

Women's Health Research Day Abstract 2021  
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**Project Title:** Combining Molecular and Clinical Data for Patient Stratification in Interstitial Cystitis/Bladder Pain Syndrome

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Interstitial cystitis/bladder pain syndrome (IC/BPS) is a chronic condition that predominantly affects females and is characterized by pelvic pain perceived to be emanating from the bladder and urinary symptoms in the absence of another identifiable cause. IC/BPS is a complex condition that is difficult to treat because of an incomplete understanding of disease etiology and disease progression. Molecular studies, when combined with clinical parameters, provide an important tool with which to identify patient subgroups and can eventually benefit diagnosis and treatment of this heterogeneous condition. For example, initial gene expression studies performed by our group have demonstrated that IC/BPS patients can be stratified based on anesthetic bladder capacity (BC) into at least two distinct subgroups: (1) those with low anesthetic BC (< 400 cc), and (2) those with non-low anesthetic BC ( $\geq$  400 cc). This has become the framework for several subsequent studies that look to answer questions about IC/BPS pathophysiology, such as whether small fiber polyneuropathy (SFPN) correlates with either of these subgroups and can serve as a biomarker for a subset of IC/BPS patients, or whether there is an element of disease progression that results in an end-stage bladder (i.e., refractory to all medical therapies). Here we will present data that illustrates how these hypotheses are interconnected as we endeavor to identify factors that underlie disease etiology and disease progression in IC/BPS.

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