

# Maria E. Kamenetsky, Ph.D., M.S.

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[mariakamenetsky.com](https://github.com/mariakamenetsky)

**GitHub:** mkamenet3

## Research Interests

Spatial and spatio-temporal statistics, methods and applications

Environmental mixtures

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## Education

- 2016–2022 **Ph.D., Epidemiology**, *University of Wisconsin-Madison*  
Department of Population Health Sciences  
*Minor:* Computer Sciences  
*Dissertation:* Regularized and Multi-Model Methods for Detecting Spatial and Spatio-Temporal Clusters with Applications in Epidemiology  
*Advisors:* Ronald Gangnon, Ph.D. (Population Health Sciences; Biostatistics & Medical Informatics) & Jun Zhu, Ph.D. (Statistics)
- 2014–2016 **M.S., Statistics**, *University of Wisconsin-Madison*  
Department of Statistics
- 2007–2011 **B.A., Economics, Political Science, International Studies**  
Comprehensive Honors in Liberal Arts, *University of Wisconsin-Madison*.

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## Research Experience

- 2022–present **Postdoctoral Fellow**, *National Cancer Institute (NCI)*, National Institutes of Health (NIH)  
Division of Cancer Epidemiology & Genetics (DCEG),  
Occupational & Environmental Epidemiology Branch (OEEB)/Biostatistics Branch (BB) *Rockville, MD*  
Mentors: Alexander Keil, Ph.D. & Paul Albert, Ph.D
- 2022–2024 **Honorary Fellow**, *University of Wisconsin-Madison*  
Nelson Institute for Environmental Studies,  
Environmental Observation & Informatics Program *Madison, Wisconsin*
- 2016–2022 **Statistical Consultant**, *University of Wisconsin-Madison*  
College of Agricultural and Life Sciences (CALS) Statistical Consulting Group,  
Department of Computing & Biometry *Madison, Wisconsin*
- 2021 **Biostatistics Consultant**, *University of Wisconsin-Madison*  
School of Medicine and Public Health,  
Path of Distinction in Public Health Program *Madison, Wisconsin*
- 2020–2021 **Statistical Consultant**  
Wisconsin Department of Health Services *Madison, Wisconsin*
- 2017–2018 **Statistical Consultant**  
Madison Water Utility *Madison, Wisconsin*

- 2016 **Data Science Fellow**, *University of Chicago*, Center for Data Science & Public Policy  
Eric & Wendy Schmidt Data Science for Social Good Fellowship *Chicago, Illinois*
- 2015 **Graduate Research Assistant**, *University of Wisconsin-Madison*  
Center for Demography & Ecology *Madison, Wisconsin*
- 2011-2014 **Research Professional**, *University of Chicago*, Accounting Research Center  
University of Chicago Booth School of Business *Chicago, Illinois*

## Research Publications

### *Peer-Reviewed*

- 12 **Kamenetsky, M.**, Keil, A.P. (2025)“(Re-)Match: Adjusting for Matching Factors in Case-Control Studies Can Be Unnecessary or Insufficient”, *American Journal of Epidemiology*, Forthcoming.
- 11 **Kamenetsky, M.**, Welch, B., Bommarito, P., Buckley, J., O'Brien, K., White, A., McElrath, T., Cantonwine, D., Ferguson, K., Keil, A. (2025) “Partial Effects in Environmental Mixtures - Evidence and Guidance on Methods and Implications”, *Environmental Health Perspectives* 133(5), <https://doi.org/10.1289/EHP14942>.
- 10 Remigio, R.V., Buller, I.D., Bogel, M.S., **Kamenetsky, M.E.**, Ammons, S., Bell, J.E., Fisher, J.A., Freedman, N.D., Jones, R.R. (2025) “Geographic patterns in wildland fire exposures and county-level lung cancer mortality in the United States”, *International Journal of Health Geographics*, 24(8), <https://doi.org/10.1186/s12942-025-00394-x>.
- 9 **Kamenetsky, M.**, Bailey, E., Lowry, A., Gangnon, R., Staifel, B., Hoppe, K. (2024) “The Role of Neighborhood in Individual and Disparity-Level Factors and Birth Weight in Dane County, Wisconsin” *Wisconsin Medical Journal* 123(6): 422-426.
- 8 He, X., Tomasallo, C., Li, Z., Schultz, A., **Kamenetsky, M.**, Sjodin, A., Botelho, J., Jarrett, J., Meiman, J. (2022) “Fish consumption, awareness of fish advisories, and body burden of contaminants among the Milwaukee urban anglers: A biomonitoring study.” *Journal of Toxicology and Environmental Health Sciences* 14(2): 20-35.
- 7 **Kamenetsky, M.**, Trentham-Dietz, A., Newcomb, P., Zhu, J., Gangnon, R.E.(2022) “A Flexible Method for Identifying Spatial Clusters of Breast Cancer Using Individual-Level Data.” *Annals of Epidemiology* 73: 9-16.
- 6 Gatti, R.C., Reich, P.B., Gamarra, J.G.P. [and 145 others, including **Kamenetsky, M.**] (2022) “The Number of Tree Species on Earth.” *Proceedings of the National Academy of Sciences* 119(6):e2115329119.
- 5 **Kamenetsky, M.**, Lee, J., Zhu, J., Gangnon, R. (2022) “Regularized Spatial and Spatio-Temporal Cluster Detection.” *Spatial and Spatio-Temporal Epidemiology* 41(1877-5845): 100462.
- 4 Lee, J., **Kamenetsky, M.**, Zhu, J., Gangnon, R. (2021). “Clustered spatio-temporal varying coefficient regression model.” *Statistics in Medicine*. 40(2): 465-480.

- 3 **Kamenetsky, M.**, Chi, G., Wang, D., Zhu, J. (2019). "Spatial Regression Analysis of Poverty in R." *Spatial Demography* 7(2-3): 1-35.
- 2 Mallinson, D., **Kamenetsky, M.**, Hagen, E., Peppard, P. (2019). "Subjective sleep measurement: comparing sleep diary to questionnaire." *Nature and Science of Sleep* 11: 197-206.
- 1 Skarlupka, J., **Kamenetsky, M.**, Jewell, K., Suen, G. (2019). "The ruminal bacterial community in lactating dairy cows has limited variation on a day-to-day basis." *Journal of Animal Science and Biotechnology* 10: 66.

### ***Under Revision***

- 1 **Kamenetsky, M.**, Zhu, J., Gangnon, R.E. "Spatial and Spatio-Temporal Cluster Detection Using Stacking."

### **Invited Talks**

\* indicates presenter.

- Aug. 2025 **Kamenetsky, M.\*** "A Flexible Bayesian Quantile G-Computation Approach for Modeling Environmental Mixtures Over Space", Joint Statistical Meetings (JSM), *Nashville, TN*
- Dec. 2023 **Kamenetsky, M.\*** "Spatial Methods in Cluster Detection and Environmental Mixtures", Office of Biostatistics Research (OBR), National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH), *Rockville, MD*
- Oct. 2023 **Kamenetsky, M.\*** "Spatial Methods in Cluster Detection and Environmental Mixtures", SLAM (Survival, Longitudinal, and Multivariate Data) Working Group, Biostatistics Department, Johns Hopkins University, *Baltimore, MD*
- Aug. 2023 **Kamenetsky, M.\*** "Regularized and Multi-Model Methods for Spatial and Spatio-Temporal Cluster Detection", Joint Statistical Meetings (JSM), *Toronto, Canada*
- Aug. 2023 **Kamenetsky, M.\***, Lee, J., Zhu, J., Gangnon, R. "Regularized Spatial and Spatio-Temporal Cluster Detection: Applications to Breast Cancer" (accepted), 6th International Conference on Econometrics and Statistics (EcoSta), *Tokyo, Japan (Hybrid)*
- Jun. 2023 **Kamenetsky, M.\***, Keil, A. "Partial Effects in Environmental Mixtures: Guidance on Methods, Assumptions, and Implications", NIEHS Environmental Mixtures Working Group, *Virtual*
- Jan. 2023 **Kamenetsky, M.\*** "Novel Spatial Methods in Cancer Surveillance and Environmental Mixtures", University of Wisconsin-Madison, Department of Population Health Sciences, *Madison, WI*
- Jun. 2022 **Kamenetsky, M.\***, Velasquez, E., Kiang, M. "Quantifying wildfire smoke exposure in California school children", Society for Epidemiologic Research (SER) Annual Meeting, *Chicago, IL*
- Mar. 2022 **Kamenetsky, M.\*** "Spatial and Spatio-Temporal Clustering", University of Toronto, Toronto Data Workshop, *Virtual*
- Dec. 2021 **Kamenetsky, M.\*** "Spatial and Spatio-Temporal Cluster Detection: Methods and Applications", University of Southern California, Keck School of Medicine - Environmental Health Division, *Virtual*

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## Contributed Oral Presentations

- Jun. 2025 **Kamenetsky, M.\*** "The Association Between Metal and Metalloids and Bladder Cancer Risk in the New England Bladder Cancer Study", Society for Epidemiologic Research (SER) Annual meeting, *Boston, MA*
- Aug. 2024 A Latent Spatial Model for Predicting a (Semi-)Metals Mixture in Private Wells  
**Kamenetsky, M.\***, Kim, S.D., Albert, P., Keil, A.P.  
International Society for Environmental Epidemiology (ISEE) *Santiago, Chile (Hybrid)*
- Aug. 2022 Cell-Wise Uncertainty Quantification of Spatial Clusters  
**Kamenetsky, M.\***, Zhu, J., Gangnon, R.  
American Statistical Association (ASA) Joint Statistical Meeting (JSM) *Washington, DC*
- Jun. 2022 Detecting Spatial and Spatio-Temporal Clusters of Disease Using Stacking  
**Kamenetsky, M.\***, Zhu, J., Gangnon, R.  
Society for Epidemiologic Research (SER) Annual Meeting *Chicago, IL*
- Mar. 2021 Identifying Spatial Clusters of Breast Cancer Risk: A Lasso Approach to the Wisconsin Women's Health Study  
**Kamenetsky, M.\***, Trentham-Dietz, A., Newcomb, P., Zhu, J., Gangnon, R.  
ENAR Spring Meeting *Virtual*
- Dec. 2020 Identification of Breast Cancer Spatial Structures Based on the Wisconsin Women's Health Study  
**Kamenetsky, M.\***, Trentham-Dietz, A., Newcomb, P., Gangnon, R.  
Society for Epidemiologic Research (SER) Annual Meeting *Virtual*
- Aug. 2020 Detecting Disease Clusters Across Space and Time Using Model Averaging  
**Kamenetsky, M.\***, Gangnon, R.  
American Statistical Association (ASA) Joint Statistical Meetings (JSM) *Virtual*
- Sep. 2019 Statistical Analysis of Madison Water Utility Main Breaks  
**Kamenetsky, M.\***, McClure, S.\*  
Wisconsin Section of the American Water Works Association *Madison, WI*
- Aug. 2016 Predicting Enforcement of Pollution and Hazardous Waste Violations in New York State  
Potash, E., Jin, J., **Kamenetsky, M.\***, Magee, D., Van der Boor, P., Ghani, R.  
Data Science for Social Good Conference *Chicago, IL*

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## Poster Presentations

- Jun. 2025 Old Tools to Address Persistent Problems: Assessing Health Disparities and Differences with Attributable Fractions  
Keil, A.\*, **Kamenetsky, M.**, Spaur, M., Madrigal, J.M., Robinson, W.R.  
Society for Epidemiologic Research *Boston, MA*

- Jun. 2024 Partial Effects in Environmental Mixtures - Guidance on Methods, Assumptions, and Implications  
**Kamenetsky, M.**, Welch, B., Bommarito, P., Buckley, J., O'Brien, K., White, A., McElrath, T., Cantonwine, D., Ferguson, K., Keil, A.\*  
 Society for Epidemiologic Research *Portland, OR*
- Jun. 2024 The Power of Mixtures  
 Keil, A.\*, **Kamenetsky, M.**, Choi, G., Jones, R.R., Buckley, J.P.  
 Society for Epidemiologic Research *Portland, OR*
- Mar. 2024 Urinary and Fecal Metal Concentrations Affect Adult Human Gut Microbiome Composition in a Sample of the Wisconsin Population  
 Teffera, M.Y.\*, **Kamenetsky, M.**, Berres, M., Bradfield, C., Malecki, K., Ronnekleiv-Kelly, S.  
 Society of Toxicology Meeting *Salt Lake City, UT*
- Feb. 2022 A Spatial Approach to Examining Individual and Disparity-Level Factors and Hypertensive Disorders of Pregnancy  
 Bailey, E.\*, **Kamenetsky, M.**, Lowry, A., Gangnon, R., Hoppe, K.  
 Society of Maternal-Fetal Medicine Annual Pregnancy Meeting *Kissimmee, FL*
- Feb. 2022 A Spatial Approach to Examining Individual and Disparity-Level Factors and Birth Outcomes  
 Lowry, A.\*, **Kamenetsky, M.**, Bailey, E., Gangnon, R., Hoppe, K.  
 Society of Maternal-Fetal Medicine Annual Pregnancy Meeting *Kissimmee, FL*
- Oct. 2021 A Spatial Approach to Examining Individual and Disparity-Level Factors and Hypertensive Disorders of Pregnancy  
 Bailey, E.\*, **Kamenetsky, M.**, Lowry, A., Gangnon, R., Hoppe, K.  
 UW Women's Health And Health Equity Research Lecture & Symposium *Madison, WI*
- Mar. 2020 Space and Space-Time Cluster Detection Using the LASSO  
**Kamenetsky, M.\***, Lee, J., Zhu, J., Gangnon, R.  
 UW-Madison Department of Population Health Sciences Annual Poster Session *Madison, WI*
- Jan. 2020 Space and Space-Time Cluster Detection Using the LASSO  
**Kamenetsky, M.\***, Lee, J., Zhu, J., Gangnon, R.  
 UW-Madison Data Science Hub: Data Science Research Bazaar *Madison, WI*
- Jun. 2019 Space and Space-Time Cluster Detection Using the LASSO  
**Kamenetsky, M.\***, Lee, J., Zhu, J., Gangnon, R.  
 Society for Epidemiologic Research (SER) Annual Meeting *Minneapolis, MN*

\* indicates presenter.

## --- Honors & Awards

- 2025 Navigating Next Steps (NNS) Leadership and Career Program,  
 National Cancer Institute

- 2023 StatsForward Leadership Fellowship,  
American Statistical Association
- 2021 Poster Winner: UW Women's Health And Health Equity Research Lecture & Symposium,  
Department of Obstetrics and Gynecology, University of Wisconsin-Madison
- 2021 RStudio::Global(2021) Diversity Scholar
- 2020 Robert F. and Jean E. Holtz Center for Science and Technology Studies Conference Grant,  
University of Wisconsin-Madison
- 2020 American Statistical Association (ASA) Wisconsin Chapter Student Virtual Travel Award
- 2020 Catherine Allen Outstanding Student Poster Award,  
Department of Population Health Sciences, University of Wisconsin-Madison
- 2019 Student Research Travel Grant,  
University of Wisconsin-Madison
- 2016 Outstanding New Student Scholarship,  
Department of Population Health Sciences, University of Wisconsin-Madison
- 2016 The Eric & Wendy Schmidt Data Science for Social Good Summer Fellowship

## Research Support

### Active Support

5/2024-present **National Cancer Institute, Division of Cancer Epidemiology & Genetics** (Intramural Research Award)

*Title:* "The Role of Mixtures on Bladder Cancer Risk Across Space: An Examination Using Flexible Bayesian Quantile G-Computation"

*Role:* Principal Investigator

## Software Development

- 2022 clustack, an R package for detecting and mapping spatial and spatio-temporal clusters using stacking (maintainer & developer: M. Kamenetsky)
- 2021 clusso, an R package for detecting and mapping spatial and spatio-temporal clusters using the LASSO (maintainer & developer: M. Kamenetsky)
- 2020 strm, an R package that fits a spatio-temporal regression model based on Chi & Zhu Spatial Regression Models for the Social Sciences (2020) (maintainer & developer: M. Kamenetsky). Available on CRAN.
- 2020 coefclust, an R package for detecting spatial clusters in regression coefficients (developer: J. Lee; maintainer: M. Kamenetsky)

## Teaching

### Co-Instructor

Feb 2025 "Causal Inference Workshop" *Division of Cancer Epidemiology & Genetics, National Cancer Institute*

### Guest Lecturer

Spring 2023 "Introduction to Spatial Analysis for Public Health" *George Mason University*

### Instructor

Spring 2022, Spatial Statistics for Lattice Data (STAT 679-III)  
2021, 2020,  
2019

*University of Wisconsin-Madison*

### **Teaching Assistant**

Fall 2014 Introductory Statistics (STAT 301)

*University of Wisconsin-Madison*

### **Workshops**

- 2021 R/Medicine 2021
  - *Teaching Assistant:* Mapping Spatial Health Data (Instructor: Marynia Kolak) (Aug. 2021)
- 2021 A Crash Course on Git & GitHub
  - *Instructor* (Apr. 2021)
- 2021 Introduction to Git
  - *Helper* (Mar. 2021)
- 2021 RStudio::Global(2021) Conference Workshop:
  - *Teaching Assistant:* Introduce Yourself Online (Instructor: Alison Hill) (Jan. 2021)
- 2019-21 Geospatial Carpentry
  - *Instructor:* Raster Data (Jul. 2019, Jul. 2020, Jul. 2021)
- 2020 Reproducible Research: Practical Tools & Applications Workshop
  - *Instructor:* Reproducible Visualization
- 2019 R for Researchers Workshop Series
  - *Instructor:* Introduction to the Unix Shell (Nov. 2019)
  - *Helper:* Visualization with ggplot2, Data Wrangling with dplyr (Mar. 2019)
- 2019 Data Carpentry: Health Sciences Workshop
  - *Instructor:* Introduction to ggplot2 (Jun. 2019)
  - *Instructor:* Introduction to RMarkdown (Jun. 2019)
- 2018-2019 Data Carpentry: Ecology Workshop
  - *Instructor:* Introduction to R (Jun. 2018, Aug. 2018)
  - *Instructor:* Introduction to ggplot2 (Jan. 2019)
  - *Instructor:* Introduction to RMarkdown (Jan. 2019)
- 2017-2020 Software Carpentry: Unix Shell, Python, & Git
  - *Helper:* (Aug. 2017, Jan. 2018, Apr. 2020)

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## **Service**

### **Institutional**

- 2024 DCEG Grants and Grantsmanship: Tips on Applying for Grant Funding
  - Panelist
- 2023 OEEB Branch Concept Study Review, *National Cancer Institute*
  - Reviewer
- 2022-2023 DCEG Fellows' Committee, *National Cancer Institute*
  - Biostatistics Branch Representative
- 2022-2024 DCEG Fellows Writing & Accountability Group, *National Cancer Institute*
  - Founder, Facilitator

- 2020-2022 Population Health Sciences Writing Group, *University of Wisconsin-Madison*  
 - Organizer
- 2017-2022 Population Health Sciences Student Organization, *University of Wisconsin-Madison*  
 - Social Media Chair (2020-21)  
 - Curriculum Committee Representative (Epidemiology) (2020-21; 2018-19)  
 - Admissions Committee Representative (2019-20)  
 - Social Chair (2017-18)

#### **Reviewer**

*International Journal of Health Geographics*

*Statistics in Medicine*

*American Journal of Epidemiology*

*The R Journal*

*Computational Statistics and Data Analysis*

*Environmental Health Perspectives*

*Annals of Epidemiology*

*BMC Public Health*

*Computational Statistics*

*Cancers*

*Journal of Computational and Graphical Statistics*

#### **Professional**

- 2025 Session Chair, Joint Statistical Meetings (JSM) - Nashville
- 2023 Session Chair, Joint Statistical Meetings (JSM) - Toronto
- 2021-2024 Communications Committee, *Society for Epidemiologic Research (SER)*
- 2021, 2022 Abstract Reviewer, *Society for Epidemiologic Research (SER)*
- 2021 Awards Committee, *American Statistical Association (ASA)*, *Statistics in Epidemiology Section*
- 2021 Session Chair, ENAR Spring Meeting

#### **Mentoring**

- 2023 Angie Chen, Summer Volunteer, *Biostatistics Branch, National Cancer Institute*
- 2020 Mengze Cai, MS Student, Environmental Observation & Informatics, *University of Wisconsin-Madison*
- 2020 Women in Scientific Education and Research, *University of Wisconsin-Madison*
- 2019, 2020 Molly Burdine, Population Health Sciences Peer Connections, *University of Wisconsin-Madison*

#### **Volunteering & Outreach**

- 2021 UW-Madison Carpentries Instructor Development Meeting: "Teaching Debugging to Learners", *University of Wisconsin-Madison*
- 2021 Pathogen Dynamics Lab: "A Crash Course on Git & GitHub", *University of Cambridge*
- 2021 useR Boston Meetup: "Self-Assessment with `learnR`"
- 2019 Biostatistics Tutor, *University of Wisconsin-Madison*
- 2014 Statistics Tutorial Lab, *University of Wisconsin-Madison*

## **Certification**



2018 Certified Instructor - Data, Software, and Library Carpentry (The Carpentries)

## Professional Society Membership

International Biometric Society (East North American Region)  
Society for Epidemiologic Research  
American Statistical Association

## Additional Training

2023 Speaking with the Media  
National Cancer Institute  
2023 Ethics in Research  
National Institutes of Health  
2023 Mental Health First Aid Kit  
National Institutes of Health  
2022 Grant-Writing Workshop  
National Institute on Aging, NIH  
2022 Grants and Grantsmanship Workshop Series  
National Cancer Institute, NIH  
2022 Scientists Teaching Science Workshop  
National Institutes of Health

## Technical Skills

Statistical R (advanced), SAS (advanced), STATA (intermediate)  
Scripting Python (intermediate), Unix Shell (intermediate), C++ (beginner)  
Databases PostgreSQL (beginner), MySQL (beginner)  
Markup Markdown (advanced), L<sup>A</sup>T<sub>E</sub>X (intermediate)  
VersionControl Git (intermediate)  
OS Unix/Linux (Ubuntu, RedHat), MacOS, MS Windows  
Other SaTScan (advanced), QGIS (beginner), Inkscape (intermediate), GIMP (beginner)

## Additional Education

2012-14 *University of Chicago*  
- *Graduate Student At-Large*: Completed coursework in multivariate calculus, linear algebra, statistical theory and methodology I & II.

## Languages

Russian Fluent  
Spanish Intermediate  
English Native language