The BioSpecimen Processing Facility (BSP) is a University-wide core laboratory facility, that assists medical and public health researchers pursuing investigations ranging in scale from small clinical studies to large-scale projects. It is centrally located on the Epidemiology floor in room 3213 of the School of Public Health’s new Michael Hooker Research Center, located at the corner of Manning Dr and Pittsboro Rd. There are 1,070 square feet of laboratory space geared for high-throughput processing of human biospecimens. All operations are managed by a Manual of Operation and QA/QC policy documents.

The BSP’s current DNA production is more than 45,000 biospecimens per year. The facility has a freezer capacity to temporarily store over 350,000 -80oC samples and over 50,000 samples at 4°C for immediate use. DNA samples are standardly quantified in multi-spectral optical density spectrophotometers (Nanodrop and Spectra-Max Plus). The BSP facility is equipped with a high throughput DNA extraction robot (Gentra’s Autopure LS), which can isolate DNA from large volume samples. This enables the BSP to process over 90 large volume samples each day. The BSP also has a Multiprobe II (Perkin Elmer) which is typically used for aliquoting, normalization, creating 96 well plates, and automated small volume protocols. The freezer and refrigeration system are fully monitored with a 24/7 alarm system and have back-up generator power that is tested weekly. Additionally, all movement to and from and within the freezer system is tracked by the BSP LIMS. The BSP LIMS utilizes a state-of-the-art Oracle based specimen tracking system designed specifically to meet the immediate, inventory-style tracking needs of multiple health research projects. The user interface is implemented as a Java thick-client. The thick-client tracks creation, storage, movement, and discarding of containers (vials and plates) and the specifics of container contents (material type, volume, concentration, technician comments, etc.). It is maintained by the School of Public Health with security and daily backup.

The major objectives of the BSP are two-fold. The first is to provide laboratory support for individual investigator initiated large-scale clinical research as well as epidemiologic studies designed to help unravel the underlying relationships between genetics, the environment, behavior, and disease. The second is to maintain and manage a biospecimen (and data) repository as a shared resource for clinical and epidemiology research. The UNC BSP Facility is a centralized, quality controlled and quality assured facility for the processing of human biospecimens. In addition to laboratory services, the facility provides a scientific resource for investigators seeking advice on study design including specimen collection and storage methods, human subject issues, and the use of gene, SNP and haplotype databases. The BSP has received IRB approval for its own uses and maintains a HIPPA secure facility at all times. The BioSpecimen Processing Facility has experience isolating high molecular weight genomic DNA that can be reliably PCR amplified and genotyped. DNA is purified from a variety of study collected starting specimens other than blood, such as buccal swabs/rinses (Scope or saline) and Oragene saliva. DNA is isolated by a salt precipitation method using Gentra’s Puregene chemistries. The BSP’s current DNA production is more than 45,000 biospecimens per year. The BSP LIMS utilizes a state-of-the-art Oracle based specimen tracking system designed specifically to meet the immediate, inventory-style tracking needs of multiple health research projects.

*Updated: 10/9/16*