

# Metagenomic Next-generation Sequencing

## The Human Advantage

Advancing the diagnosis of complex, infectious disease with molecular genetics

#### **About Advanta Genetics**







Advanta Genetics is an independent clinical laboratory founded in 2012. Grown from a small, one room laboratory with one machine, to a **26,000 sq. ft. advanced molecular genetics laboratory**, running thousands of patient samples per day.

Advanta Genetics is a high-complexity CLIA reference laboratory accredited by the College of American Pathologists, comprised of professional research scientists and clinical experts in **pharmacology, biochemistry, toxicology, microbiology, cytogenetics, and molecular genetics**.

Our grouping of research scientists and clinical experts allows Advanta Genetics to advance evidence-based methodologies for testing infectious disease. And make available cost-effective models of molecular diagnostic testing for clinical utility in complex medical cases like , *pyelonephritis, sepsis, respiratory, and joint fluid infections*.



#### **Leadership Team**



**Rob Carpenter, MBA, Ph.D.** *Chief Executive Officer* 



Mary Long, Ph.D., NRCC Laboratory Director



Rahul Sharma, Ph.D., HCLD (ABB) Chief Innovation Officer

The Human Advantage



**Damien Narcisse, Ph.D.** *Chief Certifying Scientist* 



**Brian Robbins, Ph.D.** *Chief Scientific Officer* 



Sadia Almas, MSc, Ph.D. Director of Microbiology



Dave Silberman, PhD Chief Development Officer



Mary Beth Minyard, MSCLS, M(ASCP) Technical Director



Jody K. Takemoto, Ph.D., M.Ed. Chief Pharmacy Officer



## Advancing Diagnosis of Complex Infectious Disease with mNGS







### **Advancing Diagnostic Capabilities of the Clinical Laboratory**



The paradigm of infectious disease diagnosis and treatment *is shifting*.

Although microbiology cultures remain a standard of care and polymerase chain reaction (PCR) testing has been emphasized by the COVID-19 pandemic, these methodologies remain limited in diagnostic utility, **especially in complicated infections disease cases**.

**Metagenomic next-generation sequencing** (mNGS) has shown great promise for filling this diagnostic gap. However, mNGS has predominantly been used for research and epidemiological surveillance because cost models preclude its progression into the independent clinical laboratory.





### **Advancing Diagnostic Capabilities of the Clinical Laboratory**



**Advanta Genetics is advancing scientific methodologies** to improve nucleic acid extraction techniques and make available innovative and reliable alternatives for pathogen identification with mNGS. Thus, reducing cost barriers and improving the diagnostic scope of infections disease for the clinical laboratory.

The benefit of this technology is precise **cost-effective diagnostics for complex infectious diseases** not readily available outside research facilities—an efficient precision metagenomics approach that identifies causative agent(s); improving medical decision making and treatment specificity, reducing hospital admissions and stay, costs per case, and likely saving lives.





#### **Current Research & Development**



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2022 American Association of Bioanalysts and CRB Symposium in Austin, TX

Advanta Genetics was selected to present their work at the **2022 American Association of Bioanalysts**.

The presenting team of scientists showcased the application of qPCR-based SARS-CoV-2 variant detection to complement Next Generation Sequencing. This work was also published in the July issues of the journal *Global Health, Epidemiology and Genomics* 



Advanta scientists were selected to present their work on "Plasma Drug Testing for D&L Isomers of Amphetamine and Methamphetamine" at the **International Symposium on Technical Innovations in Laboratory Hematology** September in Bologna, Italy.



Advanta scientists were selected to present their work on "Deciphering the Microbiology of Respiratory Infection Using Precision Metagenomics Analysis" at the **2022** Association for Molecular Pathology (AMP) Annual Meeting & Expo in Phoenix, Arizona in November. Their work will also be published in the November 2022 issue of *The Journal of Molecular Diagnostics*.





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