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

Research Interests

Spatial and spatio-temporal statistics, methods and applications

Environmental mixtures

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*.

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–present **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

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 Review

1 **Kamenetsky, M.**, Bailey, E., Lowry, A., Gangnon, R., Stafeil, B., Hoppe, K. "A Spatial Approach to Examining Individual and Disparity-Level Factors and Birth Weight in Dane County, Wisconsin"

In Preparation

4 **Kamenetsky, M.**, Kim, S.D., A., Keil, Albert, P. "A Latent Spatial Modeling Approach to Environmental Mixtures."

3 **Kamenetsky, M.**, Buckley, J., Bommarito, P., Welch, B., O'Brien, K., Ferguson, K., White, A., Keil, A. "Partial Effects in Environmental Mixtures - Guidance on Methods, Assumptions, and Implications."

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

1 **Kamenetsky, M.**, Zhu, J., Gangnon, R.E. "Cell-Specific Confidence Bounds for Spatial and Spatio-Temporal Clusters Based on Stacking."

Invited Talks

* indicates presenter.

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*

Contributed Oral Presentations

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*

Poster Presentations

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

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

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

Guest Lecturer

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

Instructor

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

Service

Institutional

2022-2023 DCEG Fellows' Committee, *National Cancer Institute*

- Biostatistics Branch Representative

2022-present 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

Professional

2023 Session Chair, Joint Statistical Meetings (JSM) - Toronto
2023-present Diversity & Inclusion Committee Liaison, *Society for Epidemiologic Research (SER)*
2021-present 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 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), LaTeX (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