# Kenneth J. Nieser

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Website: knieser.github.io

**Research interests**
social epidemiology, mental health, epidemiological methods, algorithmic bias

**Education**

| | |
|---|---|
| 2018-2023 (expected) | Ph.D. Epidemiology, Minor in Statistics<br>University of Wisconsin-Madison, School of Medicine and Public Health |
| 2009-2013 | B.A. Physics and Mathematics, High Honors<br>Swarthmore College |

**Awards and fellowships**

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|---|---|
| 2020 | Rankin/Skatrud Travel Award |
| 2019 | Biology and Medicine through Mathematics (BAMM!) Travel Award |
| 2019 | Student Research Grants Competition – Conference Presentation Funds |
| 2018-2019 | New Graduate Student Fellowship |

**Research positions**

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|---|---|
| 2020-present | Research Assistant, *University of Wisconsin-Madison*<br>(PI: Amy Cochran). |
| 2019-2020 | Project Assistant, *University of Wisconsin-Madison*<br>UW Madison Center for Human Genomics and Precision Medicine Seed Grant<br>(PI: Amy Cochran). Gene-set enrichment with mathematical biology. |

**Peer-reviewed publications**

1. Nieser, K. J., Cochran, A. L. (in press). Addressing Heterogeneous Populations in Latent Variable Settings through Robust Estimation. *Psychological Methods*.

2. Cochran, A. L., Nieser, K. J., Forger, D. B., Zöllner, S., & McInnis, M. G. (2020). Gene-set Enrichment with Mathematical Biology (GEMB). *GigaScience, 9*(10), giaa091. https://doi.org/10.1093/gigascience/giaa091

*Liquid Crystals (research done as an undergraduate)*

1. Collings, P. J., Goldstein, J. N., Hamilton, E. J., Mercado, B. R., Nieser, K. J., & Regan, M. H. (2015). The nature of the assembly process in chromonic liquid crystals. *Liquid Crystals Reviews, 3*(1), 1-27. https://doi.org/10.1080/21680396.2015.1025305

2. Mercado, B. R., Nieser, K. J., & Collings, P. J. (2014). Cooperativity of the assembly process in a low concentration chromonic liquid crystal. *The Journal of Physical Chemistry. B, 118*(46), 13312–13320. https://doi.org/10.1021/jp510025j

## Conference presentations and posters

1. Optimizing for whom? The role of robustness in equitable algorithms. 2021 Machine Learning Day, Arizona State University (virtual talk).

2. Detecting Inequity in the Analysis of Mental Health. 2021 Data Science Research Bazaar: *Data Science for the Social Good*, University of Wisconsin-Madison (virtual lightning talk).

3. Bias Analysis of Depression Rate Comparisons between Racial/Ethnic Groups. Society for Epidemiologic Research Annual Meeting 2020 (virtual poster).

4. Addressing Heterogeneity in Mental Illnesses through Robust Estimation. Population Health Sciences Annual Poster Session 2020, University of Wisconsin-Madison (poster).

5. Robust estimation for factor loadings with application to postpartum depression. Biology and Medicine through Mathematics (BAMM!) 2019, Virginia Commonwealth University (poster).

6. Kinetics of Assembly and Dis-assembly of Structures Forming a Chromonic Liquid Crystal at Low Concentrations. American Physical Society March Meeting 2013, Baltimore, MD (talk).

## Teaching

Teaching Associate, *Swarthmore College*

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|---|---|
| Spring 2013 | General Physics II |
| Spring 2012 | General Physics II with Biomedical Applications |
| Fall 2011 | General Physics I |
| Fall 2011-12 | Spacetime, Quanta & Cosmology |

Tutor, *Swarthmore College*
Spring 2013 General Physics II
Spring 2012 General Physics II with Biomedical Applications
Fall 2011-12 General Physics I

**Employment**

2017-2018 Senior Analyst, *Healthgrades*
*Madison, WI*
Supported internal teams as a subject-matter expert on data analysis and campaign research; assisted in training of new analysts.

2015-2017 Market Analyst, *Healthgrades*
*Madison, WI*
Analyzed electronic medical record data and third-party demographic data to inform marketing strategy and planning for hospital clients.

2014-2015 Healthcare Data Analyst, *HP Enterprise Services*
*Madison, WI*
Analyzed Wisconsin Medicaid claims data and managed care enrollment data; compiled reports for clients in Wisconsin Department of Health Services.

2013-2014 Technical Services Analyst, *Epic*
*Verona, WI*
Supported multiple hospital organizations in optimizing and troubleshooting Epic software.