**OHSU Research Cores and Shared Resources**

**Gene Profiling**

A unit of the Integrated Genomics Laboratory

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The OHSU Gene Profiling Shared Resource provides services and equipment for RNA expression profiling and DNA variation analysis. Technologies available through the core include microarray platforms, high throughput qPCR, and next generation DNA sequencing. Equipment and expertise are also available for high-throughput sample processing, RNA and DNA isolation, and RNA/DNA quality and size assessment.

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**Introduction**

The OHSU Gene Profiling Shared Resource (GPSR), formerly the Gene Microarray Shared Resource, functions as a full-service core facility serving research scientists and clinicians with RNA profiling and DNA variation analysis services. Technologies include two microarray platforms (Affymetrix and Illumina), a high-throughput qPCR system, and a short read DNA sequencing instrument (Ion Torrent PGM) for amplicon and small genome sequencing. Staff is highly experienced with RNA and DNA isolation and RNA/DNA quality assessment for genomic analysis and molecular profiling. The core has been in operation since 2001 and has processed thousands of samples, including many challenging samples, such as FFPE specimens, sorted cells, small samples, and whole blood. GPSR staff is available for assisting with experimental design and analysis of core-generated data.

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**Services**

1. **Expression Profiling**: mRNA and microRNA expression profiling on microarrays and qPCR panels (including options for alternative transcript/exon analysis)
2. **DNA Variation Analysis**: Whole genome and targeted SNP genotyping and copy number analysis with microarrays, PCR assays, and Ion PGM sequencing
3. **RNA/DNA Isolation**: Support available for RNA and DNA isolation using QIAGEN spin-column kits, including PAXGene Blood RNA kits
4. **RNA/DNA Assessment**: Quantification and size or quality assessment of RNA and DNA samples
5. **Instrument use**: The QuantStudio and QiaCube robots are available for use by trained clients
6. **Consulting**: Basic microarray data analysis support and training in use of analysis software

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**Equipment and Software**

- Affymetrix GeneChip system with 4 Fluidics Stations for array hybridization, processing and scanning
- Illumina BeadArray system for array hybridization, processing and scanning
- Life Technologies QuantStudio qPCR system
- Ion Torrent PGM Sequencer
- NanoDrop 1000 and 8000 spectrophotometers
- Molecular Devices M2 spec/fluorimeter
- Agilent 2100 Bioanalyzer
- Caliper LabChip GX system
- QiaCube Sample Prep Robots (2)
- Eppendork epMotion 5075 Liquid Handling Robot
- Suite of custom and commercial software for data QA/QC
- GenoLogics Laboratory Information Management System
- Shared licenses for GeneSifter and Partek Genomics Suite data analysis software

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**Getting Started**

To apply for services from the core lab, download a project application form at www.ohsu.edu/gpsr.

For pre-project consultation, grant development assistance, letters of support, and sample preparation recommendations, and for access to QuantStudio qPCR system, please contact: Dr. Chris Harrington.

For data and software access, data and software tutorials, and general information please contact: Dr. Amiee Potter, Bioinformatics and User Support.