BRIGHAM AND WOMEN'S HOSPITAL
HARVARD MEDICAL SCHOOL

181 Longwood Avenue
Boston, Massachusetts 02115-5804

Department of Medicine
Channing Division of Network Medicine

Channing Microbiome Seminar

June 17 (Friday), 2022, 11AM (ET)

Zoom: https://us02web.zoom.us/j/81070959105?pwd=RFJNd3dSZmR6dXJZNjJiYVVzQ3NEQT09
Meeting ID: 810 7095 9105
Passcode: 984617

Susan Bullman, PhD

Assistant Professor, Human Biology Division,
Fred Hutchinson Cancer Center
Seattle, WA, USA.
https://www.fredhutch.org/en/faculty-lab-directory/bullman-susan.html

Assessing the contribution of the intratumoral microbiota to the tumor microenvironment

Abstract: Within human cancers, malignant cells are surrounded by a complex network of non-malignant cells including endothelial cells, fibroblasts and a range of immune cells. In addition to these human cell types, there are distinct bacterial communities that reside on and within tumors; the intratumoral microbiota. Recent studies have demonstrated that >33 major cancer types harbor molecular evidence of an intratumoral microbiota and that these bacterial communities vary by cancer type. Our previous work, focusing on *Fusobacterium* species in colorectal cancers (CRC), demonstrated the persistence of *Fusobacterium* and co-occurring anaerobes with the cancer as it travels to distant sites in metastases. Moreover, we show that antimicrobial treatment of *Fusobacterium*-harboring patient derived xenografts significantly reduced *Fusobacterium*-tumor load, cancer cell proliferation and tumor growth, suggesting microbiome modulation may benefit the treatment of *Fusobacterium*-associated CRC. Now, applying and adapting spatial transcriptomics, spatial proteomics and single cell RNA sequencing (INVADEseq) to two cancer types at the extremes of the gastrointestinal tract, we aim to reveal spatial and cellular host-bacterial interactions within the tumor microenvironment of human oral and colorectal cancers.

Bio: *Dr. Susan Bullman is an Assistant Professor at the Fred Hutchinson Cancer Center where her group studies the role of the intratumoral microbiota on cancer progression and patient response to treatments. She completed her postdoctoral fellowship at the Dana-Faber Cancer Institute and Broad Institute in Prof. Matthew Meyerson's laboratory and was Instructor in Medicine at Harvard Medical School before joining Fred Hutch in 2019. Dr. Bullman's laboratory, funded by the NCI and Keck Foundation, combines pre-clinical cancer models, molecular microbiology along with in-situ imaging combined with spatial and single cell sequencing approaches to understand host-microbial interactions within the tumor microenvironment.*

Hosted by Yang-Yu Liu