

**KSU Integrated Genomics Facility, IGF:**

<http://www.ksre.ksu.edu/iGenomics/>

The IGF is about 2000 ft<sup>2</sup> facility located in the Department of Plant Pathology (KSU), Throckmorton Plant Sciences Center. The IGF is equipped with the next-generation sequencing platform **GS FLX** (Roche) capable of generating up to 500 Mb of sequence data per one 10-hour run with the average sequence reads ranging from 300 – 500 bp. **GS FLX Titanium Data Computing Cluster** is used for processing of GS FLX runs and generating base calls. Processing of data from one sequencing run requires about 8 hours. In addition, the IGF is equipped with **1) NanoDrop Spectrophotometer** for measuring of sample concentration of nucleic acids, proteins and culture cells in small volumes (1-2 ul); **2) the Agilent 2100 Bioanalyzer** combining a miniature of gel electrophoresis and scanning spectrophotometry to allow analysis of quality of RNA, DNA and protein samples using very small amounts of material; **3) Qiagen TissueLyser II** for preparing samples for emulsion PCR; **4) Fluorometer** for accurate measuring DNA and RNA concentration; **5) photodocumentation system Molecular Imager Gel Doc XR** (Bio-Rad); **6) SpeedVac** for concentrating aqueous solution. **7) Affymetrix GeneChip System: GeneChip Hybridization Oven 640; GeneChip Fluidics Station 450; GeneChip Scanner 3000-7G.** Affymetrix GeneChip Microarray technology allows the analysis of expression profiles of thousands of genes in a single experiment. We provide complete services for Affymetrix GeneChip processing including first and second strand cDNA synthesis and purification, cRNA synthesis/labeling and purification, GeneChip hybridization, washing, staining, scanning, raw data generation, and data analysis. **8) An Axon GenePix 4000B scanner** - scans one or two-color microarray slides; two units of **Tecan HS400 Hybridization Station** with medium or large size of hybridization chambers, respectively, and few manual hybridization chambers - for processing of Agilent and Combimatrix microarray chips. **9) Hydroshearing Device (GeneMachines)** for highly controlled fragmentation of genomic DNA and preparation of shotgun or paired end libraries for sequencing. **10) Two ABI9700 GeneAmp PCR machines** with 96-well plate heads; **11) Beckman Z2 Coulter Counter** provides an accurate cell / bead count, measuring average cell / bead size, accurate and precise population size distribution data, and high throughput; **12) iCycler iQ Real-Time PCR system (BioRad)** that allows to monitor the polymerase chain reaction in the real time (96- plex) and can accommodate up to four different fluorophores.

Other equipment includes autoclaves, horizontal gel units, power supplies, -80C freezer, -20C freezers, refrigerators, two MJ Research PCR machines, a TECHNE PCR machine, microcentrifuges, incubators, vacuum pump, drying oven, VirSonic 50 sonicator, nebulization station, sterile laminar flow-hoods for working with bacterial cultures, microwave oven, mini plate spinner, Barnstead's AquaWave ultrasonic cleaner, UV Stratalinker 1800 (Stratagene), Labquake Rotisserie shakers, walk-in cold room, sets of manual multi- and single-channel pipettes (RAININ), and standard magnetic stirrers, balances, vortexes, shakers, water baths, quick spin minifuges, dry bath incubators, heating plates, orbital shakers.