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“The Impact of Population and Tumor Heterogeneity in Cancer Genome Science”

Thursday, November 21, 2019

Noon—1:00 pm

Doll & Hill Room

Taylor Avenue Building

Precision Medicine as defined by the National Institutes of Health “is an emerging approach for disease treatment and prevention that takes into account individual variability in genes, environment, and lifestyle for each person.” One area of health care where Precision Medicine is gaining steam is in the area of oncology. The ability to rapidly sequence the tumor and germline DNA and RNA of an individual using Next Generation Sequencing technologies and bioinformatics holds the eventual promise of revolutionizing our ability to match targeted therapies to tumors harboring biologically associated genetic biomarkers.

Although many groups are implementing these approaches in treatment selection for cancer patients, aspects related to both population and tumor heterogeneity remain confounders and limit the most optimized and appropriate approach. This is particularly important as many tumor types disproportionately affect individuals from underrepresented populations. We are investigating aspects of population heterogeneity and cancer genomics from the standpoint of determining if specific somatic alterations are enriched in underrepresented populations, which might in part explain differences in incidence and outcomes in these groups. Furthermore, we are also uncovering aspects of tumor heterogeneity that can affect treatment selection and response to specific targeted therapies. Optimizing Precision Medicine through improving our understanding and controlling of population and tumor heterogeneity will allow for more specific and sensitive testing in hopes of applying the most appropriate clinical management for all patients.

Please feel free to bring your lunch to this brown bag presentation.

Co-sponsored by the Institute for Public Health, the Department of Obstetrics and Gynecology, the Department of Medicine, and the Department of Anesthesiology

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