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**Marc D Ryser\***, ryser@math.duke.edu, and **Patti E Gravitt**. *Sexual Behavior, HPV Exposure and Cancer Incidence: Connecting the Dots*. Preliminary report.

The U.S. has experienced an increase in the incidence of human papillomavirus (HPV)-related cancers that are not screen detectable, e.g., cervical adenocarcinoma, oropharyngeal and anal cancers. An association between population-level changes in sexual behavior and cancer burden has been hypothesized, yet there is no direct evidence for HPV exposure as the mediator. In this talk we seek to bridge this gap by combining mechanistic mathematical models with population-level data on sexual behaviors and HPV serology from the National Health and Nutrition Examination Survey (NHANES). (Received September 14, 2016)