

## **Taking the (female pelvic) Floor to Talk about Continuum Mechanics**

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### **Abstract**

Pelvic floor disorders such as urinary incontinence, fecal incontinence, and pelvic organ prolapse represent a major public health concern in the United States affecting one third of adult women. These disorders are determined by structural and mechanical alterations of the pelvic organs, their supporting muscles and connective tissues that occur mainly during pregnancy, vaginal delivery, and aging. In this talk, I will present the experimental and theoretical research that is currently being conducted in my lab to characterize the biaxial nonlinear viscoelastic properties of the utero-sacral ligaments and cardinal ligaments, two major ligaments supporting the uterus/cervix/vagina complex. Our findings can potentially transform current surgical reconstruction methods and post-operative rehabilitation protocols for pelvic floor disorders.

### **Bio**

Raffaella De Vita is an associate professor in the Department of Biomedical Engineering and Mechanics at Virginia Tech. She received her laurea in mathematics from Seconda Università degli Studi di Napoli, Italy, in 2000 and her M.S. and Ph.D. from University of Pittsburgh in 2003 and 2005, respectively. She is the recipient of the American Society of Biomechanics President's Award, NSF CAREER award, and 2012 PECASE award. Her research focuses on determining the relationship between the mechanical behavior and complex structure of biological systems, using approaches that combine physically sound theoretical models with novel experimental methods.