

Meet the Fellow

Keri Smith

Host Lab: Georgia Public Health Laboratory

Degree: Masters

Graduated: May 2024

School: Georgetown University



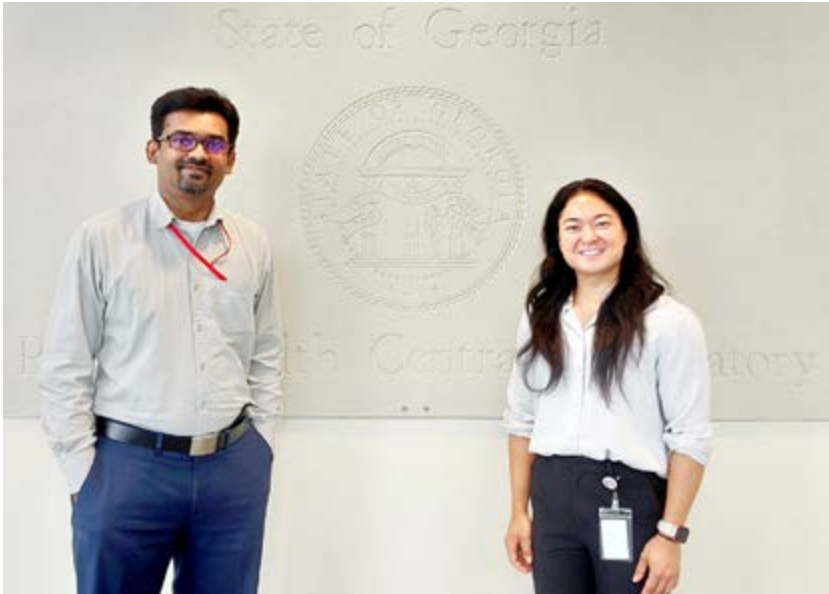
As a first-year APHL Bioinformatics Fellow at the Georgia Public Health Laboratory (GPHL), I'm thrilled to be working under the mentorship of Dr. Arunachalam (Arun) Ramaiah, the Bioinformatics & Georgia Pathogen Genomics Center of Excellence (GA-PGCOE) Director.



Dr. Ramaiah

My fellowship journey began after completing my Master of Science in Systems Medicine at Georgetown University. I discovered the APHL fellowship program while exploring ways to transition into a bioinformatics career. Despite my initial uncertainty about entering public health without prior experience, the transition has

been remarkably smooth. Dr. Ramaiah's consistent mentorship and support have been invaluable, guiding me through the fellowship and helping shape my long-term career aspirations. Dr. Ramaiah has 15 years of experience working at academic and local, state and federal public health organizations during his career, both in the United States and abroad. His extensive experience addresses bioinformatics issues involved with an exceptional range of viral, bacterial, immune, human and disease vectors. He and the laboratory team continue to contribute significantly to improving our responses to infectious diseases and serve as an exemplar of dedication and expertise in public health.



Mentor Dr. Arunachalam (Arun) Ramaiah and fellow, Keri Smith.

My project at GPHL focuses on developing a whole-genome sequencing (WGS) assay and bioinformatics pipeline for real-time genomic surveillance of human Respiratory Syncytial Virus-A/B (RSV-A/B) genotypes. This work involves extensive literature review, evaluation of bioinformatic workflows, and active participation in various trainings by Dr. Ramaiah's and Dr. Nandhu Balakrishnan's teams. A short-read tiled-amplicon sequencing method is in development

for state-wide RSV surveillance at GPHL. Two sets of primers are synthesized including a known one from Minnesota Public Health Laboratory and one designed using bioinformatic tools. While I am making significant progress on developing a WGS assay for RSV-A/B, I compared and optimized two bioinformatic pipelines using public SRA datasets across different high-performance computing (HPC) and Amazon Web Services (AWS) environments.

This opportunity has already exceeded my expectations. In just a few months, I have attended the 2024 APHL Annual Conference in Milwaukee and the Georgia Pathogen Genomics Centers of Excellence (GA-PGCOE) 2nd Annual Meeting in Atlanta, where I engaged with public health professionals and academic partners to explore public health science and basic research in molecular epidemiology, antimicrobial resistance,

wastewater surveillance, and bioinformatics applications in public health. Regular meetings on bioinformatics and genomic epidemiology and comprehensive training in Nextstrain, Nextclade, Nextflow, high performance computing (HPC) clusters, containerization, and programming languages have significantly

enhanced my skills in bioinformatics and genomic surveillance.

This experience has reinforced my commitment to advancing bioinformatics in public health. I'm eager to continue growing in this field and contribute to building the necessary infrastructure to support bioinformatics teams in public health laboratories. The APHL Fellowship has been providing an excellent foundation for my career, and I'm excited about the potential to make a lasting impact in public health through bioinformatics.