Key questions defining research program:

- What is the role of carcinoma-associated mesenchymal stem cells (CA-MSCs) in the formation and function of the ovarian cancer tumor microenvironment?
- How are normal tissue mesenchymal stem cells (MSCs) converted into CA-MSCs and what are targets to block this conversion?
- What is the role of CA-MSCs in the promotion of ovarian cancer metastasis?
- How does neoadjuvant chemotherapy affect the tumor promoting properties of MSCs?
- What are critical epigenetic events regulating the development of a CA-MSCs?

Key words describing research program:

- Ovarian cancer
- Tumor microenvironment
- Carcinoma-associated mesenchymal stem cells
- Mechanisms of metastasis
- Epigenetic regulation of tumor stroma

Titles for shovel-ready research projects:

- Targeting ovarian cancer metastasis by disruption of cell surface protein interactions between ovarian cancer cells and CA-MSCs.
- Define the tumor induced epigenetic regulation of CA-MSCs
- Determine if CA-MSCs co-migrate with tumor cells during ovarian cancer metastasis
- Define the impact of hypoxia signaling on the function of CA-MSCs through investigation of HIF1a and HIF2a signaling
- Define the role of GADD45a on the conversion of a MSC into a CA-MSC

Data sources for shovel-ready research projects:

- Ovarian cancer ascites flow cytometry array
- EPIC methylation array, CHIPseq, ATACseq, RNAseq
- Human and mouse derived MSCs and CA-MSCs with IRB approval for continued collection of patient ovarian cancer samples