

**SHAW**  
UNIVERSITY  
—1865—

# White House Initiative on HBCUs

## *Capability Statement*



## Shaw University's Capability Statement

**Mission Statement** - Shaw University exists to advance knowledge, facilitate student learning and achievement, to enhance the spiritual and ethical values of its students, and to transform a diverse community of learners into future global leaders.

**University Corporate Structure** - Shaw University's governing board is the Board of Trustees which possesses fundamental legal authority over the university.

**DUNS No-** 075584102  
**NACIS ID-**611310  
**Federal EIN No-**56-0530235

**Cage Code-**OPA10  
**SIC-**8221

### Certifications, Registrations and Accreditations

- Shaw University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award the associate, bachelor's, and master's degrees.
- The Shaw University Divinity School is accredited by The Association of Theological Schools in the United States and Canada.
- The Athletic Training program is nationally accredited by the Commission on Accreditation of Athletic Training Education (CAATE).
- The Kinesiotherapy Degree program is nationally accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).
- The Social Work program is accredited by the Council on Social Work Education (CSWE).
- The Teacher Education program is accredited by the National Council for Accreditation of Teacher Education (NCATE), and is approved by the North Carolina Department of Public Instruction (NCDPI).

**Overview** – Shaw University is continuing to focus on its strategic priority to build institutional capacity to support research. The University has four (4) state of the art laboratory facilities capable of performing a variety of techniques and has recruited research/teaching faculty with expertise in a number of areas ranging from molecular genetics to optical scanning microscopy.

**Geographic location and Unique Facilities** - Shaw University is located in the heart of Downtown Raleigh, North Carolina. Its location is an asset, as the area is recognized as one of the world's centers for technology and innovation. The University has eight satellite campuses throughout the state located in Ahoskie, Rocky Mount, Greenville, Fayetteville, Raleigh, Durham, Fayetteville, and Wilmington.

### Research Capabilities

- **Physics:** The focus for this research is to understand contacts between highly oriented polymer conductors. A scheme to deposit these layers with nanoscale resolution while forcing a desired orientation has been developed and will be characterized and used to study these contacts as a function of relative molecular orientation in the two materials. Historically, electronic device development has occurred using processes that separately include molecular deposition, orientation, and characterization.
- **Computer Science/Robotics:** A series of noise level meters have been developed. The latest iteration employs a sound pressure meter calibrated to +/- 1.5 decibel accuracy. The meter is connected to a Raspberry Pi and is able to collect real-time data about noise levels. The system

is able to upload the data to a cloud-based database and generate real-time data about noise levels. There are many other sensor applications under development.

- **Biomedical Research:** Diabetes and Cancer Research, nuclear receptor signaling in Type 2 diabetes, cell cycle regulation during DNA replication in lung cancer, androgen receptor regulation in hormone resistant prostate cancer, virulence resistance and Chemotaxis in microbes.
- **Behavioral Ecology:** Radio tracking of large vertebrates has been a standard method in behavioral science and ecology for decades. More recently, technological advances have produced transmitters small enough to be attached to insects. One such application is a novel system for tracking bee activity and temperature simultaneously by attaching a monitoring device to the outside entrance of a hive.

## Facilities

- **Biotechnology Laboratory:** Cellular/biological imaging & analysis, Thermal Cycle PCR, agarose and acrylamide gel electrophoresis.
- **Computer Science Robotics Laboratory:** Multiple robots, a 3-D Printer, Raspberry Pi(s), Arduinos, various sensors, and the tools needed to construct basic electronics.
- **Molecular Cellular Biology Laboratory (RIMI):** Real Time and Thermal Cycle PCR, Pathogen detection, gene expression, flow Cytometry, quantitative gene expression.
- **Nano-Microscopy Laboratory:** a microscopy laboratory that is under development. It is currently stocked with an Atomic Force Microscope which includes a closed liquid cell for scans in liquid and IR laser (830 nm) for measurements in liquid and air, SPM Workstation and analysis software, a Scanning Near-field Optical Microscope with resolution < 90nm, Confocal coupling for 400-700nm with FC single-mode fiber connector, coupling optics and beam splitter cube, controller and computer, an ellipsometry apparatus and controller electronics.
- **Microscopy Laboratory:** Fluorescence Microscopy

Shaw University houses state of the art laboratory facilities capable of performing a variety of techniques including:	Shaw University research faculty has specialized expertise in the following areas of study:
<ul style="list-style-type: none"> <li>• Flow Cytometry</li> <li>• Fluorescent Microscopy</li> <li>• Quantitative PCR</li> <li>• Optical Scanning Microscopy</li> <li>• Sensor Technology</li> <li>• Robotics</li> <li>• 3 D printing</li> <li>• Induction of Virulent Gene Expression in Salmonella</li> <li>• Cybersecurity</li> </ul>	<ul style="list-style-type: none"> <li>• Nuclear Receptor cell signaling</li> <li>• Drug discovery and characterization</li> <li>• Functional Genomic Analysis of Origin Licensing and Cell Cycle Regulation</li> <li>• Chemotaxis regulation in E.Coli</li> <li>• Behavioral Ecology: Predator/Prey Relationships</li> <li>• Hormone Resistance Prostate Cancer</li> <li>• Oriented Molecular Nano-structures and Devices for Electronics &amp; Photonics</li> </ul>

**Past Performance** - Shaw University has received the Research Infrastructure in Minority Institutions (RIMI) grant award from the National Center on Minority Health and Health Disparities (NCMHD). The main purpose for the grant was to strengthen the research infrastructure at Shaw University. Additionally, a National Science Foundation Targeted Infusion Program grant was used to develop a bio-based technology capability. The National Institutes on Minority Health and Health Disparities project, Knowledge, Attitudes and Practices of Jamaican Men, focused on men forty years and older diagnosed with prostate cancer and on building the Institute for Health, Social and Community Research.

**POC-Contact Information-** Dr. Paulette Dillard, Vice President for Academic Affairs, 118 East South Street, Raleigh, NC 27601 Telephone: (919) 546-2595 Email: pdillard@shawu.edu