

# TIMOTHY J. PRESTBY

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## EDUCATION

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### The Pennsylvania State University

Anticipated Spring 2025

Doctor of Philosophy, Geography

Dissertation: "Understanding Trust in Thematic Maps"

Advisor: Dr. Anthony C. Robinson

### The Pennsylvania State University

2022

Master of Science, Geography

Thesis: "The Design of COVID-19 Story Maps in Data Journalism"

Advisor: Dr. Anthony C. Robinson

### The University of Wisconsin–Madison

Bachelor of Science, Honors Cartography and GIS | Graduated with Distinction

2020

Certificate in Environmental Studies

Thesis: "Understanding Neighborhood Isolation"

Advisors: Dr. Song Gao & Dr. Robert E. Roth

## RESEARCH APPOINTMENTS

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### NSF Graduate Research Fellow

2022 – Present

Department of Geography, Penn State

Advisor: Dr. Anthony C. Robinson, Professor of Geography

### Graduate Research Assistant

2020 – 2022

Department of Geography, Penn State

"Beescape Nexgen" (USDA)

PI: Dr. Christina Grozinger, Professor of Entomology

### Undergraduate Research Assistant

2019 – 2020

University of Wisconsin Cartography Lab, UW-Madison

"Elements of Interactive Cartography" (NSF)

PI: Dr. Robert E. Roth, Professor of Geography

### Undergraduate Research Assistant

2018 – 2020

Geospatial Data Science Lab, UW-Madison

Advisor: Dr. Song Gao, Associate Professor of Geography

## PUBLICATIONS

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### Refereed Journal Articles

**Prestby, T.J.**, (In review). Uncertainty Representation and Cultural Color Congruence in Visualization Design: Impacts on Trusting and Reading Thematic Maps. For submission to *IEEE Transactions on Computer Graphics and Visualization*.

Case, N., **Prestby, T.J.**, Gartner, G. (In review). "Does this map do what I want?": Elements of trust in maps. *Cartographic Perspectives*.

**Prestby, T.J.** (In review). Situating Trust in Cartography: Conceptions of Trust and Trustworthiness in Maps. *Cartographic Perspectives*.

**Prestby, T.J.** (2024). Measuring Trust in Maps: development and evaluation of the MAPTRUST scale. *International Journal of Geographic Information Science*.  
<https://doi.org/10.1080/13658816.2024.2370076>

**Prestby, T.J.** (2023). Trust in maps: what we know and need to know. *Cartography and Geographic Information Science*. <https://doi.org/10.1080/15230406.2023.2281306>

**Prestby, T.J.**, Robinson, A.C., McLaughlin, D., Dudas, P.M., & Grozinger, C.M. (2023). Characterizing user needs for Beescape: A spatial decision support tool focused on pollinator health. *Journal of Environmental Management*, 325, 116416.  
<https://doi.org/10.1016/j.jenvman.2022.116416>

Hart, D.A., **Prestby, T.**, & Roth, R.E. (2022). Design and Evaluation of Coastal Web Atlases: Best Practices and Future Opportunities for Map Representation, Interaction, and Usability. *Coastal Management*, 50(6), 514-548. <https://doi.org/10.1080/08920753.2022.2126271>

**Prestby, T.** (2022). Design Techniques for COVID-19 Story Maps: A Quantitative Content Analysis. *Cartography and Geographic Information Science*, 1-20.  
<https://doi.org/10.1080/15230406.2022.2102077>

Song, Z., Roth, R.E., Houtman, L., **Prestby, T.**, Iverson, A., & Gao, S. (2022). Visual Storytelling with Maps: An Empirical Study on Story Map Themes and Narrative Elements, Visual Storytelling Genres and Tropes, and Individual Audience Differences. *Cartographic Perspectives*, (100), 10-44. <https://doi.org/10.14714/CP100.1759>

Bley, K., Caldwell, K., Kelly, M., Loyd, J., Roth, R.E., Anderson, T.M., Bonds, A., Plevin, J., Madison, D., Sims, T., Spencer, C., Archuleta, C., Ellner, Z., McDowell, T., Nestel, C., Noterman, E., Smith, N., Velednitsky, S., Underwood, N., Darlington, R., Gao, Y., George, A., Miller, L.,

**Prestby, T.,** & Vongkusolkit, J. (2021). A Design Challenge for Transforming Justice. *GeoHumanities*. <https://doi.org/10.1080/2373566X.2021.1986100>

Robinson, A.C., Peeler, J., **Prestby, T.,** Goslee, S. C., Anton, K., & Grozinger, C. M. (2021). Beescape: Characterizing user needs for environmental decision support in beekeeping. *Ecological Informatics*. <https://doi.org/10.1016/j.ecoinf.2021.101366>

Li, B., Gao, S., Liang, Y., Kang, Y., **Prestby, T.,** Gao, Y., & Xiao, R. (2020). Estimation of regional economic development indicator from transportation network analytics. *Scientific reports*, 10(1), 1-15. <https://doi.org/10.1038/s41598-020-59505-2>

**Prestby, T.,** App, J., Kang, Y., & Gao, S. (2020). Understanding neighborhood isolation through spatial interaction network analysis using location big data. *Environment and Planning A: Economy and Space*, 52(6), 1027-1031. <https://doi.org/10.1177/0308518X19891911>

## Book Chapters

Roth, R.E., Sack, C.M., Baldrice-Franklin, G., Chen, Y., Donohue, R., Houtman, L., **Prestby, T.,** Tolochko, R., & Underwood, N. (2021) Web Mapping: A Workbook for Interactive Cartography and Visualization on the Open Web (Version 0.2). *University of Wisconsin Cartography Laboratory*. <http://doi.org/10.5281/zenodo.4685763>

Gao, S., Li, M., Rao, J., Mai, G., **Prestby, T.,** Marks, J., & Hu, Y. (2021). Automatic urban road network extraction from massive GPS trajectories of taxis. *Handbook of Big Geospatial Data*, 261. [https://doi.org/10.1007/978-3-030-55462-0\\_11](https://doi.org/10.1007/978-3-030-55462-0_11)

## Refereed Conference Abstracts

**Prestby, T.** (2023). In Maps We Trust. *Abstracts of the ICA*, 6, 206. <https://doi.org/10.5194/ica-abs-6-206-2023>

Robinson, A.C., **Prestby, T.J.,** McLaughlin, D., Houtman, L., Dudas, P., and Grozinger, C. (2023). Geovisualization for Pollinator Decision Support with Beescape NexGen. *Abstracts of the ICA*, 6, 212. <https://doi.org/10.5194/ica-abs-6-212-2023>

**Prestby, T.** (2022). Content Analysis of COVID-19 Cartographic Journalism. *Abstracts of the ICA*, 5, 65. <https://doi.org/10.5194/ica-abs-5-65-2022>

Robinson, A.C., **Prestby, T.J.,** McLaughlin, D., Dudas, P., & Grozinger, C. (2022). Evaluating User Needs for Geovisualization of Pollinator Health and Ecosystems. *Abstracts of the ICA*, 5, 157. <https://doi.org/10.5194/ica-abs-5-157-2022>

**Prestby, T.** (2021). Characterizing Storytelling in COVID-19 Cartographic Journalism. *Abstracts of the ICA*, 3, 245. <https://doi.org/10.5194/ica-abs-3-245-2021>

Roth, R.E., Sack, C.M., Baldrice-Franklin, G., Chen, Y., Donohue, R., Houtman, L., **Prestby, T.**, Tolochko, R., and Underwood, N. (2021). Introducing Web Mapping: A Workbook for Interactive Cartography and Visualization on the Open Web. *Abstracts of the ICA*, 3, 254. <https://doi.org/10.5194/ica-abs-3-254-2021>

## PRESENTATIONS

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### Invited Talks

**Prestby, T.J.** (2023). Trust in Maps: what we know and what we need to know. Invited lecture for the Department of Geography and Earth Sciences at UNC Charlotte. October 17.

### Conference Presentations

\*presenter on co-authored work

**Prestby, T.J.** (2024). Trust in Maps: Applying the MAPTRUST Scale to Study Cartographic Design. *Viral Movements Symposium*. State College, PA: May 15.

**Prestby, T.J.** (2024). Conceptualizing Trust in Cartography. *American Association of Geographers Annual Meeting*. Honolulu, HI: April 18.

**Prestby, T.J.** (2024). An Empirical Study on How Color Congruence and Uncertainty Affect Map Trust. *Penn State Geography Miller Masterclass*. State College, PA: March 14.

Birkenholtz, T., **Prestby, T.J.**, Houtman, L. (2024). Placing Wetlands in the Watershed: Situating Millbrook Marsh, Pennsylvania in the Chesapeake Bay Watershed. *Delaware Wetlands Conference*. Wilmington, DE: February 6.

**Prestby, T.J.** (2023). To Trust or Not to Trust Maps, That Is the Question. *North American Cartographic Information Society Annual Conference*. Pittsburgh, PA: October 12.

Robinson, A.C., **Prestby, T.J.**, McLaughlin, D., Houtman, L., Dudas, P., and Grozinger, C. (2023). Geovisualization for Pollinator Decision Support with Beescape NexGen. *International Cartography Conference*. Cape Town, South Africa: August 16.

**Prestby, T.J.** (2023). In Maps We Trust. *International Cartography Conference*. Cape Town, South Africa: August 15.

**Prestby, T.J.** (2023). The Intersection of AI, Trust, and Cartography. *Pre-conference Workshop on MapAI, International Cartography Conference*. Stellenbosch, South Africa: August 12.

- Song, Z., Roth, R.E., Houtman, L., **Prestby, T.J.**, Iverson, A., & Gao, S. (2022). Visual Storytelling with Maps: Update and Outlook from an Empirical Study. *AutoCarto*. Redlands, CA: November 3.
- Prestby, T.J.** (2022). Surveying the Design of Story Maps in Digital Journalism. *North American Cartographic Information Society Annual Conference*. Minneapolis, MN: October 20.
- Prestby, T.J.** (2022). Design Techniques for COVID-19 Story Maps: A Quantitative Content Analysis. *EuroCarto*. Vienna, Austria: September 21.
- Robinson, A.C., **Prestby, T.J.**, McLaughlin, D., Dudas, P., & Grozinger, C. (2022). Evaluating User Needs for Geovisualization of Pollinator Health and Ecosystems. *EuroCarto*. Vienna, Austria: September 21.
- Prestby, T.J.** (2021). Characterizing Storytelling in COVID-19 Cartographic Journalism. *International Cartography Conference*. Florence, Italy: December 16.
- Prestby, T.J.** (2021). Mapping Multiscale Pollinator Big Data. *Center for Pollinator Research Symposium*. State College, PA: November 16.
- Roth, R.E., Sack, C.M., Baldrice-Franklin, G., Chen, Y., Donohue, R., Houtman, L., **Prestby, T.J.**, Tolochko, R., & Underwood, N. (2021). Introducing "Web Mapping: A Workbook for Interactive Cartography and Visualization on the Open Web". *North American Cartographic Information Society Annual Conference*. Oklahoma City, OK: October 14.
- Hart, D.A., **Prestby, T.J.**, & Roth, R.E. (2021). Design and Evaluation of Coastal Web Atlases: Best Practices and Future Opportunities for Map Representation, Interaction, and Usability. *CoastGIS*. Virtual: September 16.
- Hart, D.A., **Prestby, T.J.**, & Roth, R.E. (2021). Enhancing the Wisconsin Coastal Atlas as a Resource to Support Adaptive Coastal Management. *International Coastal Atlas Network Steering Meeting*. Virtual: September 27.
- Hart, D.A., **Prestby, T.J.\***, & Roth, R.E. (2020). Designing Coastal Web Atlases: Best Practices and Future Directions. *Social Coast Forum*. Charleston, SC: February 6.
- Prestby, T.J.**, App, J., Kang, Y., & Gao, S. (2020). Visualizing Neighborhood Isolation by Spatial Interaction Network Analysis. *American Association of Geographers Annual Meeting*. Denver, CO: Canceled.
- Prestby, T.J.**, Gao, S., Liang, Y., Kang, Y., & Li, B. (2019). Linking Traffic Volume to Economic Development Index Using Big Data and Gravity Models. *American Association of Geographers Annual Meeting*. Washington, DC: April 4.

## Panels

**Prestby, T.** (2023). "Advancing GIS Careers" *GISalon Webinar*, GISphere.

## FELLOWSHIPS, GRANTS, AND AWARDS

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### Fellowships

Graduate Research Fellowship. *NSF*. 2022 – Present

Hilldale Undergraduate Research Fellowship. *UW–Madison*. 2019 – 2020

### Grants

Graduate Enrichment Research Grant. *Department of Geography, Penn State*. 2023

Student Travel Grant. *North American Cartographic Information Society (NACIS)*. 2023

Student Travel Grant. *NACIS*. 2022

Student Travel Grant. *NACIS*. 2021

Graduate Research Enrichment Grant. *Department of Geography, Penn State*. 2021

Student Travel Grant. *NACIS*. 2020

Bromley Research Travel Grant. *L & S Honors Program, UW–Madison*. 2019

Student Travel Grant. *NACIS*. 2019

### Cartography Awards

David Woodward Award for Best Digital Map, Honorable Mention. 2021  
*Cartography and Geographic Information Society (CaGIS)*.

Arthur Robinson Award for Best Print Map, Honorable Mention. *CaGIS*. 2021

Barbara Bartz Petchenik Cartographic Excellence Award. 2019  
*Department of Geography, UW–Madison*.

Keynote's Choice Award. *Wisconsin Land Information Association (WLIA)*. 2019

Thematic Map Award, First Place. *WLIA*. 2019

## Awards

Young Scientist Award. <i>International Cartographic Association (ICA)</i> .	2023
Early Career Scholar Award. <i>U.S. National Committee to the ICA</i> .	2023
Young Scientist Award. <i>ICA</i> .	2022
Outstanding Graduate Research Assistant Award. <i>Department of Geography, Penn State</i> .	2022
Young Scientist Award. <i>ICA</i> .	2021
Early Career Scholar Award. <i>U.S. National Committee to the ICA</i> .	2021
Geospatial Intelligence Scholarship. <i>US Geospatial Intelligence Foundation</i> .	2021
Damon Anderson Memorial Scholarship. <i>WLIA</i> .	2021
FEGR Top-up Award, <i>Penn State College of Earth and Mineral Sciences</i> .	2020
Olmstead Award for Excellence in Cartography. <i>Department of Geography, UW–Madison</i> .	2020
Jerome Kohn Geographic Excellence Award. <i>Department of Geography, UW–Madison</i> .	2019
Phi Beta Kappa. <i>UW–Madison</i> .	2019
William F. Vilas Merit Scholarship. <i>UW–Madison</i> .	2018
College of Letters and Sciences Dean’s List. <i>UW–Madison</i> .	2018 – 2020
Community Environmental Scholar. <i>UW–Madison</i> .	2017 – 2018
College of Agriculture and Life Sciences Dean’s List. <i>UW–Madison</i> .	2016 – 2018

## TEACHING APPOINTMENTS

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<b>Instructor</b>	Fall 2024
Department of Geography, Penn State	
Geography 361: Cartography—Maps and Map Construction	

**Teaching Assistant**

Fall 2023

Department of Geography, Penn State  
Geography 361: Cartography—Maps and Map Construction

**Teaching Assistant**

Spring 2020

Department of Geography, UW–Madison  
Geography 575: Interactive Cartography and Visualization

**SERVICE**

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**Leadership Roles**

Student Director, <i>AAG Cartography Specialty Group</i> .	2024 – Present
Editorial Board, <i>Cartography and Geographic Information Science</i> .	2024 – Present
Editorial Board, <i>Journal of Maps</i> .	2022 – Present

**Peer Reviewer**

<i>Preventing Chronic Disease</i> .	2024 – Present
<i>GeoHumanities</i> .	2024 – Present
<i>Cartographica</i> .	2024 – Present
<i>The Cartographic Journal</i> .	2024 – Present
<i>International Journal of Geographic Information Science</i> .	2023 – Present
<i>International Journal of Cartography</i> .	2023 – Present
<i>International Journal of Human-Computer Interaction</i> .	2022 – Present
<i>Cartography and Geographic Information Science</i> .	2021 – Present

**Conference Session Organization**

Putting the Human Back in Cartography: Methods and Theories. (2024). *American Association of Geographers Annual Meeting (AAG)*. Honolulu, HI: April 18. Sponsored by the Cartography Specialty Group. Co-organized with Jack Swab.



## INSTITUTIONAL SERVICE

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<b>Undergraduate Student Mentor</b> GeoGraphics Lab, Penn State	2024 – Present
<b>President, Supporting Women in Geography</b> Department of Geography, Penn State.	2021 – 2023
<b>Graduate Coordinator, Undergraduate Research Opportunities Connection</b> Department of Geography, Penn State.	2021 – 2022

## PROFESSIONAL EXPERIENCE

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<b>Cartographer</b> Penn State GeoGraphics Lab	August 2023 – Present
<b>Cartography Intern</b> Cartography Team, Apple Maps	May 2021 – August 2021
<b>Web Developer</b> University of Wisconsin Cartography Lab, UW-Madison	January 2019 – August 2020

## PROFESSIONAL TRAINING

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Penn State CIRTl Associate-Level Teaching Certificate	2024
Collaborative Institutional Training Initiative Certificate for Human Subject Research	2022
LinkedIn Learning Git Essential Training	2019
LinkedIn Learning GitHub for Web Designers	2019
LinkedIn Learning CSS Essential Training 1-3	2019
LinkedIn Learning Javascript Essential Training	2018
LinkedIn Learning Crafting Meaningful HTML	2019
LinkedIn Learning HTML Essential Training	2018

## **PROFESSIONAL MEMBERSHIPS**

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Member, Cartography and Geographic Information Society	2024 – Present
Member, ICA—Commission on Ethics	2023 – Present
Member, Cartography Specialty Group of the AAG	2019 – Present
Member, NACIS	2019 – Present