Mariaelena Pierobon, MD, MPH

Research Associate Professor, Center for Applied Proteomics and Molecular Medicine

Education

MD, University of Padova (Italy), School of Medicine and Surgery
MPH, George Mason University

Key Interests

Precision Medicine | Clinical Trials | Translational Research | Tumor Microenvironment | Cancer Signaling | Proteomics | Tumor Biomarkers

CONTACT

Phone: 703-993-9839 | Email: mpierobo@gmu.edu
Website: http://capmm.gmu.edu/capmm-team

SELECT PUBLICATIONS

- M. Pierbon *et al.*, Enrichment of PI3K-AKT-mTOR pathway activation in hepatic metastases from breast cancer. *Clin Cancer Res* 23(16), 4919–4928 (2017).
- M. I. Sereni *et al.*, Kinase-driven metabolic signalling as a predictor of response to carboplatin-paclitaxel adjuvant treatment in advanced ovarian cancers. *Br J Cancer* 117(4), 494-502 (2017).
- E. Pin *et al.,* A pilot study exploring the molecular architecture of the tumor microenvironment in human prostate cancer using a laser capture microdissection and reverse phase protein microarray workflow. *Mol Oncol* 10(10), 1585-1594 (2016).

Research Focus

The primary focus of my research is the delivery and implementation of precision medicine for cancer patients. My personal mantra is "Discover and heal." I am thrilled by the challenge of uncovering new therapeutic opportunities for cancer patients and devising ways of translating them to large-scale healing opportunities. My research model is based on a combination of translational studies and clinical trials with a focus on metastatic disease and on the tumor microenvironment. We work with *in vitro* models and patient-derived biological specimens. Our research activities include target identification, detection of response mechanisms, and diagnostic advancements for patients' stratification to treatment. We use state-of-the-art technologies to explore spatial and dynamic interactions in cancer, and utilize this information to devise tailored, therapeutic solutions for our patients.

Current Projects

- Targeting metastatic cancers using precision medicine. In nationwide multicenter clinical trials sponsored by the Side Out Foundation, we use "omic" techniques to identify drivers of individual tumors and develop tailored treatments.
- Developing novel strategies for exploring tumor-immune interactions. We explore dynamic tumor-immune interactions, identify mechanisms of response to immunotherapy, and develop diagnostic tools for treatment selection.
- Exploiting gene-dosage effect. We study the phenotypical manifestations of oncogenic gene-dosage on tumors' signaling network to develop targeted therapeutic options in lung cancer.
- Exploring protein-protein interactions and proteins intracellular localization. We develop novel analytical tools for exploring protein complexes and their role in response to treatment in cancer.