***Genomics and Cell Characterization Core Facility (GC3F)***: This facility supports scientific research at the UO by making a broad array of high-end, specialized instrumentation accessible to UO researchers for genomic and flow cytometry applications, as well as offering in-house sequencing sample prep services, for both internal and external users.

The facility provides next generation Illumina-based high throughput DNA sequencing and associated bioinformatics; robotics for high throughput manipulation of DNA samples; microarray-based genotyping; microarray printing; Pacific Biosciences (pacbio) sequencing; Sanger DNA sequencing; sample prep services; quantification instruments; liquid handling instruments; microscopy & imagine analysis; fragment analysis, and; a flow cytometer and a high-speed fluorescence activated cell sorter.

GC3F includes *The Imaging Facility*, which supports scientific researchers with high resolution, state-of-the-art microscopy technologies for imaging. In addition to equipment, they provide trained operators and expert bioinformatics staff for experimental design, implementation, and interpretation. The director is a PhD-level research associate and the full-time research staff consists of three masters-level scientists running machines and working on collaborations with labs.

Services and equipment include:

* Next-generation DNA sequencing services using Illumina NovaSeq 6000, NextSeq 2000, and MiSeq sequencers.
* Third-generation long read DNA [sequencing](https://gc3f.uoregon.edu/pacbio-sequencing-2) using PacBio Revio as well as Oxford Nanopore Promethion and MinIon sequencers.
* Single-cell library prep on 10X Chromium and BIO-RAD ddSEQ
* [Advanced Light Microscopy](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations) with multiple scanning and spinning-disk confocal, super-resolution (SIM), and light-sheet microscopes.
* [Flow Cytometry](https://gc3f.uoregon.edu/flow-cytometry) with a Sony SH-800 cell sorter
* High throughput automated liquid handling with LabCyte Echo, Hamilton Vantage, and Eppendorf robots.
* Mass Spectrometry with a Bruker Microflex Smart LS MALDI
* DNA/RNA fragment analysis, qPCR, NanoDrop spectrophotometry, Qubit quantification.

The facility offers training and support for the following equipment:

* [Leica SPE Laser Scanning Confocal and Widefield](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#leicaspe)
* [Cytiva DeltaVision Ultra - Widefield with Deconvolution](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#deltavisionultra)
* [Zeiss LSM 880 with Elyra Structured Illumination and Airy Scanning](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#zeiss880)
* [Nikon CSU-W1 SoRa Spinning Disk](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#nikonsora)
* [Amersham Typhoon scanner](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#amersham)
* [Zeiss LSM 710 with Elyra Structured Illumination and Airy Scanning (Knight Campus)](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#lsm710)
* [Cherry Temp System](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#cherrytemp)
* [Tokai Hit Environmental Chamber](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#yokaihit)
* [Analysis Workstations](https://gc3f.uoregon.edu/microscopy-image-analysis-workstations#workstations)