**2018 NISBRE Workshop Information**

**Name, title, institution, and email address of each facilitator**

Sherry Miller, Ph.D.

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Teresa Shippy, Ph.D.

Bioinformatics Specialist

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**Session theme or topic:** Application of bioinformatics tools in molecular biology today

**Session format (lecture, facilitated discussion, panel discussion, Q&A):** facilitated discussion

**Session title:** Bioinformatics: Big Data, Big Opportunities

**Provide 3 anticipated participant learning outcomes:**

**1.** Develop an appreciation for how Next Generation Sequencing technologies and improved bioinformatics tools are influencing molecular biology and clinical research in the 21st century

**2.** Develop an understanding of bioinformatics applications in the medical field

**3.** Develop an awareness of job opportunities available to students if they develop bioinformatics skills

**Intended audience (INBRE, COBRE, CTR, students, faculty, PI’s):**

Students participating in INBRE, COBRE or CTR research

**Abstract (200 Words):**

Bioinformatics is a rapidly growing field that involves manipulating and analyzing large, complex scientific datasets. Recent advances in technology, in particular next generation-sequencing (NGS), have allowed scientists to generate huge amounts of data very quickly. Analysis of these large datasets requires special tools and techniques that draw from a variety of disciplines, including biology, computer science, statistics, mathematics, and engineering. Since many scientists have not been adequately trained in these methods, individuals with proficiency in bioinformatics are in high demand in today’s job market. In this workshop we will aim to 1) introduce students to the NGS technologies that have changed the landscape of molecular biology research, 2) discuss the impact these technologies have had, and will continue to have, in both the research and clinical settings, and 3) guide students through the steps they can take to improve their bioinformatics skills and marketability in this genomic era.

**Additional Materials, Web Information or Additional Information:**