Catherine King

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PROFILE

Computational social scientist focused on developing effective and practical interventions to combat misinformation. My research integrates network science, social media analytics, survey design, and user studies to design and evaluate scalable countermeasures that promote information integrity.

Research interests: misinformation; social media analytics; computational social science; network science; generative AI

EDUCATION

Carnegie Mellon University – *Ph.D. in Societal Computing*   *2025*
Software and Societal Systems Department
Dissertation: *Effective and Practical Strategies for Combatting Misinformation*
Committee: Kathleen M. Carley (Chair), Hong Shen, Chris Labash, Pablo Barberá

The College of William & Mary – *M.S. in Computational Operations Research*   *2016*
Capstone: *Optimizing voter wait times* (simulation and paper)
Advisor: Lawrence M. Leemis

The College of William & Mary – *B.S. in Mathematics, Minor in Computer Science*   *2014*
Summa cum laude, Honors in Mathematics
Thesis: *Nonlinear models of zooplankton communities*
Committee: Sarah Day (Advisor), Drew LaMar (Advisor), Mark Brush, Lawrence M. Leemis

PUBLICATIONS

Under Review

- **King, C.,** Phillips, S. C., and Carley, K. M. (2025). Public support for misinformation interventions depends on perceived fairness, effectiveness, and intrusiveness. *The Journal of Online Trust and Safety.*

Peer-Reviewed

- **King, C.** and Carley, K. M. (2025). Promoting Social Corrections: A Media Literacy Intervention for Misinformation on Social Media. *Proceedings of the 2025 SBP-BRiMS Conference.*

- **King, C.,** Carragher, P., and Carley, K. M. (2025). Mapping the Scientific Literature on Misinformation Interventions: A Bibliometric Review. *ICWSM Workshop Proceedings.*

- **King, C.,** Phillips, S. C., and Carley, K. M. (2025). A path forward on online misinformation mitigation based on current user behavior. *Scientific Reports.* [Blog Post]

- Moffitt, J. D., **King, C.,** and Carley, K. M. (2024). Connecting the Domains: An Investigation of Internet Domains found in COVID-19 Conspiracy Tweets *Computational and Mathematical Organization Theory.*

- **King, C.** and Carley, K. M. (2023). Gender dynamics on Twitter during the 2020 Democratic Presidential Primary. *Social Network Mining and Analysis* (2023) [Blog Post]

- Moffitt, J. D., **King, C.,** and Carley, K. M. (2021). Hunting Conspiracy Theories during the COVID-19 Pandemic, *Social Media + Society.* [Blog Post]

- Bellutta, D., **King, C.,** and Carley, K. M. (2021). Deceptive accusations and concealed identities as misinformation campaign strategies. *Computational and Mathematical Organization Theory.*

- **King, C.,** Bellutta, D. and Carley, K. M. (2020). Lying about lying on social media: a case study of the 2019 Canadian elections. *Proceedings of the 2020 SBP-BRiMS Conference.* **[BEST PAPER AWARD]**

- Glasser, S. and **King, C.** (2019). System dynamics for estimating sUAS operations. *Proceedings of the 2019 Winter Simulation Conference.*

- **King, C.** and Leemis, L. M. (2016). [Data analysis and simulation: Optimizing voter wait times](#). *Proceedings of the 2016 IEEE Systems and Information Engineering Design Symposium.*
- **King, C.,** Shipman, K., Day, S., and LaMar, M. D. (2013). [Dimension and mortality in linear stage class models of *Acartia tonsa*](#). *Proceedings of the Sixth Symposium on Beer.*

Technical Reports

- **King, C.,** Lepird, C. S., and Carley, K. M. (2021). [Project OMEN: Designing a Training Game to Fight Misinformation on Social Media](#). Carnegie Mellon University, Institute for Software Research.

Poster Presentations

- **King, C.** and Carley, K. M. (2024). Leveraging Media Literacy Training to Promote Social Corrections. *IDeaS and SBP-BRiMS Conferences.*
- **King, C.,** Carragher, P., and Carley, K. M. (2023). Citation Network Analysis of Misinformation Interventions. *SBP-BRiMS Conference.*

FELLOWSHIPS AND AWARDS

- **Knight Fellow (2020 – 2025):** Transdisciplinary research fellowship (project yielded two papers: *Scientific Reports* and one under review at *Social Media + Society).*
- **Best Paper Award (2020):** SBP-BRiMS Conference, *Lying about lying on social media on social media.*
- **"Fan Favorite" Award (2016):** MODSIM World conference competition; runner-up for the judge's award (https://faster-voting.wm.edu/).
- **3rd place, WINFORMS Student Excellence Award (2016):** original research in Operations Research.
- **Luther T. Connor Prize (2014):** Mathematics department award, determined by faculty.
- **1st place, Undergraduate Research Competition (2013):** International Symposium on Biomathematics and Ecology Education and Research conference (presentation and manuscript).

RESEARCH EXPERIENCE

Carnegie Mellon University – Research Assistant   *2019 – 2025*
- Designed and fielded surveys on social media user behavior and perceptions of misinformation countermeasures
- Co-developed Project OMEN, a training game for government analysts to improve misinformation detection and countering abilities
- Created and tested a media literacy intervention, evaluated effectiveness via a controlled user study
- Conducted a bibliometric analysis of 400+ misinformation intervention papers
- Quantified gendered dynamics and hate speech toward U.S. presidential candidates in 2020
- Produced 7+ peer-reviewed publications, multiple conference presentations

The College of William and Mary – Research Assistant   *2012 –2014*
- Modeled zooplankton-phytoplankton dynamics in the Chesapeake Bay
- Presented research at multiple mathematics conferences
- Resulted in an Honors thesis in Mathematics

TEACHING EXPERIENCE

Carnegie Mellon University – Teaching Assistant   *2019 – 2025*
- *Dynamic Network Analysis* (graduate level) – Led recitation sessions for 1 semester.
- *CASOS Summer Institute* – Delivered modules (2020-2024) on hashtag community analysis, the OMEN exercise, one- and two-mode metrics and folding, and network comparison/prediction.
- *OMEN Exercise* (2024) – Led training sessions on misinformation detection and countering.

The College of William & Mary – Teaching Assistant / Grader   *2013 – 2016*
- TA for *Calculus II* (4 semesters) and *Introduction to Mathematical Biology* – led labs and office hours
- Grader for multiple advanced mathematics courses, including *ODEs* and *Mathematical Statistics.*

PROFESSIONAL EXPERIENCE

MITRE – Data Scientist   *2018 – 2020*
- Built spectrum consumption models and conducted analysis in Java.
- Co-developed a system dynamics model forecasting UAV adoption rates in the U.S.
- Supported Army manpower modeling efforts via linear regression models and economic analyses.

Genworth – IT Analyst / Modeling Analyst   *2016 – 2018*
- Maintained and developed actuarial models in MATLAB, SAS, and R
- Implemented long-term care projection simulations in MATLAB

ACADEMIC AND COMMUNITY SERVICE

- **Peer Reviewer** – *New Media & Society, Social Media + Society, Behavioral Sciences of Terrorism and Political Aggression,* SBP-BRiMS, and IDeaS Conference
- **Mentor (2024)**
  - Managed three high school interns in a directed reading program
  - Trained interns to categorize misinformation intervention types
- **CMU Graduate Student Association (GSA) Representative (2023 – 2025)**
  - Planned and budgeted for social events for students in the Societal Computing Ph.D. program
  - Liaised with department leadership and advocated for student issues
- **CMU GSA, External Affairs Committee Member (2020 – 2025)**
  - Recruited >20 CMU students to be poll workers during the 2020 poll worker shortage
  - Met with congressional staff on graduate student issues (e.g. "CHIPS and Science Act")
  - Registered students to vote in advance of the 2022 elections
- **Election Judge / Poll Worker, Pittsburgh Precinct 10-12 (2020 – present)**
  - Manage election day operations and supervise poll workers
  - Ensure ballot security and fairness, and certify the precinct's results

SKILLS

Technical: R, Python, ORA, MATLAB, LaTeX (proficient); Java, SQL, SAS (familiar)
Methods: Social network analysis, bibliometric analysis, survey analysis, regression modeling, simulation
Languages: English (native), Italian (heritage)