University of Michigan
School of Information

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Nathan TeBlunthuis

Academic Appointments

University of Michigan
2023–. Postdoctoral Research Fellow, School of Information

Northwestern University
2021–2022. Postdoctoral Scholar, School of Communication

University of Washington
2015–2021. Research Assistant, Department of Communication
2019–2021. Instructor of Record, Department of Communication
2017–2019. Teaching Assistant, Department of Communication

Education

University of Washington
2017–2021. PhD, Department of Communication. Committee: Benjamin Mako Hill (Chair), Aaron Shaw, David W. McDonald, Kirsten Foot. General examinations in (1) Computer Supportive Cooperatve Work (2) Organizational Communication (3) Communication Theory. Dissertation title: "Ecology of Online Communities."
2015–2017. MA, Department of Communication. Committee: Benjamin Mako Hill (Chair), W. Lance Bennett. Thesis title: "Density Dependence without Resource Partitioning on an Online Petitioning Platform."

Whitworth University
2008–2012. Bachelors of Science in *Mathematics*.
2008–2012. Bachelors of Science in *Computer Science*.

Publications

Articles in Peer Reviewed Journals and Conference Proceedings

TeBlunthius, Nathan, Valarie Hase, and Chung-hong Chan. 2023. "Misclassification in Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!" In *Communication Methods and Measures*. https://arxiv.org/abs/2307.06483. *Accepted.*

TeBlunthuis, Nathan, and Benjamin Mako Hill. 2022. "Identifying Competitive and Mutualistic Relationships Between Online Communities." In *International AAAI Conference on Web and Social Media (ICWSM 2022)* https://ojs.aaai.org/index.php/ICWSM/article/view/19352/19124.

TeBlunthuis, Nathan, Charles Kiene, Isabella Brown, Nicole McGinnis, Laura (Alia) Levi, and Benjamin Mako Hill. 2022. "No Community Can Do Everything: Why People Participate in Similar Online Communities." In *Proceedings of the ACM: Human-Computer Interaction (CSCW)*. https://dl.acm.org/doi/10.1145/3512908.

TeBlunthuis, Nathan. 2021. "Measuring Wikipedia Article Quality in One Dimension." In *Proceedings of the 17th International Symposium on Open Collaboration (OpenSym '21)*. Online: ACM Press. https://doi.org/10.1145/3479986.3479991.

TeBlunthuis, Nathan, Benjamin Mako Hill, and Aaron Halfaker. 2021. "Effects of algorithmic flagging on fairness: Quasi-experimental evidence from Wikipedia." In *Proceedings of the ACM: Human-Computer Interaction (CSCW)*. 56:1-56:27. https://doi.org/10.1145/3449130.

Narayan, Sneha, Nathan TeBlunthuis, Wm Salt Hale, Benjamin Mako Hill, and Aaron Shaw. 2019. "All Talk: How Increasing Interpersonal Communication on Wikis May Not Enhance Productivity." In *Proceedings of the ACM: Human-Computer Interaction (CSCW)*: 101:1-101:19. https://doi.org/10.1145/3359203.

TeBlunthuis, Nathan, Tilman Bayer, and Olga Vasileva. 2019. "Dwelling on Wikipedia: Investigating Time Spent by Global encyclopedia Readers." In *Proceedings of the 15th International Symposium on Open Collaboration (OpenSym '19)*. Skövde. Sweden: ACM Press. https://doi.org/10.1145/3306446.3340829.

TeBlunthuis, Nathan, Aaron Shaw, and Benjamin Mako Hill. 2018. "Revisiting 'The Rise and Decline' in a Population of Peer Production Projects." In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. New York, New York: ACM Press. https://doi.org/10.1145/3173574.3173929.

Weninger, Tim, Marina Danilevsky, Fabio Fumarola, Joshua Hailpern, Jiawei Han, Thomas J Johntson, Surya Kallumadi, Hyungsul Kim, Zhijin Li, David McCloskey, Yizhou Sun, Nathan E TeGrotenhuis, Chi Wang, and Xiao Yu. 2011. "Winacs: Construction and analysis of web-based computer science information networks." In *Proceedings of the 2011 ACM SIGMOD International Conference on Management of data (SIGMOD 11)*, 1255-1258. Athens, Greece: ACM Press. https://doi.org/10.1145/1989323.1989469.

Hrma, Pavel, José Marcial, Kevin J Swearingen, Samuel H Henager, Michael J Schweiger, and Nathan E TeGrotenhuis. 2010. "Conversion of batch to molten glass, II: Dissolution of quartz particles." Journal of Non-Crystalline Solids 357 (3): 820-828. https://doi.org/10.1016/j.jnoncrysol.2010.11.096.

Schweiger, Michael J, Pavel Hrma, Carissa J Humrickhouse, José Marcial, Brian J Riley, and Nathan E TeGrotenhuis. 2010. "Cluster Formation of Silica Particles in Glass Batches During Melting." Journal of Non-Crystalline Solids 356 (25): 1359-1367 https://doi.org/10.1016/j.jnoncrysol.2010.04.009.

Hrma, Pavel, Michael J Schweiger, Carissa J Humrickhouse, J Adam Moody, Rachel M Tate, Timothy T Rainsdon, Nathan E Tegrotenhuis, Benjamin M Arrigoni, Jose Marcial, Carmen P Rodriguez, and Benjamin H Tincher. 2010. "Effect of Glass-Batch Makeup on the Melting Process." Ceramics-Silikaty 54 (3): 193-211. http://www.ceramics-silikaty.cz/2010/pdf/2010_03_193.pdf.

Other Scholarly Publications

[Book chapter] TeBlunthuis, Nathan, 2022 "Big Data" In Andrea Ceron (Ed.), *Encyclopedia of Technology & Politics*. Northhampton, Massachusetts: Edward Elgar Publishing. (in press)

[Poster and Extended Abstract] TeBlunthuis, Nathan, Aaron Shaw, and Benjamin Mako Hill. 2017. "Density Dependence Without Resource Partitioning: Population Ecology on Change.org." *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 17 Companion)*, 323326. New York, New York: ACM Press. https://doi.org/10.1145/3022198.3026358w.

[Book review] TeBlunthuis, Nathan. 2018. "Helen Margetts, Peter John, Scott A Hale, Taha Yasseri, Political Turbulence: How Social Media Shape Collective Action." Journal of Information Technology & Politics 15 (1): 12. https://doi.org/10.1080/19331681.2017.1337603

Datasets

TeBlunthuis, Nathan, 2021, "Replication Data for: Measuring Wikipedia Article Quality in One Dimension by Extending ORES with Ordinal Regression", https://doi.org/10.7910/DVN/U5V0G1, Harvard Dataverse

TeBlunthuis, Nathan; Hill, Benjamin Mako; Halfaker, Aaron, 2021, "Replication data for: Effects of algorithmic flagging on fairness: Quasi-experimental evidence from Wikipedia", https://doi.org/10.7910/DVN/E0RYJ4, Harvard Dataverse

TeBlunthuis, Nathan; Benjamin Mako Hill; Aaron Shaw, 2018, "Replication Data for Revisiting 'The Rise and Decline' in a Population of Peer Production Projects", https://doi.org/10.7910/DVN/SG3LP1, Harvard Dataverse

Theses

TeBlunthuis, Nathan. "Ecology of Online Communities" 2021. University of Washington.

TeBlunthuis, Nathan. "Density Dependence without Resource Partitioning on an Online Petitioning Platform" 2017. University of Washington. https://digital.lib.washington.edu:443/researchworks/handle/1773/41690

Selected Working Papers

Coglazier, Carl, Nathan TeBlunthuis, and Aaron Shaw. "The Effects of Group Sanctions on Participation and Toxicity: Quasi-experimental Evidence from the Fediverse." (under review at *ICWSM*)

Presentations

Refereed Paper Presentations (Non-Archival)

Presenting authors are marked a "*" in the list below. Because conference or workshops norms about submission vary, some papers appear more than once.

TeBlunthius, Nathan, Valarie Hase, and Chung-hong Chan*. "Misclassification in Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!" 6th Monash-Warwick-Zurich Text-as-Data Workshop, Remote, Sep 18th, 2023.

TeBlunthuis, Nathan*, Valerie Hase, and Chung-Hong Chan. "Misclassification in Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!" Cascadia R Conference. Seattle, August 19 2023.

TeBlunthius, Nathan*, Valarie Hase, and Chung-hong Chan. "Misclassification in Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!" Annual Conference of the International Communication Association (ICA 2023), Toronto, May 28th, 2023.

TeBlunthuis, Nathan. 2022. "Toward a Theory of Online Organizational Ecology" National Communication Association Annual Convention, New Orleans, Nov 18th, 2022.

TeBlunthuis*, Nathan, Charles Kiene, Isabella Brown, Nicole McGinnis, Laura (Alia) Levi, and Benjamin Mako Hill. 2022. "No Community Can Do Everything: Why People Participate in Similar Online Communities." In *Proceedings of the ACM: Human-Computer Interaction (CSCW)*. https://dl.acm.org/doi/10.1145/3512908.

[Poster] TeBlunthius*, Nathan., Valarie Hase, Chung-hong Chan "How to Stop Ignoring Classification Errors" Text as Data Conference (TADA 2022), New York City, (Remote presentation) Oct 6th, 2022.

TeBlunthius*, Nathan. "Dynamics of Ecological Adaptation in Online Communities" International Conference on Computational Social Science (IC2S2 2022), Chicago, July 21st, 2022.

TeBlunthius*, Nathan. "Identifying Competitive and Mutualistic Relationships Between Online Communities." International Conference on Computational Social Science (IC2S2 2022), Chicago, July 21st, 2022.

TeBlunthius*, Nathan. "Identifying Competitive and Mutualistic Relationships Between Online Communities." International AAAI Conference on Web and Social Media (ICWSM 2022), Atlanta, June 8th, 2022.

TeBlunthius*, Nathan. "Dynamics of Ecological Adaptation in Online Communities" Computational Methods Division, Annual Conference of the International Communication Association (ICA 2022), Paris, May 27th, 2022.

Adekunle, Tiwaladeoluwa*, Jeremy Foote, Nathan TeBlunthuis and Laura Nelson. "Co-Creating Risk Online: Exploring Conceptualizations of COVID-19 Risk in Ideologically Distinct Online Communities" Health Communication Division, Annual Conference of the International Communication Association (ICA 2022), Paris, May 29th, 2022.

TeBlunthuis* Nathan. "Measuring Wikipedia Article Quality in One Dimension" Wiki Workshop held at The Web Conference 2022, Lyon, (Remote presentation), Apr 25th, 2022.

TeBlunthuis* Nathan. "Ecology of Online Organizations" Organizational Communication Mini-Conference (OCMC 2021), Lawrence, KS, (Remote presentation), Oct 23rd, 2021.

TeBlunthuis* Nathan., Benjamin Mako Hill. "A Community Ecology Approach for Identifying Competitive and Mutualistic Relationships Between Online Communities" Computational Methods Division, Annual Conference of the International Communication Association (ICA 2021), Cambridge, MA, (Remote presentation), May 27th, 2021.

TeBlunthuis* Nathan., Aaron Halfaker, Benjamin Mako Hill. "Algorithmic flags and Identity-Based Signals in Online Community Moderation" Session on Social

media 2, International Conference on Computational Social Science (IC2S2 2020), Cambridge, MA, (Remote presentation), July 19, 2020.

TeBlunthuis* Nathan., Aaron Shaw, Benjamin Mako Hill. "The Population Ecology of Online Collective Action." Session on Culture and fairness, International Conference on Computational Social Science (IC2S2 2020), Cambridge, MA, (Remote presentation), July 19, 2020.

TeBlunthuis* Nathan., Aaron Shaw, Benjamin Mako Hill. "The Population Ecology of Online Collective Action." Session on Collective Action, ACM Conference on Collective Intelligence (CI 2020), Boston, MA, (Remote presentation), June 18, 2020.

Narayan, Sneha, Nathan TeBlunthuis*, Wm Salt Hale, Benjamin Mako Hill, and Aaron Shaw. "More Connected But Not More Productive: Analyzing Support for Interpersonal Communication in Wikis." Session on Computational Approaches to Health Communication. Computational Methods, Annual Conference of the International Communication Association (ICA 2019), Washington, DC, May 27, 2019.

Foote, Jeremy D*, Benjamin Mako Hill, and Nathan TeBlunthuis. "An Agent-Based Model of Online Community Joining." Organizational Communication Mini-Conference (OCMC). New Brunswick, NJ, October 5, 2018.

Foote, Jeremy D.*, Benjamin Mako Hill, and Nathan TeBlunthuis. "An Agent-Based Model of Online Community Joining." Session on Collective Behavior. International Conference on Computational Social Science (IC2S2 2018), Evanston, IL, July 14, 2018.

[Poster] TeBlunthuis, Nathan. "Discovering Clusters of Opinion in Wiki Surveys with Bayesian Latent Factor Analysis" 4th Annual International Conference on Compuational Social Science (IC2S2 '18). Evanston, IL, July 13, 2018

TeBlunthuis, Nathan*, Aaron Shaw, and Benjamin Mako Hill. "Revisiting 'The Rise and Decline' in a Population of Peer Production Projects." Information Systems, Annual Conference of the International Communication Association (ICA 2018), Prague, May 25, 2018.

[Poster] TeBlunthuis, Nathan, Aaron Shaw, and Benjamin Mako Hill. 2017. "Density Dependence Without Resource Partitioning: Population Ecology on Change. Org." In *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 17 Companion)*, 323326. New York City: ACM Press. https://doi.org/10.1145/3022198.3026358.

TeBlunthuis, Nathan*, Benjamin Mako Hill and Aaron Shaw. "Density Dependence Without Resource Partitioning: A Population Ecology of Change.org." Session on Computational Methods for Studying Political Communication, Computational Methods, Annual Conference of the International Communication Association (ICA 2017), San Diego, May 29, 2017.

TeBlunthuis, Nathan*, Benjamin Mako Hill and Aaron Shaw. "Resource Partitioning and Density Dependence on a Digital Mobilization Platform." Internet, Politics, and Policy Conference (IPP 2016), Oxford University, Oxford, September 23, 2016.

TeBlunthuis, Nathan*, Benjamin Mako Hill and Aaron Shaw. "Resource Partition-

ing and Density Dependence on a Digital Mobilization Platform." Section on Communication, Information Technology, and Media Sociology, American Sociological Association Annual Meeting (ASA 2016), Seattle, August 23, 2016.

Invited Presentations

TeBlunthuis, Nathan*, Valerie Hase, and Chung-Hong Chan. "Misclassification in Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!" Data Science Seminar, University of Washington E-science Institute, Seattle, October 10, 2023.

TeBlunthuis, Nathan, 2023 "Ecology of Online Communities." Data Science Seminar, University of Michigan School of Information, Ann Arbor, February 2, 2023.

TeBlunthuis, Nathan, Benjamin Mako Hill, and Aaron Halfaker. 2021 "Effects of algorithmic flagging on fairness: Quasi-experimental evidence from Wikipedia." Wikimedia Research Showcase, Online, November 17, 2021.

TeBlunthuis, Nathan*, Aaron Shaw, and Benjamin Mako Hill. "Revisiting 'The Rise and Decline' in a Population of Peer Production Projects." Wikimedia Research Showcase, Online, April 18, 2018.

Datasets

TeBlunthuis, Nathan, 2021, "Replication Data for: Measuring Wikipedia Article Quality in One Dimension by Extending ORES with Ordinal Regression", https://doi.org/10.7910/DVN/U5V0G1, Harvard Dataverse

TeBlunthuis, Nathan; Hill, Benjamin Mako; Halfaker, Aaron, 2021, "Replication data for: Effects of algorithmic flagging on fairness: Quasi-experimental evidence from Wikipedia", https://doi.org/10.7910/DVN/E0RYJ4, Harvard Dataverse

TeBlunthuis, Nathan; Benjamin Mako Hill; Aaron Shaw, 2018, "Replication Data for Revisiting 'The Rise and Decline' in a Population of Peer Production Projects", https://doi.org/10.7910/DVN/SG3LP1, Harvard Dataverse

Theses

TeBlunthuis, Nathan. "Ecology of Online Communities" 2021. University of Washington.

TeBlunthuis, Nathan. "Density Dependence without Resource Partitioning on an Online Petitioning Platform" 2017. University of Washington. https://digital.lib.washington.edu:443/researchworks/handle/1773/41690

Teaching

Courses

2021, Winter. Interpersonal Media: Online Communities (COM 482). UW Department of Communication's undergraduate program. (Instructor of Record)

2019, Spring. Interpersonal Media: Online Communities (COM 482). UW Department of Communication's undergraduate program. (Instructor of Record)

2019, Winter. Organizational Communication (COM 377). UW Department of Communication's undergraduate program. (TA)

2017, Fall. Innovation Communities (COM597B – Masters Level). UW Communication Leaderships Masters in Communication in Communities and Networks program. (TA)

Directed Research Groups

I have lead or co-lead the following "Directed Research Groups" (DRGs) that students enroll in as independent studies for credit but which are organized more like small project-based classes. Typically a cohort of enrolled students meets weekly with myself and a faculty advisor as part of a group research project.

2021, Winter, Spring. Directed Research Group on qualitative analysis of online community ecology. (2 students; organized with Benjamin Mako Hill) (COM499–Undergraduate).

2022, Spring. Directed Research Group on the construction of rules and policy in Wikia wikis. (2 students; organized with Aaron Shaw) (COM499–Undergraduate).

Guest Lectures

TeBlunthuis* Nathan., Aaron Halfaker, Benjamin Mako Hill "Effects of Algorithmic Flagging on Fairness: Quasi-Experimental Evidence from Wikipedia." Research Methods (CS 499), Whitworth University. Spokane, WA, November 16, 2021.

TeBlunthuis, Nathan "Ecological Perspectives on Innovation Communities." UW Communication Leaderships Masters in Communication in Communities and Networks program. Seattle, WA, May 11, 2021.

TeBlunthuis* Nathan., Aaron Halfaker, Benjamin Mako Hill "Algorithmic flags and Identity-Based Signals in Online Community Moderation." Introduction to Data Science (CS 251), Whitworth University. Spokane, WA, May 3, 2021.

TeBlunthuis* Nathan., Aaron Halfaker, Benjamin Mako Hill "Algorithmic flags and Identity-Based Signals in Online Community Moderation." Algorithms and Society (SI 431). Ann Harbor, MI, February 18, 2021.

TeBlunthuis, Nathan "Ecology of Online Communities." UW Communication (COM 482). Seattle, WA, March 04, 2020.

TeBlunthuis, Nathan "Ecological Perspectives on Innovation Communities." UW Communication Leaderships Masters in Communication in Communities and Networks program. Seattle, WA, November 16, 2017.

Grants & Awards

Grants

2019-08-15–2022-07-31. *National Science Foundation* (IIS-1908850) for "Modeling the Ecological Dynamics of Online Organizations." Named personnel. Coauthored grant to support dissertation. (Total: $497,724; UW: $279,966)

2015–2020. *National Science Foundation* Graduate Research Fellowship Program ($108,000)

Awards

2023. *Top Paper Award* from the *Computational Methods Division* at the *73rd annual International Communication Association Conference* for "Misclassification in

Automated Content Analysis Causes Bias in Regression. Can We Fix It? Yes We Can!"

2022. *Top Paper Award* from the *Computational Methods Division* at the *72st annual International Communication Association Conference* for "Dynamics of Ecological Adaptation in Online Communities."

2022. *Faculty Award for Outstanding ResearchPh.D. Dissertation* from the *Department of Communication* at the *University of Washington* for "Ecology of Online Communities."

2021. *Top Paper Award* from the *Computational Methods Division* at the *71st annual International Communication Association Conference* for "A Community Ecology Approach for Identifying Competitive and Mutualistic Relationships Between Online Communities."

Service

Research Affiliations

2015–. Member, *Community Data Science Collective*.

2015–. Member, Design Use Build (dub), Human Computer Interaction Group, University of Washington.

Professional Organization Membership

2016–. Member, *International Communication Association*. Section Memberships: Computational Methods, Organizational Communication, Information Systems, Political Communication.

2017–. Member. *Association for Computing Machinery*. Section Memberships: SIGCHI, CSCW.

Reviewing

I am a reviewer for the following journals, conferences, grant organizations, and academic presses in communication, computational social science, and human computer interaction:

ACM Conference on Computer-supported Cooperative Work and Social Computing (CSCW), ACM Conference on Human Factors in Computing (CHI), Future Internet, Journal of Communication (JOC), International Journal of Communication (IJOC), International Communication Association Annual Meeting (ICA), National Communication Association Annual Convention (NCA), Journal of Computational Social Science (JCSS), Studies in Communication and Media (SCM), The Internaional Symposium on Open Collaboration (OpenSym), PNAS NEXUS, Journal of Internet Services and Applications (JISA), Wikimedia Research Fund, Swedish National Science Foundation

I have received "Special Recognitions for Outstanding Reviews" from ACM's SIGCHI for reviews submitted for CSCW 2019, CSCW 2020, and CSCW 2021.

Public Talks

TeBlunthuis, Nathan, Tilman Bayer, and Olga Vasileva. "Dwelling on Wikipedia: Investigating Time Spent by Global encyclopedia Readers." Wikimania. Stockholm, Sweden, August 17 2019.

TeBlunthuis, Nathan, "Personal Story Telling and Grassroots Recruitment", Scholars Studio, University of Washington, Seattle, Washington, February 16 2017

Workshops & Seminars

Spring & Fall; 2015, Spring & Fall. 2016, Spring & Winter 2020. Mentor, Community Data Science Workshops, Department of Communication and eScience Institute, University of Washington.

Fall. 2016, Spring & Winter 2020. Lecturer, Community Data Science Workshops, Department of Communication and eScience Institute, University of Washington.

Other Service Activities

2021–. *WikiEducation Foundation* Faculty Mentor.

Industrial & Nonprofit Experience

2023 *Wiki Education Foundation*, Data Science Consultant: Visualizing Impact. San Francisco, California, United States. Technical Advisor for Data Science Projects to Monitor Program Impacts on Wikipedia Content.

2019 *Wikimedia Foundation*, Research Intern: Scoring Team. San Francisco, California, United States. Lead original research project investigating algorithmic bias and flagging systems in online platform governance published in CSCW 2021.

2018 *Wikimedia Foundation*, Data Analyst Consultant: Growth Team. San Francisco, California, United States. Designed reading time metrics for Wikipedia and lead original research project published in OpenSym 2019.

2012–2014. *Microsoft Corporation*, Software Develement Engineer: Bing Multimedia UX. Bellevue, Washington. Built distributed back-end systems to drive multimedia engagement features on Bing.com. Trained search recommendation algorithms.

2008–2010. *Pacific Northwest National Laboratory*, Technical Intern: Nuclear waste vitrification. Richland, Washington. Developed method for measuring sample volume and expansion during melting in high-temperature furnace.

Journalism and Legal Research

Contributed data collection and analysis as a source to "Are bots manipulating the 2020 conversation? Heres whats changed since 2016." Washington Post. November 20, 2019.

Contributed data collection, analysis and visualization to article with journalist Alex Lubben.

Research and statistical consulting for a major lawsuit (details are private).