**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 small pre-PCR labs and a large post-PCR lab. The post-PCR lab is divided by a wall into a non-PCR portion where cloning and similar operations occur, and the post-PCR portion where the thermal cyclers and most major sequencing and genotyping instruments are located. The GGBC has four office spaces: Technical staff large shared-space office, business staff office suite, bioinformatics team office and Director’s office. GGBC instruments include: Two Illumina MiSeq, Two Illumina NextSeq 500, One PacBio Sequel II, multiple Oxford Nanopore MinIon, one Applied Biosystem 3730xl capillary DNA sequences, one Roche Lightcycler (96 and 384-well capable), two epMotion pipetting systems, one Illumina BeadXpress for high-throughput SNP genotyping, one Applied Biosystems OpenArray for low-throughput SNP detection, two Hydra 96-well robotic micro-dispensers, five Applied Biosystems 9700 thermocyclers (3 dual 96-well, and 2 dual 384-well), one Shimatzu MultiNA, one Covaris E220 Evolution, two Qubit4, one HydroShear, one Bio-Tek Synergy LXFA fluorometric plate reads, one Blue Pippin for DNA size selection, one SageELF for DNA fractionation, one 10X Genomics Chromium, One Agilent Fragment Analyzer, One Agilent Bio-Analyzer, and many supporting instruments.

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

The GGBC team consists of three teams: The management, sequencing, and bioinformatics teams. The Management team consists of an operation manger (PhD), one budget analyst and one administration assistant. The sequencing team consists of one lab manager II (MS), and four lab managers I (BS). The bioinformatics team consists of one lead bioinformatician (PhD) and two bioinformatic specialists (PhD students). The GGBC continuously hosts at least three interns helping the sequencing team.

The GGBC has access to The Georgia Advanced Computing Resource Center's (GACRC) equipment is located in UGA's Boyd Data Center (BDC). 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