

*GHUCCTS invites you to our KL2 symposium:*

# Clinical Proteomics for Diagnostics and Precision Medicine: Tumor Heterogeneity and Treatment Response

Georgetown University Medical Center  
Warwick Evans Conference Room, Building D  
4000 Reservoir Rd, NW, Washington DC 20007

November 20, 2019  
9 AM - 12:30 PM



## ABSTRACT

While DNA is the information archive, the proteins do the work of the cell and constitute most of the cellular machinery. Functionally, nearly all of the FDA-approved drugs work by modulating protein expression and/or protein activity/location. Moreover, many of the biomarkers that are measured in the clinic for routine disease detection to more esoteric testing are proteins. This backdrop provides context to the exploding field of proteomics in the post-genome era; however, proteomics is constrained by technological and biochemical limitations: lack of a PCR-equivalent technology to amplify low-abundance proteins and relative analytical insensitivity of mass spectrometry, lability of proteins in vivo, and massive dynamic range and complexity of the human proteome. To help deliver on the promise of clinical proteomics, new technologies have been developed that can amplify low-abundance proteins for discovery and point-of-care testing. Likewise, new types of protein arrays for precision medicine-based applications have been developed. Case studies of these technologies, as applied to the bedside, will be presented for colon cancer to emphasize the clinical impact that could be achieved as well as highlight the global potential for incorporation into the early detection and precision medicine workflow.

## KL2 SCHOLAR



Dr. Chukwuemeka Ihemelandu is an Associate Professor of surgical oncology in the Department of Surgery at Georgetown University Medical Center and a 2018 GHUCCTS KL2 Scholar. Dr Ihemelandu's research focuses on understanding how identification of different tumor phenotypes and tumor microenvironments could be used to develop improved methods for early cancer detection, diagnosis, and prognosis. His work on in vivo imaging methods that allow the reliable and quantifiable identification of molecular signatures and architectures of tumors, the evaluation of genetic evolution of tumor cells the other cell types in the tumor microenvironment that contribute to the observed and changing landscapes of tumor heterogeneity, and the real-time assessment of cancer treatment response have the potential to significantly improve cancer detection, diagnoses, treatment response and lead to personalized clinical cancer care.

## KEYNOTE SPEAKER



Dr. Emanuel F Petricoin has been the Co-Director of the Center for Applied Proteomics and Molecular Medicine (CAPMM) at George Mason University since 2005, where he is a University Professor. Prior to this position, he served as Co-Director of the FDA-NCI Clinical Proteomics Program from 2001-2005, and a Senior Investigator within the Center for Biologics Evaluation and Research at the US Food and Drug Administration from 1993-2005. The focus of the CAPMM is the invention and use of proteomics technologies for personalized therapy, molecular diagnostics and biomarker discovery. He is a co-founder of 4 life science companies. Dr. Petricoin's expertise includes precision medicine, proteomics and protein biomarkers, cell signaling, molecular diagnostic assay development, biologics and cellular therapeutics regulation, as well as artificial intelligence-based algorithms.

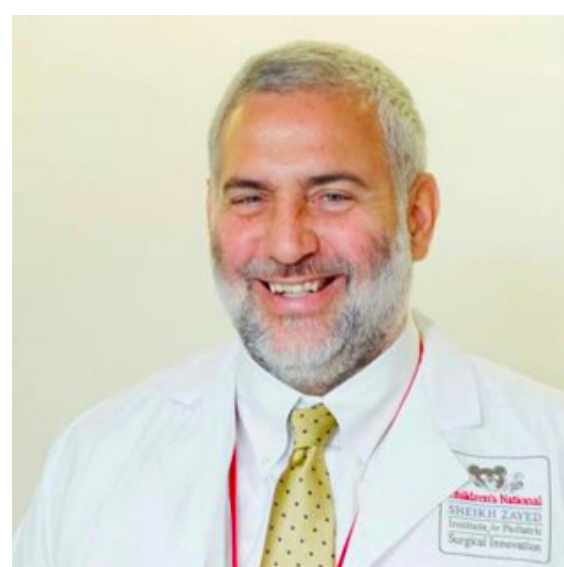
**Space is limited.**  
**Breakfast will be provided.**

**Link to RSVP:**  
<https://forms.gle/3PdbrDvH6WLvGso67>

**Link to Live Stream:**  
<https://georgetown.zoom.us/j/707716617>

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## PANELISTS



Kevin Cleary, PhD

Scientific Lead of the Sheikh Zayed Institute for Pediatric Surgical Innovation at Children's National Medical Center



Martin J. Schnermann, PhD

Senior Investigator, Chemical Biology Laboratory; Head, Organic Synthesis Section at the Center for Cancer Research - National Cancer Institute



Stanley Fricke, NucE, PhD

Director of Medical Physics Center for Translational Imaging Departments of Radiology and Oncology, Georgetown University Medical Center