



COSET Statement of Capabilities

Texas Southern University's (TSU) core research and development capabilities of the College of Science, Engineering and Technology (COSET) are listed below:

- **Airway Science and Technology** – Use of data analytics techniques (Big data) to optimize airport throughput.
- **Biology** - Principal Investigators (PI's) are active in pure and applied research, problem-solving, and product development in cell signal, microbiology, microbial growth under reduced gravity.
- **Chemistry** - Environmental Chemistry and Toxicology Laboratory and its biosensorbiomarker core facility identify the signaling molecules responsible for the bacterial communication.
- **Computer Science** - Wireless sensor network laboratory, Dedicated short range communications, Connected vehicle technology, Energy transmission via short range communications, Mobile application development, Advanced Networking protocols research, Large-scale data analysis of socio-economic systems ("Big Data").
- **Engineering** - Virtual and remotely accessible laboratory, Control Systems laboratory, Materials Testing laboratory.
- **Physics - High Performance Computing Center (HPCC)** has two Linux clusters Ares and Hades. The full parallel cluster has a total of 800 virtual cores and a total memory of 768 Gigabytes, with a theoretical peak speed of 5.0 Teraflops.
- **Mathematics** - Research and development areas: applied mathematics, bioinformatics differential and difference equations, discrete dynamical systems, graph theory, information theory, probability and statistics.
- **Environmental and Interdisciplinary Sciences** - Geographic Information Systems (GIS) laboratory: Major analytical instruments in these laboratory include high-volume sizefractionated PM samplers, soil core pipe samplers, inductively coupled plasma-mass spectrometer (ICP-MS).
- **Transportation Studies** - Portable Emission Monitoring System (PEMS) laboratory, and Mini-TranStar laboratory (freeway traffic video monitoring), Connected vehicle technology, Dedicated short range communications.
- **Industrial Technology** –Process design for utilization of additive manufacturing (3D Printing) technology to create complex structures.

Federal Contract Administrative Contact:

Dr. Antoinette Roberson, Director; Texas Southern University; Office of Career Services; robersonan@tsu.edu; 713-313-7141

3100 Cleburne Ave, Houston, Texas 77004