Corporate Quality Engineering Intern — Summer 2016 & Summer 2017
Shure Incorporated – Niles, IL
- Utilized Minitab to analyze a destructive gauge R&R, Salt-fog study using ANOVA, etc.
- Used hypothesis testing and accelerated life testing to determine durability and reliability of new products

Safety & Ergonomics Intern — January 2015 to August 2015
Lennox International – Marshalltown, IA

Service and Leadership Experience

Graduate Student Advisory Council – ISYE representative — October 2020 to Present
- GSAC provides feedback on topics effecting graduate student life to College of Engineering Leadership
- Participate in ISYE Student and Alumni Affairs cluster focused on enhancing the ISYE student experience
- Created 24/7 google form for ISYE graduate students to provide insight into future GSAC discussions

INFORMS UW-Madison Student Chapter - Vice President — September 2019 to September 2020
- Won INFORMS 2020 Student Chapter Annual Award at the Cum laude level
- Advised undergraduate team in INFORMS Spring 2020 student competition

Tau Beta Pi Wisconsin Alpha Student Chapter - Pi Mile Run Co-Coordinator — October 2018 to April 2019
- Organized, fundraised, and secured a venue and permits for a local 5k/10k that hosted 100 runners and raised over $2,000 for Occupaws Guide Dog Association

Tau Beta Pi Iowa Alpha Student Chapter - Vice President — January 2016 to May 2017
- Led committee to compete in SourceAmerica's 2016-2017 Design Challenge
- Collaborated with the Advisory board to provide direction and new ideas for the chapter

Additional Presentation Experience

Guest Lecturing: Modified and presented course instructor's materials during course lecture
- I SY E 524 – Introduction to Optimization – 75 min ~ 60 Graduate students
  - June 17th & 19th, 2019 — Course Introduction & Review of Linear Algebra
- I SY E 323 – Operations Research: Deterministic Modeling – 75 min ~ 65 Undergraduate students
  - November 6th, 2018 — Integer Programming
  - April 26th, 2018 — the Branch and Bound Algorithm

Teaching Assistant (TA): Created and facilitated weekly discussion sections to summarize and practice course material. Held weekly office hours. Provided feedback to students to improve their knowledge.
- I SY E 323 – Operations Research – Deterministic Modeling — Spring 2018, Fall 2018
- I SY E 313 – Engineering Economic Analysis — Fall 2017, Summer 2018

Tutor: Worked with 5 groups, of 3-6 students. Each group meet bi-weekly. Worked through example problems and answered student questions.
- Statistics 231 – Introduction to Statistical Concepts and Methods — Fall 2016, Spring 2017
- Physics 222 – Introduction to Classical Physics 2 — Fall 2016, Spring 2017

Recent Honors and Awards

National Institute of Justice Research Assistant Program Fellowship — Fall 2020 & Fall 2021
Rea & Gustafson Award — Fall 2019
Chancellor's Opportunity Award — Fall 2017
REOMAC Foundation Scholarship — Fall 2015

Relevant Software and Programming Knowledge

Python	Julia	Matlab	R	VBA	Java	Minitab
Arena	SQL	Working knowledge of:		SPSS	HTML/CSS/JavaScript	