Sydney J. Litterer

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Pronouns: she/her/hers

Education

Doctor of Philosophy in Criminal Justice, August 2022-present
Michigan State University, East Lansing, MI

Bachelor of Science in Mechanical Engineering, Certificate in Peace Studies
University of Kentucky, Lexington, KY
Graduated May 2019, Summa Cum Laude (4.00 GPA)
Lewis Honors College

Research Experience

RAND Corporation, Arlington, VA – *Research Assistant*
July 2019-present

- Performed research on national security issues and emerging technologies to evaluate and inform public policy
- Conducted quantitative analysis and data visualization
- Conducted qualitative data collection and analysis
- Wrote reports and created briefings presenting research design, analysis, results, and recommendations
- Created, assessed, and evaluated metrics and measurement frameworks
- Collaborated with team members to design and execute research games on short deadlines
- Administered an organization-wide crowdsourcing effort

University of Kentucky, Department of Political Science, Lexington, KY – *Undergraduate Research Student*
January-May 2019

- Performed statistical analysis of the impact of varying forms of violence on women's legislative representation for peace studies capstone project

University of Kentucky, Department of Mechanical Engineering, Lexington, KY – *Undergraduate Research Student*
August-December 2017

- Set up, ran, and analyzed computational fluid mechanics models to confirm results of other analyses

Karlsruhe Institute of Technology, Institute for Material Handling and Logistics, Karlsruhe, Germany – *Undergraduate Research Student*
March-August 2016

- Created a computer model depicting the operational envelope for the end of a robotic arm

Publications

Peer-Reviewed Publications

Romita Grocholski, K., Savitz, S., **Litterer, S.**, Cooper, M., McKinney, C., & Ziebell, A. (2023). *Assessing the Impact of Diverse Intermediate Force Capabilities and Integrating Them into Wargames for the U.S. Department of Defense and NATO* (RR-A1544-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA1544-1

Litterer, S., Brookes, J., Worman, S., & Shlapak, D. (2023). *Network Logistics Games: Design and Implementation* (RR-A470-2), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA470-2

Parker, E., Gonzales, D., Kochhar, A. K., **Litterer, S.**, O'Connor, K., Schmid, J., Scholl, K., Silberglitt, R., Chang, J., Eusebi, C. A., & Harold, S. W. (2022). *An Assessment of the U.S. and Chinese Industrial Bases in Quantum Technology* (RR-A869-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA869-1

Romita Grocholski, K., Savitz, S., Wong, J. P., **Litterer, S.**, Khan, R., & Cooper, M. (2022). *How to Effectively Assess the Impact of Non-Lethal Weapons as Intermediate Force Capabilities* (RR-A654-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA654-1

Martin, B., Linick, M. E., Fraade-Blanar, L., Gardner Burns, J., Foran, C., Romita Grocholski, K., Hastings, K. C., **Litterer, S. J.**, Lynch, K.F., & Mondschein, J. (2021). *Measuring Strategic Readiness: Identifying Metrics for Core Dimensions* (RR-A453-1). Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RR-A453-1

Mayer, L. A., Schmid, J., **Litterer, S. J.**, & Blumenthal, M. S. (2021). *A Structured Elicitation Approach to Identify Technology-Based Challenges With Application to Inform Force Planning for Technological Surprise* (RR-A701-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RR-A701-1

Wirth, A. J., **Litterer, S.**, Loredo, E. N., Baldwin, L. H., & Sanchez, R. (2021). *Keeping the Defense Industrial Base Afloat During COVID-19: A Review of Department of Defense and Federal Government Policies and Investments in the Defense Industrial Base* (RR-A1392-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA1392-1

Other Publications

Litterer, S. & Romita Grocholski, K. (2022, April 22). Effective Use of Nonlethal Weapons Could Require Combating Disinformation. *RealClearDefense*. Link to article.

Romita Grocholski, K., Savitz, S., Wong, J. P., **Litterer, S.**, Khan, R., & Cooper, M. (2022). *Evaluating the Use of Non-Lethal Weapons in Operational Environments* (RB-A654-1), Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RBA654-1

Works in Progress

Litterer, S. (submitted to journal). Conservative Anger and Police Misconduct: Exploring Conservative Discussion of Police on Social Media.

Litterer, S. (in progress). Manifestos and Moral Reasoning: How Mass Murderers Rationalize Killing.

Speaking Engagements

Gaming Contested Logistics: A Case Study from J4 Gaming, RAND Center for Gaming Brown Bag – Innovations Series, May 3, 2022

- Described the design for a newly-developed research game focusing on movement of supplies through a logistics network
- Offered suggestions for adapting the design to answer future research questions

Grants and Fellowships

Awarded

Graduate School, Michigan State University, *University Distinguished Fellowship*, 2022

- Awarded to approx. 40 incoming graduate students at Michigan State University each year; provides 5 years of full funding for graduate studies

College of Social Science, Michigan State University, *Early Start Program Fellowship*, 2022

- Provides 3 years of funding for summer research with faculty member of choice

Honorable Mentions

National Science Foundation, Graduate Research Fellowship Program, *Honorable Mention*, 2023

Awards and Achievements

RAND Corporation, Spotlight Award, 2021

Commonwealth of Virginia, Engineer-in-Training designation, 2020

Department of Political Science, University of Kentucky, Best Peace Studies Capstone Project, 2019

Department of Mechanical Engineering, University of Kentucky, Outstanding Junior in Mechanical Engineering, 2017

University of Kentucky Education Abroad Scholarship, 2015

University of Kentucky, Patterson Scholarship (full tuition, room and board), 2014

- Academic scholarship based on finalist position in the National Merit Scholarship competition – *Valued at approx. $140,000*

National Merit Scholarship, 2014

Academic Service

Mentor, Early Start Program, College of Social Science, Michigan State University, June 2023-present

Treasurer, Graduate Student Association, School of Criminal Justice, Michigan State University, January 2023-present

Skills

Research Methodologies:

Quantitative: Statistical analysis, mathematical modeling (basic geospatial analysis, agent-based modeling, network analysis, and machine learning)

Qualitative: Thematic analysis, grounded theory, measurement framework and metric development, research game design and implementation, and historical analysis

Computer Programs:

Statistics: Stata, R, Minitab

Other data analysis and modeling: Dedoose, ArcGIS, MATLAB (basic Python, NetLogo, and Visual Basic for Applications)

Engineering: Solidworks, NX, Autodesk Inventor, Creo Parametric, Revit, AutoCAD LT, Abaqus

Communication: Technical Writing, Public Speaking, Cross-Cultural Communication

Languages: Read, write, and speak basic French and German

Industry Experience

Ethicon, Cincinnati, OH – *Co-op*

May-August 2018, May-August 2017, August-December 2016

- Led component redesign process; provided prototypes and appropriate test methods for proof of concepts
- Provided statistically sound recommendations through test development and data analysis
- Developed predictive models for component behavior
- Designed components and test fixtures for manufacture using solid modeling programs
- Managed 7 committees with a total of 50 members organizing classes, volunteering opportunities, and networking events for co-ops

Engineering Ministries International, Calgary, AB, Canada – *Intern*

January 2018-May 2018

- Worked with a multidisciplinary team of engineers and architects on a project based in Haiti
- Completed project research and wrote/compiled final report for client
- Designed electrical plans and drafted architectural drawings for multiple buildings using Revit and AutoCAD

Capital One Summit for Developing Leaders, Plano, TX – *Workshop Participant*

January 2016

- Developed a solution for a business problem relevant to Capital One in collaboration with team members

- Presented the solution to a panel of Capital One executives

Educational Travel

Semester Exchange – Karlsruhe Institute of Technology   March-August 2016
- Completed engineering coursework in German and English
- Conducted research with the Institute for Material Handling and Logistics

Calculus lll Education Abroad Program, Karlsruhe, Germany   June-July 2015
- Completed one semester of Calculus lll content in 5 weeks

Community Volunteer Experience

The Knitting People, East Lansing, MI

- Knit and crochet blankets and clothing items for donation to young families and individuals experiencing illness or homelessness

Highlands Urban Garden, Arlington, VA

- Grew and harvested food for local food banks

Read to Succeed, Lexington, KY

- Led a weekly children's reading program designed to improve reading proficiency
- Worked with recent immigrants from China

International Friends, Lexington, KY

- Met with international students to answer cultural questions and work on conversational English

Refugee Aid, Karlsruhe, Germany

- Participated in counseling sessions with refugees