



## Seattle Institute for Biomedical and Clinical Research

January - March 2024

### Spotlight Feature

**ELAHE A. MOSTAGHEL, MD, PHD**



**E**lahe Mostaghel, MD PhD, is a Clinician Investigator in the Geriatric Research, Education and Clinical Center (GRECC) at the Veterans Affairs Puget Sound Health Care System (VA Puget Sound), Co-Director of the VA Genitourinary (GU) Oncology Clinic, Attending Physician in Medical Oncology, and Associate Professor of Medicine in the Department of Medicine at the University of Washington (UW). Her research is focused on understanding hormonal related mechanisms of disease progression and treatment resistance in localized and advanced prostate cancer. Through collaborations at the UW, Fred Hutchinson Cancer Center (FHCC) and the VA, she and the group have evaluated tumoral upregulation of tissue androgens and the androgen receptor as relevant mechanisms of resistance to hormonal therapy. Utilizing patient derived xenograft (PDX) models of prostate cancer developed by the UW GU Cancer Research Lab, as well as prostate tissue and tumor samples obtained throughout the disease and treatment continuum, her studies have been directed at characterizing the tumor androgen microenvironment and tumor-based mechanisms that facilitate preserving this microenvironment, and most recently, at understanding how baseline and treatment induced changes in the androgen environment influence disease progression and response to therapy. Her work has served to facilitate the application of sensitive and specific Mass Spectrometry (MS) based methods for the measurement of sub-castrate steroid levels in vanishingly small tissue samples, irrefutably demonstrating that while castration uniformly suppresses serum testosterone levels, and markedly suppresses tissue androgens, it does not in fact, eliminate androgens from the prostate tumor microenvironment.

She has worked closely with the VA MS facility under the guidance of Dr. Alvin Matsumoto to establish that the low serum androgen levels in castrate patients do not reflect the measurable amount of residual androgens that remain in prostate tumors and can serve as critical drivers of castration resistant tumor progression. This has been demonstrated in prostate tissues biopsies from men treated with male contraceptive regimens (which induce testicular suppression; collaboration with Dr. Stephanie Page in Endocrinology), in prostate biopsies and prostatectomy specimens from multiple studies of men with localized prostate cancer treated with varying regimens of neoadjuvant castration therapy, in multiple PDX models of advanced prostate cancer, and most compelling of all, in prostate tumor metastases obtained at autopsy or via biopsy during clinical studies of men with advanced metastatic cancer. These studies have spanned multiple collaborations with VA faculty including Dr. Jonathan Wright, Urology, Dr. Stephen Plymate, Geriatrics, and Dr. Bruce Montgomery, Medical Oncology.

Dr. Mostaghel serves as Principal Investigator (PI) of academic and industry supported studies directed at further dissecting the intratumoral androgen environment and response to therapy, including a Department of Defense (DoD) Idea Development Award entitled “Medical Adrenalectomy to Abrogate Ligand Production in Castration-Resistant Prostate Cancer”, and an industry collaboration entitled “Preclinical Assessment of Abiraterone-Decanoate (Abi-Dec) in Prostate Cancer”.

### SAVE THE DATE - R&D SEMINAR

**SIBCR R&D Seminar** - Heather H. Cheng, MD, PhD, Director, Prostate Cancer Genetics Clinic, Clinical Research Division, Fred Hutchinson Cancer Center; Associate Professor, Division of Hematology and Oncology, University of Washington School of Medicine - **June 27th, 2024, 12-1 PM** - VA Building 101-1E80-90 and Virtual – Title: TBN