

# PAGE MORTON HUNTER DISTINGUISHED SEMINAR SERIES



## Engineering Novel Solutions for Prolapse Repairs Using a Bottom-Up Approach

Pelvic organ prolapse (prolapse) significantly impacts the quality-of-life of millions of women globally. Surgical repairs of prolapse often involve the use of synthetic mesh. Though successful, mesh usage has been hampered by unacceptably high complication rates, leaving surgeons and their patients with limited options. Research suggests that the etiology of mesh complications is likely multifactorial. Understanding the mechanisms of mesh complications is critical to developing novel solutions for prolapse repair and to improving patient outcomes. This talk will highlight the interdisciplinary approach (computational modeling, mechanical testing, and animal models) that we use to define the problems associated with current polypropylene meshes used in urogynecologic surgeries and to elucidate mechanisms of mesh complications. Secondly, I will demonstrate how we are using our improved understanding of mechanisms of mesh complications to develop a novel device for prolapse repair. Ultimately, it is our goal that this research will lead to a product(s) and/or treatment(s) and clinical recommendations that will be to the benefit of the millions of women impacted with pelvic organ prolapse world-wide.

## Katrina Knight, Ph.D.



*Assistant Professor  
Department of Bioengineering  
University of Pittsburgh*

Dr. Katrina Knight is an Assistant Professor and BIRCWH Scholar at the University of Pittsburgh (Pitt). Dr. Knight completed her BS in Biochemistry at Claflin University, a Historically Black College and University, and received her PhD in Bioengineering from Pitt. She completed a postdoctoral fellowship in Urogynecology at Magee-Womens Research Institute (Pittsburgh, PA). Dr. Knight has extensive training in mechanical testing of soft tissues and synthetic materials, computational modeling, and device design and evaluation. Dr. Knight was also rigorously trained in the biological aspects of assessing the host response to devices and in animal research/surgery. Ultimately, Dr. Knight's research aims to improve the lives of women with pelvic floor disorders through the development of novel and innovative treatments while concomitantly increasing the number of minorities pursuing an education and/or career in STEM+ (science, technology, engineering, mathematics, and medicine).

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*Location:*

111 Rhodes Annex, Clemson University



*Department of*  
**BIOENGINEERING**  
*Clemson® University*