Maryland Genomics

We offer high-throughput, cost-effective sequencing and analysis services from within the University of Maryland Institute for Genome Sciences. As pioneers in the field, our senior scientists apply their extensive experience in genomic technology and bioinformatics to advance your research.

Our services combine expertise and technology in several focus areas:

High-throughput sequencing

We provide high-quality, cost-effective sequencing using a diverse array of platforms. We cultivate long-standing relationships with technology providers to gain early access to new platforms and maintain our position at the forefront of sequencing technology. Our extensive experience allows us to provide high-quality data in a nimble and responsive environment.

Microbiome Services

We provide high-throughput analysis of microbiome samples. Our custom microbiome services include DNA & RNA extraction, amplicon library preparation, quantitative PCR, sequencing on both Illumina and PacBio platforms, and custom informatics pipelines for microbiome profiling and taxonomic assignment. We process human, animal, and environmental samples from all over the world.

Informatics

Our staff of engineers, systems administrators, and analysts work together to conduct bioinformatics research and provide analysis services. We engage in collaborations to develop novel, customized analysis methods. Our team has broad expertise in sequence analysis applied to data from all types of organisms.

To enable our bioinformatics work, we have a state-of-the-art computational infrastructure that supports our sequencing, data processing, data storage, and analysis services. This infrastructure includes a >3000-core high-performance, high-memory computational grid, an internal 40-gigabit network, database servers, and a hierarchical storage management system with a capacity of more than 6 petabytes of data.

Training

We offer five training workshops each year on high-throughput sequence data analysis at our campus in Baltimore, MD. Our workshops provide significant hands-on activities to give attendees analysis experience to apply to their own research.

Sequencing Services:

- DNA/RNA Extraction
- Library Preparation
- Genomes/Metagenomes
- Exomes and Custom Capture
- Transcriptomes
- Epigenomes
- Microbiome Amplicons (16S, 18S, ITS, etc.)
- Single Cell Sequencing
- Custom Amplicons
- Digital Molecular Profiling
- Customized Applications

Analysis & Computational Services:

- Assembly & Annotation
- Comparative Genomics
- Variant Analysis
- Transcriptome Analysis
- Epigenome Analysis
- Microbiome Profiling
- Pathway & Network Analysis
- Microarray Analysis
- Cloud Based Pipelines
- Customized Analysis

Training Workshops:

- Introduction to Omics & Bioinformatics
- Introduction to Python & Databases for Bioinformatics
- Introduction to R for Bioinformatics
- Metagenome Analysis
- Transcriptome Analysis

Why Maryland Genomics?

High-throughput sequencing technologies and applications now permeate both basic and clinical research. Personalized medicine is being driven by genomic data. However, transforming sequence data into knowledge is the primary challenge facing researchers today. We take pride in the quality of our work. Although many centers offer sequencing and routine analysis services, few offer the depth of experience and quality of analysis that our team provides. Let us help you take your research to the next level.

Who can work with Maryland Genomics?

Everyone! We strive to bring the increasing power and decreasing cost of sequencing and analysis to a continually expanding research community. We provide services to a wide range of researchers – from basic scientists to clinicians to computer scientists. Prior experience with high-throughput sequencing or sequence data is not required.

What can I expect?

We work with researchers from both the public and private sector, and our projects span the globe. No matter your experience or expertise, we can guide you through every phase of the process. Each project begins with a complimentary consultation with our scientists and project managers. We use this consultation to learn more about your project goals, and to advise you on project design, platform selection, cost, and timelines. From there, we conduct regular project status and update meetings to ensure the project completes on time and on budget.

Is my project too small? Too large?

No! We routinely work with projects that range from a single sample to multi-year projects with thousands of samples. On average, we have more than 30 active ongoing projects and process more than 50,000 samples per year.

Platforms:

- PacBio Sequel II System
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- PacBio RS II
- Illumina NovaSeq 6000
- Illumina HiSeq 4000 & HiSeq 2500
- Illumina MiSeq
- 10x Genomics Chromium
- NanoString nCounter
- Oxford Nanopore MinION

Ready to start your project?

Email us at IGS-Services@som.umaryland.edu

MarylandGenomics.com

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SCHOOL OF MEDICINE
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