Jack Hester, MPH

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Education

September 2021–Present — **Northeastern University**, *Boston, MA.*
Doctor of Philosophy, Personal Health Informatics — Expected Graduation 2026
Courses Include: Human-computer interaction, mobile app development, foundations in personal health informatics, empirical research methods, biostatistics, and intervention design

2019–2021 — **Brown University**, *Providence RI.*
Master of Public Health, Health Services Concentration
Courses Included: Medical device design and wearables, technology and health behavior change, GIS, quantitative health care decision analysis, designing health interventions, US health systems, biostatistics, regression, epidemiology, statistical programming in R
Thesis: "Predicting Lyme Disease Cases in the Northeastern United States Using Remote Sensing and Weather Station Data."

2015–2019 — **Emory University**, *Atlanta, GA.*
Bachelor of Arts, Interdisciplinary Studies: Emphasis in upstream healthcare and behavioral modeling
Courses Included: Data visualization, biological and computational modeling, natural language processing and computational linguistics, food security, special topics in the opioid epidemic, research methods, biomedical ethics
Thesis: "A Verb-Based Approach to Mining Adverse Drug Side Effects from Online Health Care Forums."

Experience

September 2021–Present — **Northeastern University,** PhD Trainee Fellow, Personal Health Informatics, *Boston, MA.*

- Creating and adapting android watch and phone code to present images and record audio for an Aphasia study of anomia symptoms in older adults post-stroke
- Working towards a campus-wide pilot initiative to collect and analyze health data using wearables, mobile phones, environmental sensors, and ecological momentary assessment (EMA), including conducting a systematic literature reviews of similar projects, and determining best practices for citizen science and quantified self approaches to health monitoring

January 2022–Present — **Redshift Project** Propulsion Software Lead, *Boston, MA.*

- Redesigning onboard software for kerolox propulsion test stand
- Primary controls operator for water flow, cold flow, and hot fire tests
- Starting May of 2022, responsible for managing software development team
- Designing graphical user interface and logger software to interface with onboard software
- Assisting with avionics and test stand electronics, responsible for sensor calibrations

September 2021– Present

Project Horizon Project Lead, Systems/Communications Team Member, *Boston, MA.*

- Working on the Northeastern University's first satellite, a 3U CubeSat
- Project lead responsible for coordinating workshops, presenting to payload partners, and building the ground station
- Working with the Systems/Comms team to integrate ground station technology into the overall communication system and to build a server and install software necessary for on-the-ground communication
- Previously member of the engineering team, generated preliminary designs, component prototypes, and payload concepts

April 2020– October 2022

COVID Task Force/Truckee Meadows Risk Meter, Appointee/Volunteer, *Reno, NV.*

- Performing research, gathering and analyzing data, and making recommendations to support the creation of a COVID-19 risk meter based on public health and health care system metrics. Also, part of a small team responsible for web development, writing Python code that updates the meter daily, and writing documentation
- Risk meter adopted by the county health district
- Results presented at the national American Public Health Association conference

Summers 2020-2023

Brown University-Summer@Brown, Instructor, *Providence, RI.*

- Designed and taught a new course, "From Idea to Publication: Building Your Own Research Project," and supervised a TA
- Course stepped students through basics of research, including systematic reviews and citations, basic statistics and hypothesis testing, data visualization and presentation, academic writing standards with a focus on evidence-based research methods, and evidence synthesis techniques
- Students ages 15-18
- Course taught online for 6 weeks with a class size of approximately 20

January 2021– May 2021

Brown-Lifespan Center for Digital Health, Intern, *Providence, RI.*

- Conducted research and wrote grant applications to support expansion of the My-CovidRisk App
- Transcribed and analyzed user research interviews and wrote conference abstracts based on the results

October 2019– April 2021

Center for Evidence Synthesis in Health, Graduate Research Assistant, *Providence, RI.*

- Building Evidence Synthesis Academy website modules, including website programming
- Developed a Summer@Brown course that focuses on evidence-based research methods and evidence synthesis techniques

March– September 2020

Build Health Challenge®-The HELLO Project, Intern, *Reno, NV.*

- Robert Wood Johnson Foundation and BUILD Health Challenge grant funded project to address the region's senior citizen loneliness epidemic and higher-than-average suicide rate
- Participated in monthly stakeholder meetings, provided input at weekly staff meetings, and edited bi-weekly podcasts

March–May 2020 **SafeTrace,** Health Data Scientist, Lead Frontend Developer, *Global Collaborative.*

- As part of a global group, developed a privacy-first COVID-19 contact tracing app and research platform
- Worked on epidemiological models and tools and lead the mobile app development team
- Coded python tools and mobile app, worked on privacy model, prepared two whitepapers

January–May 2019 **Emory University Quantitative Sci./Linguistic Depts.,** Teaching Assistant, *Atlanta, GA.*

- Built software tools and GUI for automatic natural language processing, used by students and other researchers in the department
- Created and graded assignments and tests, held office hours for "Big/Small Data Visualization" course

May–October 2018 **Workwinz,** Full Stack Developer, *Atlanta, GA and Reno, NV.*

- Programmed front-end of website using HTML, CSS, PHP, and JavaScript
- Built and implemented backend for user sign-up and rewards system using SQL, AWS hosting, and Google APIs

March–July 2017 **Emory University Institute for the Liberal Arts,** Research Assistant, *Atlanta, GA.*

- Designed and prototyped "Philosophy in Science" website which allowed readers to navigate between examples and stories to enhance understanding of philosophical principles, used WordPress for website design

June–August 2016 **The Abbi Agency Creative Content Department,** Intern, *Reno, NV.*

- Authored press releases, responses to requests for proposals, and event descriptions on behalf of local government and private entities as well as for internal agency use

June–July 2015 **Marketing Evolution,** Software Engineering Intern, *Reno, NV.*

- Created mock-ups of Apple Watch app, including storyboarding app workflow and UX diagrams
- Programmed front end of watch app using Swift, connected app to company backend
- App presented users with simple interface with personalized marketing analytics (such as ROI) at a glance

May 2015 **Shriners Hospital,** Intern, *Sacramento, CA.*

- Previously a patient at Shriners, worked in departments where I received care
- Assisted with repairing and building prostheses in Pediatric Orthotic and Prosthetic Lab and shadowed prosthetists during patient visits
- Shadowed orthopedic doctor in Ambulatory Clinic

June 2014 **Renown Hospital,** Job Shadowing, *Reno, NV.*

- Shadowed pathologist, participated in collection of samples in operating room, viewed slides of the samples
- Saw numerous types of tumors, growths, and diseases present in samples, and how pathologists interact with surgeons to improve patient outcomes

Speaking

Invited Panels and Presentations

January 2021 **Jack Hester,** et. al, *Towards the Creation of a Campus Living Lab,* Khoury College PhD Open House, Boston, MA: March 7, 2022.

January 2021 **J. Hester,** et. al, *Truckee Meadows COVID Risk Meter Facebook Forum,* City of Reno, Reno NV: January 8, 2021.

April 2018 A. Stutz, B. Greenfield, **J. Hester,** J. Sarrett, K. Dreffs, R. Kolb. *Perspectives on the Inclusion and Success of Students with "Disabilities" in Colleges and Universities,* Emory Inclusion Summit, Atlanta, GA: April 19, 2018.

Guest Lectures

October 2021 **Addressing Senior Loneliness,** St. John Fisher College Public Health Program, Online.
- Guest lectured on senior loneliness in the context of public health practice
- Gave background on senior loneliness epidemic in the US and provided applications of health intervention theories and models to this domain with examples from the HELLO Project

October 2020 **Intro to Web Scraping in Python for NLP,** Emory Univ. Quant. Sci. Dept., Atlanta, GA.
- Guest lectured on web scraping in Python using BeautifulSoup
- Taught basics of web scraping with examples from ongoing NLP research with the course professor

October 2018 **Data Can Be Beautiful,** Emory University Institute for the Liberal Arts, Atlanta, GA.
- Lectured on data visualization in the Emory University Interdisciplinary Studies major senior seminar
- Taught basics of data visualization with examples from personal research and an interactive network diagram of each of the students' areas of study

Conference Presentations and Abstracts

June 2023 E. Meier, **J. Hester**, H. Le, L. Ugent, A. Reilly, N. Mitchell, S. Intille. *Ecological momentary assessment in post-stroke aphasia: Pitfalls and promise,* 52nd Clinical Aphasiology Conference, Atlantic City, NJ: June 2, 2023.

November 2022 **J. Hester**, J. Smith, R. Aryel, E. Nielsen, H. Kerwin, N. Duerr, A. Nair. *The creation, dissemination, and evolution of an evidence-based, community-level COVID-19 risk meter with local government and stakeholder input,* American Public Health Association Annual Conference, Boston, MA: November 8, 2022.

November 2022 *Towards disease forecasting using remote sensing data: predicting Lyme Disease cases in the northeastern United States using satellite and weather station data,* American Public Health Association Annual Conference, Boston, MA: November 8, 2022.

August 2021 C. Bingaman, R. Wang, A. Haut, **J. Hester**, P. Sudheesha, M. Ranney. *MyCOVIDRisk: User Experience (UX) Study of COVID-19 Risk Assessment and Mitigation Application,* American College of Emergency Physicians Research Forum, Virtual: August 4, 2021.

April 2021 *Predicting Lyme Disease Cases in the Northeastern United States Using Remote Sensing and Weather Station Data,* Brown University Public Health Research Day, Virtual: April 7, 2021.

December 2020 C. Chen, H, Wells, **J. Hester,** M Sodhi, M Bibbey, D Kim. *Increasing Voter Engagement,* Design for America National Project Critiques, Virtual: December 6, 2020.

April 2019 **J. Hester,** C. Baden. *Beautiful Data: Visualization techniques for research and classrooms,* Critical Juncture 2019, Atlanta, GA: April 6, 2019.

February 2019 *Doing Away with the Drudgery of Hand-Coded Content Analysis,* 37th Annual Southeastern Undergraduate Sociology Symposium; Morehouse College, Atlanta, GA: February 23, 2019.

April 2018 *A New Standard for Discovering Side Effects: Using linguistic analysis algorithms to predict prescription drug side effects from online forum posts,* Emory University Undergraduate Research Symposium, Atlanta, GA: April 25, 2018.

April 2018 *Mining Adverse Drug Side Effects from Online Forum Posts,* ILA Undergraduate Research Symposium, Atlanta, GA: April 20, 2018.

March 2017 *Mobility at a Standstill: Improving flawed transportation and accessibility in the US,* Critical Juncture 2017, Atlanta, GA: March 18, 2017.

Papers

Peer Reviewed

October 2023 **Hester J**, Le H, Intille S, Meier E. 2023. A feasibility study on the use of audio-based ecological momentary assessment with persons with aphasia. In *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23)*. Association for Computing Machinery, New York, NY, USA. `https://doi.org/10.1145/3597638.3608419`

White Papers

November 2020 **Jack Hester**, Ron Aryel, Eric Nielsen, Heather Kerwin, Naomi Duerr, Jeremy Smith, *Creating a Public-facing COVID-19 Risk Meter for the Truckee Meadows Community,* https://tmrpa.org/covid-wc.

April 2020 **Jack Hester,** *Proposed Epidemiological Models and Methods to Improve COVID-19 Contact Tracing and Outbreak Prediction,* https://safetraceapi.org/

March 2020 Justin Lewis, Ari Rodriguez, **Jack Hester,** Linc Gasking, *SafeTrace API,* https://safetraceapi.org/.

Community Involvement

April 2020– Present **City of Reno Public Health Emergency Advisory Board,** Member and Sec., *Reno, NV.*

- Working on the City's COVID-19 response, including aggregating data and public-facing metrics and visualizations

September 2020– April 2021 **Design for America RISD|Brown,** Member, *Providence, RI.*

- Working on Design for America team to increase voter engagement and turnout among college students and others living in Rhode Island by creating interactive, physical and digital art installations. Attending weekly workshop meetings to learn about the design process from industry leaders and technology firms, and to receive feedback on project ideas

September 2015– May 2019 **Emory University Disability Studies Initiative,** Member, *Atlanta, GA.*

- As an undergraduate at Emory, participated in the Disability Studies Initiative, a group of faculty and students interested in the social, cultural, historical, political, and legal dimensions of disability. Work included petitioning Emory University to recognize American Sign Language as a foreign language credit

December 2012– January 2016 **Sky Tavern Junior Ski Program,** Ski Instructor, *Reno, NV.*

- Certified ski instructor at largest not-for-profit community ski program in the US.
- Learned to ski in adaptive ski program, then as a volunteer taught able-bodied and adaptive skiers for over 250 hours
- Became Professional Ski Instructors of America Level 1 instructor with Child Specialist certification

Professional Memberships and Certifications

Member	American Public Health Association
Member	American Institute of Aeronautics and Astronautics
Member	Boston CHI
Member	American Planning Association
Certification	CITI IRB—Basic Human Subjects Protection: Social/Behavioral Focus
Certification	Professional Ski Instructors of America - Level 1 Instructor
Certification	Professional Ski Instructors of America - Child Specialist Instructor

Skills

Statistical Software

- *Software packages:* R/R Markdown, Stata, and SPSS
- *Coursework:* Biostatistics, R programming, and an APHA Learning Institute course on biostatistics and SPSS

Programming Languages

- *Languages:* Python, Java, HTML/CSS, C++. PHP, SQL, R, and Swift
- *Coursework:* Algorithm design and computational modeling

Data Visualization

- *Software:* Gephi, visjs, matplotlib (Python) d3js (JavaScript), ggplot2 (R), and LaTeX
- *Natural language processing tools:* Web scraping, Stanford CoreNLP, Yago, WordNet, and topic modeling via Gensim and Mallet
- *Coursework:* Data visualization with applications in computational linguistics, marketing, and advertising

Geographic Information Systems (GIS)

- *Software:* ArcGIS (Pro and Online), Google Earth, Google Earth Engine, QGIS
- *Coursework:* A GIS directed study course using health and remote sensing databases and an ESRI course in ArcGIS cartography

Languages

- English (Fluent) and Spanish (Advanced)