

# Gabriella E. Veytsel

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## SUMMARY

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Recent graduate and current Postdoctoral Research Associate in the Bahl Lab, University of Georgia. PhD in Bioinformatics, MPH in Epidemiology, and BS in Public Health. Skilled in infectious disease research, including data analysis and visualization, spatial statistics, phylogenetics, and computational biology. Experienced in public health practice and research (e.g., CDC, microbiology laboratories, county and state health departments, and tribal and international health facilities). Values teaching, mentoring, leadership, service, science communication, and collaboration.

## EDUCATION

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### Doctor of Philosophy (PhD) in Bioinformatics

Athens, GA

University of Georgia Institute of Bioinformatics

May 2025

- Dissertation: Phylodynamic Modeling Insights into Viral Evolution, Genomic Epidemiology, and Landscape Ecology from Human, Animal, and Wastewater Surveillance
- Advised by Dr. Justin Bahl
- Relevant Coursework: Bioinformatics Algorithms, Programming & Data Structures for Bioinformatics, Molecular Phylogenetics & Evolution, Modern Applied Data Analysis, Applied Data Science for Wastewater Epidemiology, Wastewater & Environmental Epidemiology Journal Club, Introduction to Grant Writing

### Master in Public Health (MPH) in Epidemiology

Seattle, WA

University of Washington School of Public Health

Jun 2018

- Thesis: Spatio-Temporal Trends of Typhoid Fever Incidence in Kibera (2007-2015)
- Advised by Dr. Grace John-Stewart
- Relevant Coursework: Molecular Evolution of Viral-Host Interactions, Economic Evaluation in Health & Medicine, Geographic Information Systems in Public Health, Field Epidemiology, Statistical Methods for Spatial Epidemiology, Applied Biostatistics, Introduction to Epidemic Modeling for Infectious Diseases, Epidemiologic Methods, Surveillance Systems & Decision Making in Public Health

### Bachelor in Science (BS) in Public Health

Seattle, WA

University of Washington School of Public Health

Mar 2016

- Relevant Coursework: Ecology of Environmentally Transmitted Microbiological Hazards, Antibiotic Resistant Bacteria/Genes Impact on Environment & Public Health, Medical Virology, Geographical Patterns of Health and Disease, Introduction to Medical Anthropology & Global Health, Study Abroad - Community Development in South Africa

## WORK EXPERIENCE

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### University of Georgia

Athens, GA

Research Assistant, Bahl Lab

Jan 2021 – May 2025

- Support Pathogen Genomics Centers of Excellence research projects and CDC contracts, mentor junior graduate students, support grant and contract proposal writing, review white papers and grant proposals, develop materials for health department partners, manage SARS-CoV-2 clinical specimens, and deposit sequence data to public repositories. Communicate research via conferences, seminars, meetings with academic and government partners, and publications.

## **Centers for Disease Control and Prevention**

Atlanta, GA

*National Center for Emerging and Zoonotic Infectious Diseases*

*Division of High Consequence Pathogens and Pathology*

*Poxvirus and Rabies Branch*

Spatial Epidemiologist, ORISE Fellow

Mar 2020 – Jan 2021

- Supported domestic and international epidemiological research project analysis in R and SAS, including spatial modeling and mapping.
- Supported development of a Settlement Type and Road Connectivity (STARC) Mapping tool in QGIS/ArcGIS to estimate potential rabies burden and transmissibility in Southeast Asia to optimize canine vaccination campaigns.
- Analyzed National Rabies Surveillance System data and evaluated the historical rabies-free definition. Developed a prediction model to improve estimation of the probability of terrestrial rabies freedom and the number of reported county-level terrestrial rabies cases.
- Communicated research via publication and presentation during meetings with USDA and international health partners.

*Emergency Operations Center*

*Social and Behavioral Science Task Force*

Epidemiologist, ORISE Fellow

Jan – Mar 2020

- Completed a 60-day detail assignment to support the 2018 Ebola response in the Democratic Republic of Congo (DRC). Analyze Knowledge, Attitude, and Practice (KAP) survey data from the United Nations Children's Fund (UNICEF), as well as qualitative data from the International Federation of Red Cross and Red Crescent Societies (IFRC).

*National Center for Emerging and Zoonotic Infectious Diseases*

*Division of Foodborne, Waterborne, and Environmental Diseases*

*Waterborne Disease Prevention Branch*

Surveillance Epidemiologist, ORISE Fellow

Sep 2018 – Mar 2020

- Developed R and SAS code to analyze epidemiological data [e.g., case and outbreak data from the National Outbreak Reporting System (NORS) and the One Health Harmful Algal Bloom System (OHHABS) for surveillance reports, descriptive analyses, and responses to congressional and media inquiries; Cryptosporidiosis and Giardiasis Nationally Notifiable Disease Surveillance System (NNDSS) data for annual surveillance reports; weighted Porter Novelli HealthStyles Survey data in SAS to describe perceptions related to behaviors to reduce risk of diarrheal illness transmission in order to inform targeted health promotion strategies].
- Provided technical assistance to states and developed resources with state and federal partners to support state capacity building, surveillance, and national reporting [e.g., updated national Harmful Algal Bloom (HAB) event and HAB-associated human and animal case definitions, human and animal case Public Health Assessment tools, a toolkit for HAB-associated case and outbreak investigation and response, and a State HAB Program Capacity Tool].
- Supported funding activities [e.g., served as a Tier 1 technical reviewer for 2019 Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) grant applications, developed resources to manage Great Lakes Restoration Initiative (GLRI) ELC funding and track state ELC grant activities, supported submission of an OHHABS Office of Management and Budget (OMB) 3-year renewal request for data collection].
- Supported HAB social media and website content enhancements, OHHABS and NORS IT development projects in Jira Software via an Agile framework, a monthly HAB surveillance call with 20 state and federal partners, and development of OHHABS data request, closeout, and cleaning protocols.
- Assisted development and testing of a standardized questionnaire (EpiInfo) to collect data on exposure and risk factors during a shigellosis outbreak investigation.

- Developed report and presented recommendations for accessing and using U.S. Census data across branches, as a member of the DFWED Surveillance/Informatics Tactical Team.
- Created and organized a biweekly Lunch and Learn Series (e.g., epi-aids, risk communication, outbreak response, behavioral science, R packages, Lean Six Sigma).

## **Public Health - Seattle & King County, Tuberculosis Control Program**

Seattle, WA

Graduate Intern

Nov 2017 – Jun 2018

- Participated in weekly TB case review meetings, Directly Observed Therapy (DOT) activities, Class B TB evaluations, and outbreak investigations. Managed LTBI medical record dataset of 6 international community health clinics and presented at stakeholder meetings. Conducted a retrospective cohort study to track retention of patients with latent tuberculosis infection (LTBI) over time. Developed study design and R code to evaluate gaps in patient care, including identification of factors associated with dropout from the LTBI care continuum and evaluation of two interventions: T-Spot diagnostic test adoption and shift in prescription practices to Rifampin.

## **University of Washington**

Seattle, WA

*Department of Allergy & Infectious Diseases*

Graduate Intern

Oct 2016 – Mar 2017

- Assisted on HIV point-of-care testing research study, including: programming a REDCap survey to determine subjects' study eligibility and HIV prevention attitudes/knowledge, preparation of test kits for study visits, data entry of laboratory results, and quality control checks via Microsoft Access.

*Department of Environmental & Occupational Health Sciences*

Undergraduate Intern

Aug 2015 – Mar 2016

- Assisted the development and validation of a novel poliovirus environmental surveillance system, including: collection, filtration, and elution of secondary effluent samples from a wastewater treatment plant; training in laboratory methods/techniques for poliovirus spiking experiments; preparation of filtration kits for study participants; and training manual development.

*Department of Microbiology*

Undergraduate Intern

Sep 2013 – May 2014

- Assisted on SIV, influenza, MERS-CoV, and dengue research projects to study virus-host interactions and host innate immune response. Trained in laboratory methods and techniques, such as microarray hybridization, pulsed-field gel electrophoresis (PFGE), mass spectrometry, cell culture, and polymerase chain reaction (PCR) in a BSL-2 with BSL-3 practices laboratory. Trained in bioinformatics software (e.g., Ingenuity Pathway Analysis).

## **INSTRUCTIONAL EXPERIENCE**

### **Augusta University Medical College of Georgia**

Augusta, GA

Instructor

Mar 2025 – present

- Course Title: Summer Internship in Applied Molecular Epidemiology. Developing syllabus and course materials. Instructing undergraduate students in molecular epidemiology and bioinformatics methods.

### **University of Georgia Department of Epidemiology and Biostatistics**

Athens, GA

Teaching Assistant (TA)

Aug – Dec 2021

- Course Title EPID 7500: Introduction to Coding in R, Data Science, and Simulation for Public Health and the Life Sciences. Graded exams and projects and held weekly office hours for 11 graduate

students.

**University of Washington Department of Epidemiology**  
Teaching Assistant (TA)

Seattle, WA  
Mar – Jun 2017

- Course Title EPI 201: Outbreak Investigation and Response. Led weekly discussion section of 40 undergraduate students, graded homework and exams, created homework and exam questions, and held weekly office hours.

**Pacific Science Center Camps for Curious Minds**  
Teaching Assistant (TA)

Seattle, WA  
Jun – Aug 2016

- Provided instruction and leadership for interactive science classes for 20 4th-6th grade students.

## COMMITTEES

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**Diversify STEM Committee**

May 2025 – Present

**University of Georgia Center for the Ecology of Infectious Diseases**  
Advisory Committee, Graduate Student Representative

Nov 2024 – Present

**Pathogen Genomics Centers of Excellence**

Nov 2024 – Present

Response Base Working Group Subcommittee 6: Designing Unified Pathogen Genomic Analytics

## AWARDS

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2024 Graduate School Travel Grant

\$1,200

2023 Graduate School Travel Grant

\$1,000

2022 Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID) Scholarship

\$1,800

## SERVICE AND VOLUNTEERING EXPERIENCE

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**Atlanta Wild Animal Rescue Effort (AWARE) Wildlife Center**  
Rehabilitation Volunteer

Lithonia, GA  
Jul 2019 – Mar 2020

- Prepared animal diets, cleaned indoor and outdoor enclosures, handled wildlife, and shadowed animal care professionals during medical procedures and physical therapy exercises.

**Port Gamble S'Klallam Health Clinic**  
Graduate Student

Port Gamble, WA  
Jun – Sep 2017

- Organized and conducted a two-day vaccination clinic with the Port Gamble S'Klallam Tribe, in which 90 cats and dogs were inoculated against rabies. Managed vaccination record database; created a budget, advertisements, surveys, and informational pamphlets; solicited donations; secured supplies and equipment; and recruited veterinarian volunteers.

**Refugee Woman's Alliance (ReWA)**  
Program Assistant

Seattle, WA  
Oct 2015 – Mar 2016

- Provided homework help and tutoring to immigrant and refugee high school students.

**IES Health Studies**  
Study Abroad Student

South Africa  
Jun – Aug 2015

- Engaged in over 100 hours of volunteering in several local health facilities in South Africa, including interviewing patients on their medical history, stocking pharmaceuticals, and shadowing medical

professionals in the pharmacy, ICU, and operating rooms.

## Seattle World School

Classroom Aide

Seattle, WA

Apr – Jul 2014

- Provided classroom support for refugee and immigrant high school students in world history and physical sciences. Provided language support to Russian-speaking students.

## ACTIVITIES

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### Athens Science Observer

Author/Editor

Athens, GA

Aug 2020 – Present

### University of Washington Department of Epidemiology

Student Epidemic Action Leader (SEAL) Team

Seattle, WA

Jan – Dec 2017

- Trained in applied epidemiology (e.g., outbreak investigation and response, public health surveillance, survey design, risk communication) through coursework and field assignments. Developed a food safety training manual shared with partners statewide.

## PUBLICATIONS

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### Publications, Preprints, and Reports

1. **Veytsel, G.**, Sullivan A., Lariscy L., Lott M., Lipp E., Glenn T., Carmola L., Bahl J. (2025). Wastewater-based Surveillance Captures SARS-CoV-2 Early Detection, Cryptic Transmission, and Variant Dynamics. *PLOS Pathogens*, [Manuscript in clearance].
2. **Veytsel, G.**, Lyu L., Stott G., Carmola, L., Bahl J. (2025). Phylogenetic Insights into SARS-CoV-2 Introductions and Spread in Georgia. *PLOS Computational Biology*, [Manuscript in clearance].
3. **Veytsel, G.**, Desiato J., Chung H., Tan S., Risatti G., Helal Z., Jang S., Lee DH, Bahl J. (2025). Molecular Epidemiology, Evolution, and Transmission Dynamics of Raccoon Rabies Virus in Connecticut. *Virus Evolution*, veae114. <https://doi.org/10.1093/ve/veae114>
4. Lyu L., **Veytsel G.**, Stott G, Fox S., Dailey C., Damodaran L., Fujimoto K., Kuo J., Brown P., Sealy R., Brown A., Alabady M., & Bahl, J. (2024). Characterizing spatial epidemiology in a heterogeneous transmission landscape using the spatial transmission count statistic. *Nature Communications Medicine* 5, 165 (2025). <https://doi.org/10.1038/s43856-025-00888-6>
5. Lyu L., Gill M., Stott G., Dailey C., **Veytsel G.**, Alabady M., Fujimoto K., Penn R., Brown P., Sealy R., & Bahl J. (2024). Tracing SARS-CoV-2 Clusters Across Local Scales Using Genomic Data. *medRxiv*, 2024.09.18.24313896. <https://doi.org/10.1101/2024.09.18.24313896>
6. Fujimoto, K., Kuo, J., Stott, G., Lewis, R., Chan, H. K., Lyu, L., **Veytsel, G.**, Carr, M., Broussard, T., Short, K., Brown, P., Sealy, R., Brown, A., & Bahl, J. (2023). Beyond scale-free networks: Integrating multilayer social networks with molecular clusters in the local spread of COVID-19. *Scientific Reports*, 13(1), 21861. <https://doi.org/10.1038/s41598-023-49109-x>
7. Kunkel, A., **Veytsel, G.**, Bonaparte, S., Meek, H., Ma, X., Davis, A.J., Bonwitt, J., & Wallace, R.M. (2023). Defining County-Level Terrestrial Rabies Freedom Using the US National Rabies Surveillance System: Surveillance Data Analysis. *JMIR Public Health and Surveillance*, 9, e43061. <https://doi.org/10.2196/43061>
8. Stott G., Lyu L., **Veytsel G.**, Kuo J., Lewis R., Brown A., Fujimoto K., & Bahl J. (2022). Phylogeny and Metadata Network Database for Epidemiologic Surveillance. *bioRxiv*, 2022.04.19.488067. <https://doi.org/10.1101/2022.04.19.488067>
9. Roberts, V.A., Vigar M., Backer L., **Veytsel G.E.**, Hilborn E., Hamelin E.I., Vanden Esschert K.L.,

Lively J.Y., Cope J.R., Hlavsa M.C., & Yoder J.S. (2020). Surveillance for Harmful Algal Bloom Events and Associated Human and Animal Illnesses—One Health Harmful Algal Bloom System, United States, 2016–2018. *MMWR. Morbidity and Mortality Weekly Report*, 69. <https://doi.org/10.15585/mmwr.mm6950a2>

10. Gleason, M.E., Perez, A., **Veytsel, G.**, Collier, S.A., Marsh, Z.A., Hlavsa, M.C., Cope, J. R., Fullerton, K. E., & Benedict, K. (2019). Giardiasis summary report 2013: National Notifiable Diseases Surveillance System, United States. Retrieved May 13, 2024, from <https://stacks.cdc.gov/view/cdc/106917>
11. Gleason, M.E., Perez, A., Collier, S.A., **Veytsel, G.**, Marsh, Z. A., Benedict, K., Cope, J. R., Fullerton, K.E., & Hlavsa, M.C. (2019). Cryptosporidiosis summary report 2013: National Notifiable Diseases Surveillance System, United States. Retrieved May 13, 2024, from <https://stacks.cdc.gov/view/cdc/106986>

## Conference and Symposium Presentations

1. **Veytsel G.**, Lyu L., Stott G., & Bahl J. (2024, June 24-27). *SARS-CoV-2 Introductions and Spatial Diffusion in Georgia* [Poster Abstract]. 21st Ecology and Evolution of Infectious Diseases conference, Palo Alto, California, United States.
2. **Veytsel G.**, Desiato J., Chung H., Tan S., Risatti G., Helal Z., Jang S., Lee DH, Bahl J. (2023 July 29). *Molecular Epidemiology, Evolution, and Transmission Dynamics of Raccoon Rabies Virus (RRV) in the Northeastern U.S.* [Poster Abstract]. 71st Annual International Conference of the Wildlife Disease Association, Athens, Georgia, United States.
3. **Veytsel G.**, Lyu L., Stott G., & Bahl J. (2023, October 29-31). *Molecular epidemiology and transmission dynamics of the SARS-CoV-2 Delta wave, Georgia* [Poster Abstract]. 2023 MIDAS Network Annual Meeting, Atlanta, Georgia, United States.
4. **Veytsel G.**, Lyu L., Stott G., & Bahl J. (2022, August 15). *Evaluation of a Phylogenetic Cluster Identification Method for SARS-CoV-2* [Poster Abstract]. 2022 CEIRR Annual Network Meeting, Memphis, Tennessee, United States.
5. Lariscy L., Lott M., **Veytsel G.**, Foley A., Melendez Declet C., and Lipp E (2022, March 23). *Wastewater Surveillance for detection of SARS-CoV-2 variant of concern B.1.1.529 (Omicron BA.1) in Athens-Clarke County* [Poster Abstract]. 2022 Environmental Health Science Student Research Symposium, Athens, Georgia, United States.
6. Bonaparte S., Moodie J., Undurraga E., Ross Y., **Veytsel G.**, and Wallace R (2020, October 28-30). *Popping the rabies bubble: examination of economic, environmental, political, social, and health indicators' associations with the global canine rabies burden and projecting 2030 trends in disease burden* [Poster Abstract]. International Conference on Rabies in the Americas (RITA) 2020, Pereira, Colombia.
7. Kiryutina, T., Tigel G., Turner R., Edwards J., Hammond J., Venable C., Woods S., Reddy V., Rivers T., Negley J., Anderson M., Wagner J., Tobin-D'Angelo M., Bahl J., Salvador L., **Veytsel G.**, Connelly M., Franko E., Parott T., Balakrishnan N. (2023, March 1-15). *Genomic Diversity of New Delhi Metallo-beta-lactamase (NDM)-Producing Carbapenem-Resistant Enterobacterales in Georgia* [Poster Abstract]. 2023 American Public Health Association (APHL) Infectious Disease (ID) Lab Con, Atlanta, Georgia, United States.
8. Roberts V., **Veytsel G.**, Vigar M., and Yoder J. (2019, June 3). *Harmful Algal Blooms and Public Health Surveillance: The One Health Harmful Algal Bloom System (OHHABS)* [Poster Abstract]. 2020 National Recreational Water Quality Workshop, Chicago, Illinois, United States.
9. **Veytsel G.**, Collier S., Hlavsa M., et al. (2019, June 2-6). *Waterborne Disease Outbreaks in Great Lakes States, 1971-2017* [Poster Abstract]. 2019 CSTE Annual Conference, Raleigh, North Carolina,

United States.

10. **Veytsel G.**, Dundas N., and Lindquist B. (2018, April). *Rabies Vaccination Clinic, Port Gamble S'Klallam Tribe* [Poster Abstract], Graduate Student Symposium, Seattle, Washington, United States.
11. **Veytsel G.** & Huang M. (2017, June 1). *Examining Risk Factors of Re-Hospitalizations for Adverse Outcomes Following Conservative Management of Postpartum Hemorrhage* [Poster Abstract]. Graduate Symposium, Seattle, Washington, United States.

## Acknowledgements

1. Yahyaoui Azami H., Perea C., Stuber T., Bouslikhane M., Berrada J., Aboukhassib H., Allepuz Palau A.O., Reis A.C., Cunha M.V., Thacker T.C., Robbe-Austerman S., Salvador L.C.M., & Quinn F. (2024). Phylogenetic analysis of *Mycobacterium bovis* Reveals Evidence Of Animal And Zoonotic Tuberculosis Transmission Between Morocco And European Countries. *bioRxiv*, 2024.02.09.579592. <https://doi.org/10.1101/2024.02.09.579592>
2. Gharpure, R., Friedman, C. R., Fialkowski, V., Collins, J. P., Stryko, J., Marsh, Z. A., Chen, J. C., Meservey, E. H., Adediran, A. A., Schroeder, M. N., Wadhwa, A., Fullerton, K. E., & Francois Watkins, L. (2022). Azithromycin and Ciprofloxacin Treatment Outcomes During an Outbreak of Multidrug-Resistant *Shigella sonnei* Infections in a Retirement Community—Vermont, 2018. *Clinical Infectious Diseases*, 74(3), 455–460. <https://doi.org/10.1093/cid/ciab450>
3. Stekler, J. D., Violette, L. R., Clark, H. A., McDougal, S. J., Niemann, L. A., Katz, D. A., Chavez, P. R., Wesolowski, L. G., Ethridge, S. F., McMahan, V. M., Cornelius-Hudson, A., & Delaney, K. P. (2020). Prospective Evaluation of HIV Testing Technologies in a Clinical Setting: Protocol for Project DETECT. *JMIR Research Protocols*, 9(1), e16332. <https://doi.org/10.2196/16332>
4. Chavez, P. R., Bradley, H. M., Wesolowski, L. G., Violette, L. R., Katz, D. A., Niemann, L. A., McMahan, V. M., McDougal, S., Cornelius-Hudson, A. M., Ethridge, S. F., Stekler, J. D., & Delaney, K. P. (2020). Performance evaluation of four point-of-care HIV tests using unprocessed specimens. *Journal of Clinical Virology*, 124, 104282. <https://doi.org/10.1016/j.jcv.2020.104282>
5. Stryko, J., Fialkowski, V., Marsh, Z., Wadhwa, A., Collins, J., Gharpure, R., Kelso, P., Friedman, C. R., & Fullerton, K. E. (2019). Notes from the Field: Outbreak of Multidrug-Resistant *Shigella sonnei* Infections in a Retirement Community—Vermont, October–November 2018. *MMWR. Morbidity and Mortality Weekly Report*, 68(17), 405–406. <https://doi.org/10.15585/mmwr.mm6817a5>

## SKILLS

- Proficiency in scripting and programming languages: R (advanced), SAS (intermediate), STATA (beginner), Java (beginner), L<sup>A</sup>T<sub>E</sub>X(beginner), bash shell (intermediate)
- Proficiency in data visualization, using R (advanced)
- Proficiency in Bayesian and Maximum Likelihood phylogenetic methods (advanced)
- Proficiency in bioinformatics software, pipelines, and workflows, such as MAFFT, BEAST, TreeTime, IQ-Tree, TempEst, and NextStrain (advanced)
- Experience in spatial analysis software, such as QGIS, ArcGIS, Tableau, and Google Earth Engine (intermediate)
- Experience in project management in GitHub and Jira (intermediate)
- Survey development and analysis, using REDCap and EpiInfo (intermediate)
- General laboratory methods and techniques (beginner)
- Database management for surveillance systems (intermediate)
- Languages: Russian (native speaker) and Spanish (beginner)