PHRONETIK

DRIVING SCIENTIFIC DISCOVERY

Phronetik is a Service-Disabled Veteran-Owned (SDVOSB), woman-owned, and minority-owned biotechnology company headquartered in North Texas, with an office in Bethesda, MD. We advance precision medicine and scientific research by leveraging genetics, next-generation sequencing (NGS), bioinformatics, artificial intelligence (AI), and data science.

Phronetik is a rapidly-growing leader advancing scientific knowledge by leveraging biotechnology, bioinformatics, research support and data science to improve diagnosis, treatment, and monitoring, and impact clinical and translational research with actionable insights.

- Whole Genome Sequencing
- Genomic Mapping
- Study Design Consultation
- Data Mining
- Statistical Design
- Healthcare Consumer Engagement
- Genetic Testing
- Healthcare Data Integration
- Regulatory Support
- Machine Learning
- Artificial Intelligence
- Data Normalization
- Medical Research and Education
- Genetic Counseling
- NASA Patents MSC-24811-1 and MSC-24813-1

Disabled Veteran Owned Small Business · SDVOSB · Service · CVE

UNITED STATES ARMY · DISABLED VETERAN

WOMEN OWNED®

TechTitans
The Technology Association for North Texas

NASA TECHNOLOGY TRANSFER PROGRAM

We deliver high-quality sample processing, extraction, data analysis and interpretation quickly and securely in order to drive scientific discovery and help guide every-day medical decisions throughout a patient's life.

The name Phronetik is an amalgamation of two Greek words: phronesis (wisdom) and kinetic (to move). Put simply, in our quest to leverage technology innovation to improve clinical research and healthcare, we move [forward] with wisdom.

WHAT WE DO

RESEARCH. ANALYZE. TRANSFORM.

RESEARCH CAPABILITIES

Biomedical Research: Genomic testing, sequencing services, biomedical informatics, DNA microarray, quality control, gene expression, sample prep/QC, library preparation, RNA sequencing, bioinformatics analysis, comparative genomics analysis, disease genetics, GO and KEGG annotation and enrichment analysis

Mathematics / Computer Science: Mathematical modeling, machine learning, simulation, and analysis

Health Disparities: Minority health, clinical trial diversity, HIV/AIDS, substance abuse, obesity, aging population

Translational Science: Pre-clinical and clinical research, data collection, clinical trial support, public health informatics

Mental Health: Genetics, neuroinformatics, brain and behavioral research support

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Advancing Clinical and Translational Research

Genomic Testing and Research Support

We offer testing to help identify changes in chromosomes, genes or proteins to help rule out a genetic condition or help determine a person's chance of developing or passing on a genetic disorder. We are partnered with CAP/CLIA certified genomics labs for OMICS data generation to further precision medicine studies and advance scientific research.

Sequencing and Bioinformatics

Using state-of-the-art technology, our bioinformaticians and scientists offer high quality next-generation sequencing services with fast turn around times for clinical and research clients. Statistical principles are applied in support of medical research. We mine databases and optimize the design, analysis, and interpretation of results to properly evaluate the research hypothesis.

Research and Data Science Support

We assist with PI oversight, protocol development, laboratory services, and program development and management. Focusing on diversity and equity in clinical research, we bring innovative tools and methods based on the latest technologies to further clinical and translational research. Phronetik facilitates the development of novel, investigator-led treatment strategies for life science and healthcare organizations that seek to leverage technology and data science in support of clinical care and scientific research.

GENOMIC TESTING

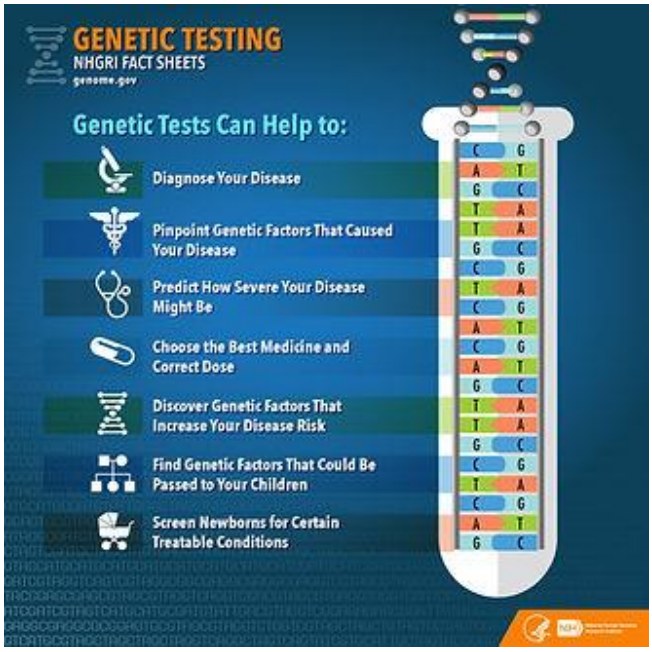
Laboratory data generated from genomic, pharmacogenomic, transcriptomic, proteomic and other OMIC data is necessary to understanding health and disease.

Genetic testing is a type of medical test that identifies changes in chromosomes, genes, or proteins. The results of a genetic test can confirm or rule out a suspected genetic condition or help determine a person's chance of developing or passing on a genetic disorder. More than 2,000 genetic tests are currently in use, and more are being developed. Phronetik is partnered with several CAP/CLIA certified genomic laboratories for laboratory data generation.

Diagnostic Testing is used to precisely identify the disease that is making a person ill. The results of a diagnostic test may help determine how to treat or manage health.

Predictive and Pre-Symptomatic Genetic Tests are used to find gene changes that increase a person's likelihood of developing diseases. The results of these tests provide information about risk of developing a specific disease. Such information may be useful in decisions about lifestyle and healthcare.

Carrier Testing is used to find people who "carry" a change in a gene that is linked to disease. Carriers may show no signs of the disease; however, they have the ability to pass on the gene change to their children, who may develop the disease or become carriers themselves. Some diseases require a gene change to be inherited from both parents for the disease to occur. This type of testing usually is offered to people who have a family history of a specific inherited disease or who belong to certain ethnic groups that have a higher risk of specific inherited diseases.



Pharmacogenomic Testing gives information about how certain medicines are processed by an individual's body. This type of testing can help a healthcare provider choose the medicines that work best with individual genetic makeup.

Research Genetic Testing is used to learn more about the contributions of genes to health and to disease. Sometimes the results may not be directly helpful to participants, but they may benefit others by helping researchers expand their understanding of the human body, health, and disease.

SEQUENCING SERVICES

Phronetik provides Next-Generation Sequencing (NGS) services for genetic testing, analysis, and research support. We take structured and unstructured data, clean it, standardize it, integrate it, then analyze it. Data is the foundation of what we do, allowing us to deepen insight into health and disease. Our bioinformaticians and scientists offer expertise in:

DNA-Sequencing Analysis

Whole-genome, whole-exome and targeted sequencing allows mapping and studying genetic variants or mutations. Our genome variation analysis identifies SNPs, indels, gene copy numbers, and genomic rearrangements from the various types of DNA-sequencing and microarray data. Our bioinformatics analysis of variants and mutations coupled with phenotypic data enables the discovery of novel associations.

RNA-Sequencing Analysis

Using microarray analysis, our staff provides bioinformatics analysis of RNA-sequencing to allow pinpointing molecular mechanisms between genotype and phenotype. We also provide transcriptomics, or analysis of gene expression on both single genes and pathways, as well as transcriptome assembly and transcriptome annotation.

Epigenomics

Epigenetics is the study of dynamic change in gene expression that do not affect the underlying DNA (change in phenotype, not genotype). Using a variety of microarray analyzing techniques, we offer:

- DNA methylation (MeDIP-seq, BiS-seq)
- Chromatin state (ChIP-seq)
- DNA binding (ChIP-seq)

Our bioinformatics analysis of the various epigenomic NGS data associates the identified genomic sites to phenotypic attributes. These sites can be annotated with public domain database information to help in interpreting biological meaning.

Biomarker Detection

Biomarkers can help detect the early presence of disease and help determine a patient's response to treatment. Our team can aid in identifying particular data points, genetic or other types, and statistically compare samples of interest with a control group. We can use genomic, transcriptomic and epigenomic data with metadata to find a biomarker or a combination of biomarkers that can be used to classify future samples into relevant categories, such as patients likely responding to a treatment versus non-responders.

RESEARCH, GENETIC COUNSELING, & DATA SCIENCE SERVICES

Phronetik's Research & Data Science Services provide consultation regarding regulatory requirements, study design, and preclinical development. We support development activities by providing the infrastructure, expertise and resources necessary to develop and ensure the safety and effectiveness of new or existing medical treatment, understand and engage patients, and grow medical knowledge. Throughout our process is a targeted focus on innovative and practical approaches to increase diverse and inclusive representation in clinical research.

Translational Research

Phronetik's translational research methodology is 'bench-to-beside' and 'bedside-to-community'. This involves moving knowledge and discovery from basic science to practical application in both clinical and community settings. We do this with laser-like focus on diversity, equity, and inclusion in clinical trials and supporting data fairness as we identify new opportunities and approaches to health problems.

We offer the following research and data science support:

- Research Design
- Protocol Development
- Laboratory Support
- Bioinformatics, Biostatistics, and Epidemiology Services
- Study Start-Up, Recruitment, and Execution
- Digital Clinical Trial Support
- Compliance and Regulatory Support
- Community Based Research
- Precision Medicine Tools and Techniques
- Emergent Technology Support

Genetic Counseling

Using family history and genetic testing, Phronetik's genetic counseling service helps patients understand and address how a genetic condition affects an individual and their family. Our genetic counselors and other health professionals offer counseling after testing to help patients understand their test results and treatment options, adapt to the medical, emotional, and familial impact of genetic contributions to disease, and refer to other healthcare providers and support groups.

DR. TANIA M. MARTIN-MERCADO

Dr. Tania founded Phronetik, a biotechnology company focused on government contracting and public sector clientele. While there, she designed a cloud-based artificial intelligence platform for point-of-care diagnostics, combing “omics” data and EHR data. She also leads the strategy, governance and execution of all life science contract and grant awards.

Dr. Tania is also the Founder and Chief Technology Officer at a digital health company focused on chronic disease management at home. Here she invented a patent-pending medical device kit for chronic disease management, which won an Innovation Award at International CES in 2015 and recognition in Tech Republic’s 2016 Issue, Google Startup Grind, and several publications.

Dr. Tania is a 20-year veteran of the U.S. Army and Army Reserves, ending her military career as Chief Warrant Officer 2 in the area of cyber information systems

Currently, Dr. Tania’s research investigates precision medicine and machine learning for early detection of PTSD, lupus, and subsequent treatment. She has published numerous papers on her research, including:

- **An Investigation of the Role of Precision Medicine in the Treatment of Systemic Lupus Erythematosus**
- **How Implicit Bias Affects AI in Healthcare**
- **How to address inequity in healthcare AI? Hire a diverse data team**
- **Curing Disease in Utero**
- **Unmasking Genetics to Improve Health**