

Veronica M. White (she/her)

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RESEARCH INTERESTS

Methodologies: Queueing, simulation (discrete event), program evaluation (causal inference, statistical tests), optimization, implementation science.

Application Areas of Interest: public health and public safety (e.g., substance use, mental health, public policy, policing, healthcare access, criminal justice, homelessness)

Statement: My research interests involve modeling, developing, and evaluating interconnected systems that improve public health and safety outcomes via policies and programming. In the past, I used analytics, data science, and operations research approaches to the emerging intersection of policing and substance use disorder, where 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). In the future, I plan to continue to use these methodologies to provide insight into how to connect, implement, and improve public health programs to criminal justice issues.

EMPLOYMENT

Assistant Professor, Industrial and Manufacturing Engineering Start Date: Aug 2024
FAMU-FSU College of Engineering, Tallahassee, FL

EDUCATION

Ph.D. – Industrial & Systems Engineering Aug 2024
University of Wisconsin-Madison
Dissertation: Mathematical modeling to support mental health-focused policing and substance use disorder treatment
Committee: Dr. Laura A. Albert (Chair), Dr. Gabriel Zayas-Cabán, Dr. Yonatan Mintz, Dr. Joel Hunt, and Dr. Marguerite Burns

MS – Industrial & Systems Engineering Spring 2019
University of Wisconsin-Madison

BS – Industrial & Manufacturing Systems Engineering *Magna cum Laude* 2017
Iowa State University of Science & Technology

GRANTS

External

INFORMS DEI Ambassador Program, \$1,700	2023
INFORMS DEI Ambassador Program, \$1,930	2022
National Institute of Justice Research Assistant Program, \$32,000	2021
National Institute of Justice Research Assistant Program, \$80,260	2020

Internal

Student Research Grants Competition, \$600	2019
<i>Conference Presentation Fund - University of Wisconsin-Madison</i>	

PUBLICATIONS

Journal Publications

1. Nyland, J. E., Zhang, A., Balles, J. A., Nguyen, T. H., **White, V. M.**, Albert, L. A., Henningfield, M. F., & Zgierska, A. E. (2024). [Law enforcement-led, pre-arrest diversion-to-treatment may reduce crime recidivism, incarceration, and overdose deaths: Program evaluation outcomes](#). *Journal of Substance Use and Addiction Treatment*, 165, 209458. <https://doi.org/10.1016/j.josat.2024.209458>.
2. **White, V. M.**, Hunt, J., & Green, B.(2023). [A discussion of current crime forecasting indices and an improvement to the prediction efficiency index for applications](#). *Security Journal*. <https://doi.org/10.1057/s41284-023-00367-4>.
3. Zhang, A., Balles, J. A., Nyland, J. E., Nguyen, T. H., **White, V. M.**, & Zgierska, A. E. (2022). [The relationship between police contacts for drug use-related crime and future arrests, incarceration, and overdoses: a retrospective observational study highlighting the need to break the vicious cycle](#). *Harm Reduction Journal*, 19, 67. <https://doi.org/10.1186/s12954-022-00652-2>
4. **White, V. M.**, Avendano, S. A., Albert, L. A., Zgierska, A.E., Balles J., & Zayas-Cabán G. (2021). [The impact of a community-level initiative that promotes engagement in addiction treatment on recidivism](#). *Drug and Alcohol Dependence*, 227. DOI: 10.1016/j.drugalcdep.2021.108915
5. Zgierska, A. E., **White, V. M.**, Balles, J., Nelson, C., Freedman, J., Nguyen, T. H., & Johnson, S. C. (2021). [Pre-arrest diversion to addiction treatment by law enforcement: protocol for the community-level policing initiative to reduce addiction-related harm, including crime](#). *Health & Justice*, 9(1), 1-9. DOI: 10.1186/s40352-021-00134-w
6. Yoon, S., Albert, L. A., & **White, V. M.** (2021). [A stochastic programming approach for locating and dispatching two types of ambulances](#). *Transportation Science*, 55(2), 275-296. DOI: 10.1287/trsc.2020.1023
7. **White, V. M.**, Molfenter, T., Gustafson, D. H., Horst, J., Greller, R., Kim, J. S., ... & Toy, A. (2020). [NIATx-TI versus typical product training on e-health technology implementation: a clustered randomized controlled trial study protocol](#). *Implementation Science*, 15(1), 1-12. DOI: 10.1186/s13012-020-01053-4
8. Lee, S., Wei, S., **White, V.**, Bain, P., Baker, C., & Li, J. (2020). [Classification of opioid usage through semi-supervised learning for total joint replacement patients](#). *IEEE Journal of biomedical and health informatics*, 25(1), 189-200, Jan. 2021. DOI: 10.1109/JBHI.2020.2992973

Conference Proceedings

9. **White, V. M.** & Albert, L. A. (2024). [Alternative police response models to crisis calls](#). In Proceedings of the *IISE Annual Conference & Expo*. May 18 – 21. Montreal, Canada.
10. **White, V. M.**, & Hunt, J. (2022). [Measuring how relatively “good” a hot-spot map is: A summary of current metrics](#). In Proceedings of the *IISE Annual Conference & Expo*. May 20 – 24. Seattle, WA.

11. Mittal, A., **White, V. M.**, & Krejci, C. (2017). [A framework for collaboration among regional food system participants](#). In Proceedings of the *Industrial & Systems Engineering Research Conference*. May 20 - 23. Pittsburgh, PA.

Government Reports

12. Hudgins, C. D., **White, V. M.**, Kane, R., & O'Brien, M (2024). [Sentinel Event Review for Successful Transition and Reentry Together \(START\) Program in the Eastern District of Wisconsin](#). *National Institute of Justice*. NCJ: 307990.
13. National Institute of Justice. Nov. (2023). [Understanding Forensic Intelligence: The NIJ Framework](#). NCJ: 307773. (co-author to the five pillars of Forensic Intelligence section).
14. **White, V. M.**, Applegarth, M., Hudgins, C., & Hunt, J. (2022). [The NIJ Recidivism Forecasting Challenge: Contextualizing the Results](#). *National Institute of Justice*. NCJ: 304110.
15. Hudgins, C. D., **White, V. M.**, & Martin, E. Advancing Evidence-Based Practices in Criminal Justice with Implementation Science. *National Institute of Justice*. (In Peer Review).
16. **White, V. M.**, Hudgins, C. D., Rief, R., Pimsler, M., & Hunt, J. Meta-Analyses of the 2022 NIJ Forecasting Challenge Winning Submissions. *National Institute of Justice*. (In Peer Review).

Submitted and Working Papers

17. **White, V. M.** & Albert, L. A. (2023). [Evaluating diversion and treatment policies for opioid use disorder](#). arXiv. Preprint. <https://arxiv.org/abs/2311.05076>.
18. **White, V. M.** & Albert, L. A. Police Response Models for Crisis Calls using Queueing Theory. (Working paper)

Handbooks and Guides

19. **White, V.M.**, Haseltine, C., & Ogidigben, M. (2023). [INFORMS Student Chapter Student Chapter K-12 Outreach Guide](#). INFORMS Outreach Strategic Initiative. INFORMS DEI Ambassador Program.

PRESENTATIONS

* Indicates Presenting Author(s)

Conference Presentations

20. **White, V. M.***, Applegarth, M., Hudgins, C., & Hunt, J. [The NIJ Recidivism Forecasting Challenge: Contextualizing the Results](#). 2023 ASC Annual Meeting. Nov. 15-18th. Philadelphia, PA.
21. **White, V. M.*** & Albert, L. Opioid Treatment Policies Using Discrete Event Simulation. 2023 INFORMS Annual Meeting. Oct. 15-18. Phoenix, AZ.
22. **White, V. M.***, Ogidigben, M.*, & Haseltine, C. A.*, Strategic Initiative: High School Outreach Flash Talk. 2023 INFORMS Annual Meeting. Oct. 15-18. Phoenix, AZ.
23. **White, V. M.*** & Albert, L. Diversion and Treatment Policies for Opioid Use Disorder: A Discrete Event Simulation Approach. 2022 INFORMS Annual Meeting. Oct. 16-19. Indianapolis, IN.
24. **White, V. M.***, Ogidigben, M.*, Haseltine, C. A.*, & Scaria, E., Strategic Initiative: High School Outreach Flash Talk. 2022 INFORMS Annual Meeting. Oct. 16-19. Indianapolis, IN.

25. **White, V. M.*** & Albert, L. Analyzing Police Response Models with Multiple Types of Vehicles. 2022 International Association of Crime Analysts. August 22–26. Chicago, IL.
26. **White, V. M.*** & Hunt, J. Measuring how relatively “good” a hot-spot map is: A summary of current metrics. 2022 IISE Annual Conference & Expo. May 20–24. Seattle, WA.
27. **White, V. M.*** & Albert, L. Discrete Event Simulation for Modeling Addiction Treatment Public Policy Changes in Dane County, Wisconsin. 2021 INFORMS Annual Meeting. Oct. 24-27. Virtual.
28. **White, V. M.***, Zayas-Cabán, G., Alvarez, S. A., & Albert, L. The Impact of a Community-level Initiative That Promotes Engagement In Addiction Treatment On Crime Reduction. 2020 *INFORMS Annual Meeting*. Nov. 8-13. Virtual.
29. Mittal, A.*, **White, V. M.***, & Krejci, C. C. (2017). A Framework for Collaboration among Regional Food System Participants. At the *Industrial & Systems Engineering Research Conference*. May 20 - 23. Pittsburgh, PA.
30. Mittal, A.*, **White, V. M.***, Craven, T.*, Grimm, J., & Krejci, C. C. (2016). Regional Food Hub Coordination Inventory Management System. At the *2016 Annual Iowa Organic Conference*. Nov. 13 - 14. Iowa City, IA.

Project-Related Stakeholder Presentations

31. “Operations Research Meets Criminal Justice.” May 2021. *Let’s RAP! Series*. National Institute of Justice, Washington, D.C. (Virtual).
32. “Amazon Devices Fulfillment Center Allocation Solver.” Aug. 2020. *Internship Project Report Out*. Amazon Inc. Seattle, WA. (Virtual).
33. “Preliminary MARI Outcomes Analysis.” Feb. 2020 & Jun. 2019 at the *MARI Operations Team Monthly Meeting*. Madison, WI.
34. “Counselor Training for RISE-Iowa Mobile Substance Use Disorder (SUD) Treatment Application.” Fall 2019-Spring 2020 as a part of an implementation RCT. Multiple SUD clinic locations across Iowa.
35. “Predicting Opioid Prescription Level Post TJR Surgery.” (2018). At the *Opioid Task Force Meeting*. Jan. 11. Madison, WI.
36. “Iowa Food Hub Collaboration Network” with Mittal A. (2017). At the *Iowa & Michigan Food Hub Managers Working Group Meeting*. May 9 - 10. West Union, IA.

Poster Presentations

37. **White, V. M.***, Meredith, M.*, & Albert, L. Evaluation of a Two-Year Policing Initiative. 2019 *INFORMS Annual Meeting*. Oct. 20 – 23. Seattle, Washington.
38. Nguyen, T.*, Zgierska, A., & **White, V.** (2019) Madison Addiction Recovery Initiative. *NAPCRG 2019 Practice-based Research Network Conference*. Jun. 24-26. Bethesda, Maryland.

❖ Award: Runner-up Best Poster

39. **White, V. M.***, Mittal, A., & Krejci, C. C. (2017). [Inventory Tracking for Iowa’s Regional Food Network](#). Poster presented at the *Industrial Advisory Board Meeting*. Apr. 20. Industrial & Manufacturing Systems Engineering, Iowa State University, Ames, IA.

RESEARCH EXPERIENCE

Policing and Opioid Use Disorder – Research Assistant

Oct. 2018 to Present

UW Industrial and Systems Engineering – Dr. Albert & Dr. Zayas-Cabán

- Study Overview: NSF funding for analysis of a smart policing initiative, **see [5]**, which will be used for optimization models in illicit drug interdiction and police scheduling
- Creating graphs and simple statistical analysis done with RStudio, **see [33,37,38]**
- Developed causal inference methods to evaluate 6-month recidivism outcomes, **see [1,28]**
- Developing DES simulation to model county-level impacts of various policies, **see [17,20]**
- Future work: Optimizing police and mental health 988 dispatching using Python, **see [18]**

Criminal Justice Research – Research Assistant Program October 2020 to March 2023*National Institute of Justice*

- 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
- Wrote two papers on criminology hot-spot metrics, **see [9,1]**
- Wrote two NIJ reports on the 2021 NIJ Recidivism Forecasting Challenge, **see [14,16]**
- Enhanced the data collection and analyses of the Eastern District of Wisconsin's Successful Transition and Re-entry Together (START) program, **see [12]**

Iowa e-Health Project – Research Assistant October 2018 to August 2020*Center for Health and Systems Studies (CHESS) – Dr. Gustafson & Dr. Molfenter*

- Study Overview: Randomized control trial on implementing an addiction-based recovery mobile application in the clinic setting, **see [7]**
- Worked with Iowa Department of Public Health to obtain de-identified data for the study
- Planned and developed study protocol execution and materials for training at 11 addiction organizations, **see [34]**

Stochastic Ambulance Dispatching Modeling – Research Assistant May 2018 to July 2020*UW Industrial and Systems Engineering – Dr. Albert*

- Completed and summarized computational results using Python for a stochastic programming model that optimizes the location and dispatching of emergency medical service (EMS) vehicles
- The resulting paper is published in Transportation Science, **see [6]**

Graduate Research Assistant September 2017 to May 2017*University of Wisconsin-Madison – Dr. Jingshan Li & Dr. Philip Bain MD*

- Presented initial findings to stakeholders, **see [35]** (e.g., SSM health, African American Opioid Coalition of Dane County, Safe Communities)
- Managed and cleaned database of 250+ orthopedic patients
- Built logistic regression model and visualizations in Python from statistically significant variables, **see [8]**

Undergraduate Research Assistant, see [11,29,30,36,39] September 2016 to June 2017*Iowa State University – Dr. Caroline Krejci***TEACHING EXPERIENCE**

Teaching Assistant: I held twice-weekly office hours and provided regular feedback to students. Courses ranged from 40 students to over 100 students. For the 300 level courses I prepared and facilitated 2-3 weekly discussion sections to summarize and practice course material with 25-35 students each.

- I SY E 323 – Operations Research: Deterministic Modeling Spring 2018, Fall 2018
- I SY E 524 – Introduction to Optimization Summer 2018
- I SY E 313 – Engineering Economic Analysis Fall 2017, Summer 2018

Guest Lecturing:

- I SY E 524 – Introduction to Optimization – 75 min ~ 60 students
 - June 17th & 19th, 2019 — Course Introduction & Review of Linear Algebra
- I SY E 323 – Operations Research: Deterministic Modeling – 75 min ~ 65 students
 - Nov. 6, 2018 — Integer Programming
 - Apr. 26, 2018 — the Branch and Bound Algorithm

Tutor: Worked with five groups of 3-6 students. Each group met bi-weekly and worked through example problems and student questions.

- Statistics 231 – Introduction to Statistical Concepts & Methods Fall 2016, Spring 2017
- Physics 222 – Introduction to Classical Physics 2 Fall 2016, Spring 2017

Supplemental Instruction Leader: Facilitated 3-4 open weekly sessions of 2-20 students.

Conducted open exam reviews of 30-100+ students. Created practice material available at sessions and online. Participated in workshops that taught communication and facilitation techniques.

- Engineering 160 – Engineering Problems Fall 2015, Spring 2016
- Economics 101 – Principals of Microeconomics Fall 2014

RESEARCH MENTORING**Undergraduates**

- Colleen Wall, UW – Madison ISYE, Summer - Fall 2021
 “Time-Series Modeling of Opioid Related Hospital Encounters”
 ❖ Awarded 3rd in OR/MS Tomorrow 2021 Mini-Poster Competition
- Meghan Meredith, UW – Madison ISYE, Spring 2018 - Spring 2019
 “Literature Review and Statistical Analyses of a Community Policing Initiative”
- Praan Pisitthakarn, UW – Madison ISYE & CHESS, Spring 2019
 “VBA Graphs for an Addiction Mobile Treatment Implementation RCT”

PROFESSIONAL DEVELOPMENT**Colloquia, Seminars, and Workshops:**

- IISE Program — Future Faculty Fellows (3F), Nov. 2021 to May 2022
- INFORMS 2021 Doctoral Student Colloquium, Oct 23, 2021

Courses and Trainings:

- Delta Program Book club — Black Brown Bruised by Ebony McGee, Spring 2021
- Delta Program — Research Mentor Training, Summer 2019
- CIRTL Network course — Diversity in the College Classroom, Spring 2019

SERVICE

Session Chair – “Policing and the Opioid Crisis” Oct. 2023
INFORMS Annual Meeting 2023 – Pheonix, AZ

Committee Member of Graduate Student Advisory Committee (GSAC) Nov. 2020 to Present
College of Engineering – University of Wisconsin Madison

Ad Hoc Reviewer Aug. 2020 to Present

Implementation Science

- Cluster Member** of Student and Alumni Affairs (SAA) Cluster Dec. 2020 to December 2022
Industrial and Systems Engineering Department – University of Wisconsin-Madison
- Session Co-Chair** with Adam Schmidt, “Simulation Applications for Public Policy” Oct. 2021
INFORMS Annual Meeting 2021
- Grant Reviewer** for Chapter Development Fund Jun. 2021 to Aug. 2021
National Science Policy Network (NSPN)
- Vice President** May 2019 to April 2020
INFORMS Student Chapter– University of Wisconsin Madison
- Scribe** – Wisconsin Institute for Healthcare Systems Engineering Conference May 2018
- Pi Mile Run Co-Coordinator** Oct. 2018 to Apr. 2019
Tau Beta Pi Engineering Honors Society – University of Wisconsin-Madison
- Managed, fundraised, and secured permits and venue for local 5k/10k that hosted 100 runners and raised over \$2,000 for Occupaws Guide Dog Association
- Vice President** Jan. 2016 to May 2017
Tau Beta Pi Engineering Honors Society – Iowa State University
- Led committee to compete in SourceAmerica’s 2016-2017 Design Challenge
 - Oversaw projects team, which organizes several community-wide events each semester
 - Collaborated with the Advisory board to provide direction and new ideas for the chapter
- Vice President of Membership Development** Jan. 2015 to Dec. 2015
Iowa Gamma Chapter of Pi Beta Phi – Iowa State University
- Developed and implemented a new Academic Program for the 170-member chapter
 - Organized events such as Faculty Appreciation Night, values-based workshops, etc.

MEDIA AND PRESS

Social Media

- Personal Blog: <https://vmwhite.github.io/blog.html>
- Twitter Handle: [@VeronicaMWhite](#)
- Awarded [Best Tweet](#) of ACM EAAMO 2021 Conference

News Articles

- [Increasing Underrepresented Students’ Exposure to OR/MS through K-12 Outreach](#) – OR/MS article
- [What’s Your StORy? Veronica White](#) – OR/MS Today Series
- [Results from the National Institute of Justice recidivism forecasting challenge](#) – Corrections Today – March/April 2022, pages 12-16
- [MARI reduces six-month recidivism odds](#) –The Capital Times News – Madison, WI

Other Press and News

- [Why Operations Research? Reflecting on Our Journeys to Becoming Ph.D. students in Operations Research](#) – INFORMS DEI Blog Post
- [Graduate students work to bolster diversity in operations research](#) – by Thomas Ziemer
- [New study reveals efficacy of Madison’s addiction recovery initiative](#) – Radio Interview with WORT 89.9 FM’s Jonah Chester
- [Study shows effectiveness of substance-use diversion program](#) – by Thomas Ziemer
- [The food hub managers working group](#) – by Savanna Lyons

- [Local foods program supports food hubs across Iowa](#) – by *Teresa Wiemerslage*

HONORS AND AWARDS

INFORMS DEI Ambassador	Spring 2022 & Spring 2023
DAS/SDP Decision Analysis Practice Award, Finalist	Fall 2022
IISE Future Faculty Fellows (3F) Program	Spring 2022
National Institute of Justice Research Assistant Program Fellowship	Fall 2020 & Fall 2021
Rea & Gustafson Fellowship	Fall 2019
Chancellor's Opportunity Award	Fall 2017
REOMAC Foundation Scholarship	Fall 2015
Wallace Scholar	Fall 2014
Tau Beta Pi – Iowa Alpha Scholar	Fall 2014
Award for Competitive Excellence	Fall 2013
Dean's List Iowa State University	Fall 2013 – Spring 2017
Top 2% of Graduating Class	Fall 2013

INDUSTRY EXPERIENCE

DIAL OR Scientist Intern, see [32] Summer 2020

Amazon – Virtual – Seattle, WA

- Created a new solver that separated the final optimization model from the primary Amazon Devices Solver, allowing it to be solved separately and repeatedly
- Improved several constraints of the separated model
- Communicated the new solver's purpose and its logic to various stakeholders such as my team, demand planning team, and contractors in the supply chain for the primary model.
- Researched methods to improve optimization solver times
- Documented solver's inner workings for the technical team & larger Amazon audience

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 & accelerated-life testing to evaluate new product reliability
- Implemented a new overseas data collection system
- Created 7 test plans for product approval and conducted analyses on results

Safety and Ergonomic Intern January 2015 to August 2015

Lennox Industries Inc. – Marshalltown, IA

- Led the Joint Ergonomics Committee in completing over 23 projects
- Aided in 3 Rapid Continuous Improvement projects that lead to ergonomic improvements
- Completed 85 Washington Ergonomic Assessments for various work cells

ORGANIZATIONS AND INTERESTS

INFORMS: Women in OR/MS (WORMS) Forum, Minority Issues Forum (MIF), Optimization Society, Decision Analysis Society (DAS), Analytics Society, Simulation Society, Public Sector OR Section, Service Science Section, Multiple Criteria Decision-Making Section, Junior Faculty Interest Group

Institute of Industrial and Systems Engineers (IISE)

Tau Beta Pi (TBP) – Engineering Honors Society

NSPN – National Science Policy Network

Philharmonic Chorus of Madison