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

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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

9 **Kamenetsky, M.**, Bailey, E., Lowry, A., Gangnon, R., Stafeil, 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 Review

3 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. "Geographic patterns in wildland fire exposures and county-level lung cancer mortality in the United States."

2   **Kamenetsky, M.**, , Welch, B., Bommarito, P., Buckley, J., O'Brien, K., White, A., McElrath, T., Cantonwine, D., Ferguson, K., Keil, A. "Partial Effects in Environmental Mixtures - Guidance on Methods, Assumptions, and Implications."

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

Invited Talks

* indicates presenter.

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*

Contributed Oral Presentations

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*

Poster Presentations

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

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 <u>Spatial Regression Models for the Social Sciences</u> (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, 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

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-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
Journal of Computational and Graphical Statistics

Professional

2023	Session Chair, Joint Statistical Meetings (JSM) - Toronto
2023-2024	Diversity & Inclusion Committee Liaison, *Society for Epidemiologic Research (SER)*
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), 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