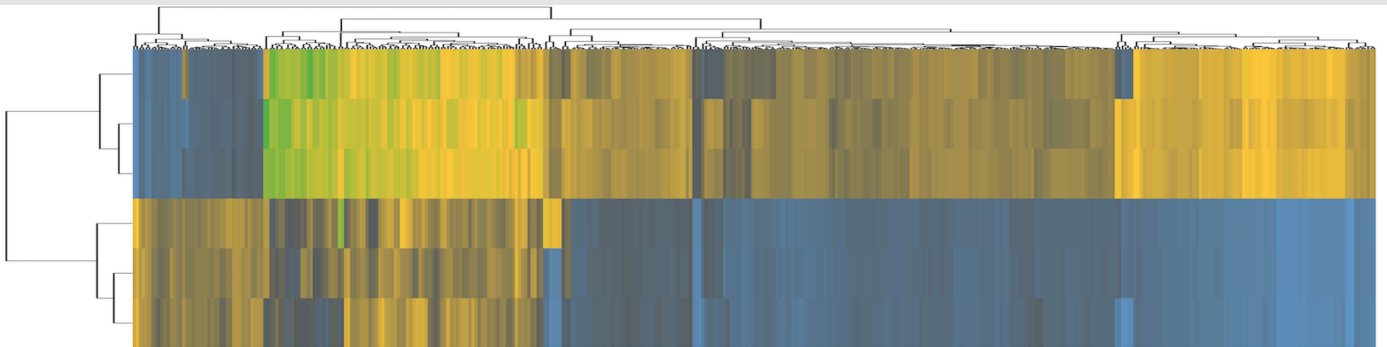




INTEGRATED GENOMICS LABORATORY

Winter 2019 : Integrated Genomics Laboratory Newsletter



Gene Profiling Shared Resource
Massively Parallel Sequencing Shared Resource
DNA Services Core



Included topics -

- **Holiday hours**
- **Staff transitions**
- **New equipment**
 - NovaSeq 6000
 - Orbitor RS2 Microplate Mover
 - 4200 TapeStation System
- **DNA Services Core**
- **Gene Profiling Shared Resource**
- **Massively Parallel Sequencing Shared Resource**
- **Seminar**
 - February 5th, 2020: *Conquering difficult samples to enable successful analysis*
- **Share ideas for new services and technologies**
- **Shared resource acknowledgement**

Holiday Hours

The Integrated Genomics Laboratory will be open on a regular schedule through Monday, December 23rd, closed starting the afternoon of December 24th through December 26th, and on reduced staffing from December 27th until January 2nd. If you wish to drop off or pick up samples between December 27th and January 2nd, please contact the core ahead of time to make sure someone is available to work with you.

Staff Transitions

- Dr. Britt Daughtry is the new laboratory manager for the GPSR. Please [contact her](#) about submitting new service requests and with questions about service details.

- Esmeralda Chacon is a new undergraduate student worker with the GPSR, majoring in Biology at Portland State University.
- Trevor McFarland left the Integrated Genomics Laboratory as of October 1st, 2019. He will continue to advance scientific research at OHSU in Dr. Julie Saugstad's laboratory in the Department of Anesthesiology and Preoperative Medicine.

New Equipment

- [NovaSeq 6000](#) (Illumina)
 - The NovaSeq 6000 will replace the current HiSeq 2500 as our primary instrument for high throughput sequencing.
 - The NovaSeq 6000 system will provide users with the throughput, speed, and flexibility to complete projects faster and more economically.
- [Orbitor™ RS2 Microplate Mover](#) (ThermoFisher) for the QuantStudio™ System
 - Located in the IGL as of January 2020, the Orbitor, an automation robot designed for use with the QuantStudio PCR system, enables automated plate loading. The new Orbitor automation robot allows multiple plates to be set up for sequential PCR runs without manual intervention.
- [4200 TapeStation System](#) (Agilent)
 - The 4200 TapeStation will support a full range of sizing applications for DNA and RNA.

DNA Services Core

Core provides support for cell line authentication, custom oligosynthesis, and DNA normalization and plating.

- Information on DNA normalization and plating is available at the [DNA Services core webpage](#).
- Service includes sample dilution and standardization for

downstream assays and shipment to external laboratories.

Gene Profiling Shared Resource

Core provides support for RNA and DNA quality assessment and isolation, expression and DNA variation arrays (including methylation arrays), and real-time PCR applications.

Recent News: We are continuing to develop high throughput streamlined services for DNA and RNA isolation for both basic and clinical research studies. We can help isolate up to thousands of samples, including blood, plasma, saliva, and more.

For further information or experiment planning using the new Orbitor RS2 Microplate Mover, please contact [Chris Harrington](#).

Massively Parallel Sequencing Shared Resource

The MPSSR is excited to announce the acquisition of an Illumina NovaSeq 6000 DNA sequencer. Funding for this instrument came from generous awards from the M.J. Murdock Charitable Trust and the OHSU Research Office. The NovaSeq is designed for high throughput sequencing at a much lower cost than is possible on the HiSeq 2500 currently in use. It uses two color chemistry and high speed optics to permit faster runs. The NovaSeq can also generate 250 cycle reads using the new SP flow cell for a total of 500 bases per template on a paired end run. New pricing structures will be in place across the entire MPSSR service menu when the NovaSeq goes online. Installation is currently scheduled for the week of December 9th with training to follow.

Our HiSeq 2500 will remain in service for the near future, permitting users to stay with the four color chemistry for ongoing projects. Our NextSeq 500 will also still be in use.

Our single cell library preparation services have expanded from 3' RNA-seq with CITE-seq to include 5' RNA-seq with CITE-seq and V(D)J analysis for both T and B cells. We are also able to prepare hashtag libraries (sample multiplexing in a single library) from the BioLegend TotalSeq line of products, but with the understanding that hashtag libraries are not supported by 10x Genomics. For all single-cell libraries on the Chromium system, we run an alignment against a reference genome to generate QC metrics.

Seminar - February 5th, 2020

The IGL is hosting a technology-focused seminar with Qiagen, including presentations on increasing FFPE yields, preanalytical solutions for molecular workflows, working with difficult samples, and circulating cell-free nucleic acid purification from plasma.

- Title: *Conquering difficult samples to enable successful analysis*
- February 5th, 2020 in Mackenzie Hall 1162
- Additional details will be posted on the Gene Profiling Shared Resource website soon

Share ideas for new services and technologies

We welcome input on new technologies or core services for RNA and DNA processing and analysis that OHSU researchers would like to see offered through the IGL cores. Please contact [Chris](#) and [Bob](#) with your suggestions.

Shared resource acknowledgement

Please remember to **acknowledge use of the GPSR, MPSSR, and DNA Services Core** in talks, posters, and publications which include data generated in the core lab. The use of data generated in an OHSU core facility in a grant application, progress report or publication contains the implicit understanding that the PI or authors will acknowledge the use

of the OHSU core facility.

Suggested acknowledgement text -

MPSSR -

Short read sequencing assays were performed by the OHSU Massively Parallel Sequencing Shared Resource.

GPSR -

(Insert appropriate service or platform) were performed in the OHSU Gene Profiling Shared Resource.

Services/Platforms: *Microarray or qPCR assays, DNA or RNA isolation services, DNA or RNA quality assessments*

DNA Services Core -

STR profiling for human cell line authentication was performed in the OHSU DNA Services Core; this work utilized a 3730xl DNA Analyzer purchased with funding from NIH SIG grant S10 OD010609

Knight Cancer Institute members -

Please add the following to any IGL Shared Resource acknowledgment:
This core is supported by the OHSU Knight Cancer Institute NCI Cancer Center Support Grant P30CA069533.

Learn more about the Integrated Genomics Laboratory cores

- [Gene Profiling Shared Resource](#)
- [Massively Parallel Sequencing Shared Resource](#)
- [DNA Services Core](#)

To request core services and initiate new projects, please log into the

For more information on Integrated Genomics Laboratory cores, please contact [Chris Harrington](#) and [Bob Searles](#).

University Shared Resources

OHSU's cores are your campus technology partners dedicated to the success of your project. For optimal results, take advantage of the state-of-the-art scientific resources within the OHSU community.

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