**Georgia Genomics and Bioinformatics Core Lab**

**Facilities, Equipment, and Other Resources**

The GGBC encompasses 2189 ft2 of lab space in UGA’s Riverbend North Research Building. This space includes one pre-PCR lab and a large post-PCR lab. The GGBC has four office spaces: Technical staff large shared-space office, business team office suite, bioinformatics team office and Director’s office. GGBC instruments include: three Illumina MiSeq, one Illumina NextSeq 500, one Illumina NextSeq 2000, one PacBio Sequel II, multiple Oxford Nanopore MinIon MK1C, one Roche Lightcycler (96 and 384-well capable), two epMotion liquid handling system, four Applied Biosystems 9700 thermocyclers (3 dual 96-well, and 2 dual 384-well), one Covaris E220 Evolution, two Qubit4, one Bio-Tek Synergy LX fluorometric plate reader, one SageELF for DNA fractionation, one 10X Genomics Chromium, one Invitrogen Countess 3 Automated cell counter, one Bio-Rad QX200 automated digital droplet PCR system, one Agilent Fragment Analyzer, one Agilent BioAnalyzer, one Invitrogen EVOS M7000 imaging system, one Epredia NX70 Cryostat & Automatic Microtome, one Formulatrix Mantis Liquid Handler V3.3 and many supporting instruments.

The non-PCR labs have standard and multichannel pipettors, microcentrifuges, refrigerators, -20°C freezers, and ultra-cold freezers, 4 refrigerated microtiter plate centrifuges, incubators, electronic balances and a pH meter, many 96-well thermal cyclers for NGS library preparation, the chemicals and supplies needed for DNA extraction, making DNA libraries, and setting up PCR reactions. The post-PCR labs have a nanodrop spectrophotometer, fume hoods, ultra-cold freezers, various incubators and shakers, electronic balances, pH meters, standard and multichannel pipettors, various centrifuges for tubes and 96-well plates, and the chemicals and supplies needed for DNA sequencing, and fragment size determination.

The GGBC team consists of three teams: the management, sequencing, and bioinformatics teams. The Management team consists of an operation manager (PhD), one budget analyst, and one administrative assistant. The sequencing team consists of three Genomic Specialists (BS and MPH), and one Genomic Professional (BS). The GGBC continuously hosts at least three undergraduate interns helping the sequencing team and offers at least two research assistantships (RA) per year to graduate students. The bioinformatics team consists of one lead bioinformatician (PhD) and one bioinformatics specialist (PhD student).

The GGBC has access to the Georgia Advanced Computing Resource Center's (GACRC) equipment located in UGA's Boyd Data Center. The GACRC has a fulltime staff of Systems Administrators and Scientific Computing Consultants, specializing in Linux/UNIX system administration, storage administration, and scientific computing consultation. One Linux cluster is available with a total core count of approximately 16,000 compute-cores. In addition to conventional compute nodes, the cluster has several large memory and GPU specific nodes. High-performance storage for the Linux clusters is provided for users' home directories and temporary scratch space. Slower storage resources are available for long-term project needs. The home directories, as well as the long-term project storage are backed-up to separate storage devices. The computational and storage resources are available free of charge to UGA researchers and students. A Faculty Buy-In program is also in place which provides prioritized access to the GACRC-administered computational resources. The GACRC manages over 600 software packages, utilities, compilers and libraries. Of these, over 450 are bioinformatics related.