Located on the 3rd floor in the Morrill Science Center, the Genomics Resource Laboratory (GRL) provides services and advanced instrumentation support for nucleic acid (DNA and RNA) analysis.

The GRL provides a suite of services to address your high-throughput next-generation sequencing (NGS), including solutions for sample processing such as nucleic-acid isolation, nucleic-acid quantitative and qualitative analysis, NGS library preparation, quantitative-PCR analysis, etc.

GRL provides sample processing and library preparation such as whole genome sequencing, shotgun metagenomics, metatranscriptomics, targeted amplicon sequencing, RNA-Seq, Single Cell Genomics, etc., to address genomics research projects.

The facility accepts samples and will perform requested analysis. We offer training to users to conduct experimentation for use on a fee for service basis to both internal and external researchers, academic or industry based. Following an initial consultation, covering experimental parameters training and access is arranged through the director.

ACCESS
To request access, training, or additional information please contact Ravi Ranjan at ranjan@umass.edu.

Our rates are competitive and tiered based on needs and usage. Visit our website at umass.edu/ials/genomics for current listing.

TRAINING
Training for new users consists of:
- lab safety training as mandated by UMass EH&S,
- operation of the instrument and associated software,
- use of data analysis software.

Once the training is complete, researchers may schedule their experiments through the director of the GRL (Ravi Ranjan) or online through CORUM at corum.umass.edu.

To request access, training, or additional information please contact Ravi Ranjan at ranjan@umass.edu.

Our rates are competitive and tiered based on needs and usage. Visit our website at umass.edu/ials/genomics for current listing.

Research and Innovation to Translate Basic Science into Product Candidates

PARTNER WITH US!

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(413) 577-4501

umass.edu/ials/genomics
**CAPABILITIES**

**Next-Generation Sequencing (NGS)**

- Library preparation for NGS Projects
  1. RNA-Seq (polyA mRNA, rRNA depletion)
  2. Whole genome and metagenome
  3. Metatranscriptomics
  4. Targeted 16S/18S rRNA amplicon
  5. Small RNA and ChiP-Seq
  6. Custom library preparation
- DNA and RNA isolation from different sample types
- Single Cell Genomics Projects
- DNA and RNA quality assessments
- Limited data analysis
- Offer instrumentation training, project consultation, technical assistance, and documentation for grants application/manuscripts.

**BluePippin, DNA Size selection system**

**CFX96 Touch Real-Time PCR Detection System**

**Single Cell Genomics: 10x Genomics Chromium Controller**

**Bioruptor Pico Sonicator System**

**Agilent 2100 Bioanalyzer**

**Nexcelom Cellometer K2 Cell Counter**

- Cellometer K2 can use Acridine Orange and Propidium iodide to highlight nucleated cells and provide viability
- AO is permeable to live and dead cells
- AO binds to DNA and fluoresces green
- PI can only enter dead cells
- Binds to DNA of the dead cells
- Absorbs the green fluorescence of AO
- Produces bright orange / red color
- No signal is generated from non-nucleated cells and debris

A significant portion of core equipment has been purchased through MUSC grant funding support.