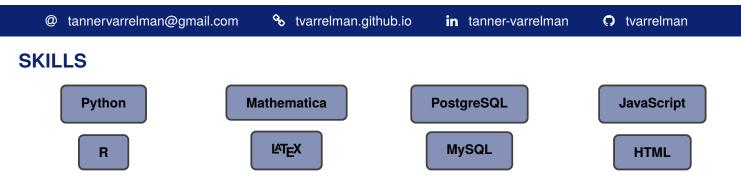
Tanner Varrelman

PhD Candidate

I am currently a graduate student at the University of Idaho, specializing in data storage, processing, visualization, and modeling. To this end, I have worked with database integration/architecture, I have created web-based data visualizations, and I have developed and fit mathematical models to biological data.



EDUCATION

Ph.D. Bioinformatics & Computational Biology B.S. Biology

EXPERIENCE

Research Assistant

- Develop mathematical models of transmissible vaccines.
- Development and management of an environmental database to aid in predictive modeling of Lassa virus in West Africa (https://preemptlassawestafrica.ibest.uidaho.edu/res/map.php).
- · Develop python scripts to scrape and process environmental raster data from various data sources.
- Use GIS data and machine learning techniques to forecast the risk of infectious disease.

Lab Rotation

- Northwest Knowledge Network

 Aug 2020 Dec 2020
- Develop and manage a Lassa virus database consisting of both viral infection and viral sequence data.
- Create a Lassa virus dashboard that includes interactive data visualizations, filtered data download, and admin tools to insert new data into the Lassa virus database (https://lassa.nkn.uidaho.edu).

Undergraduate Researcher

PUBLICATIONS

- Basinski, Andrew et al. (Mar. 2020). "Bridging the gap: Using reservoir ecology and human serosurveys to estimate Lassa virus incidence in West Africa". In: DOI: 10.1101/2020.03.05.979658.
- Nuismer, Scott L. et al. (Sept. 2020). "Bayesian estimation of Lassa virus epidemiological parameters: Implications for spillover prevention using wildlife vaccination". In: *PLOS Neglected Tropical Diseases* 14.9, pp. 1–20. DOI: 10.1371/journal.pntd.0007920. URL: https://doi.org/10.1371/journal.pntd.0007920.
- Varrelman, Tanner J. et al. (2019). "Transmissible vaccines in heterogeneous populations: Implications for vaccine design". In: *One Health* 7, p. 100084. ISSN: 2352-7714. DOI: https://doi.org/10.1016/j.onehlt.2019.100084. URL: http://www.sciencedirect.com/science/article/pii/S2352771418300454.
- Basinski, Andrew J. et al. (2018). "Evaluating the promise of recombinant transmissible vaccines". In: Vaccine 36.5, pp. 675-682. ISSN: 0264-410X. DOI: https://doi.org/10.1016/j.vaccine.2017.12.037. URL: http://www.sciencedirect.com/science/article/pii/S0264410X17317905.

PRESENTATIONS

- Contributed lightning talk. Forecasting Lassa Fever. UI Research Computing and Data Science Symposium. 2019.
- Contributed poster. Transmissible vaccines in heterogeneous populations: Implications for vaccine design. University of Idaho IBEST Science Expo. 2018. Tanner J. Varrelman, Andrew J. Basinski, Christopher H. Remien, Scott L. Nuismer.