Seeking 2-4 Postdoctoral Fellows for immediate hire into competitive open positions within the collaborative laboratories of Julie Ostrander, Laura Mauro, and Carol Lange at the University of Minnesota *Masonic Cancer Center* (Minneapolis, Minnesota):

We are seeking highly motivated individuals driven to become future scientists and leaders in the field of hormone action and signal transduction in breast and ovarian cancer. Training grant (NIH T32) positions are also available.

Our collaborative research team is focused on the role of steroid hormone receptors (SRs) and their key co-activators (FOXO1, SRC-3, PELP1) in breast and ovarian cancers. A major focus of our laboratories is defining novel SR actions within the cancer context. Specifically, the role of post-translational modifications (PTMs) to SRs and their binding partners in response to stress-activated protein kinases and other oncogenic signaling pathways frequently elevated and activated in hormone-driven cancers. Our overarching research goal is to better understand how SR+ breast cancers and other hormone-influenced cancers of reproductive tissues progress to advanced stages that escape endocrine (i.e. SR-blocking) or other molecular targeted therapies that primarily target proliferating cells. Our collaborative team has routinely developed new reagents and employed classical biochemistry and molecular biology techniques to study SR and SR co-activator actions (and SR crosstalk with signaling pathways and "sister" SRs) including novel mechanisms of gene regulation that impact breast tumor development and progression, altered signaling and metabolism, cancer stem cell biology, and endocrine therapy resistance. More recently, in collaboration with **Dr. Laura Mauro**, we have also focused on the development of early SR+ fallopian tube lesions that give rise to high grade serous ovarian cancer. We typically complement mechanistic molecular *in vitro* studies focused on signaling inputs to SR-dependent regulation of transcription with the use of genetically modified mice, mouse mammary intraductal injection (MIND), and/or human patient derived xenograft (PDX) models maintained in mice as well as patient derived organoids (PDO).

Ongoing projects encompass the following research themes and their molecular mechanisms:

- The role of PELP1/SRC-3/SR signaling and transcriptional complexes in altered gene regulation, cancer metabolism, and breast cancer stem cell biology
- Regulation and signaling determinants of cell fate in breast cancer stem cell subpopulations
- ER and PR isoform signaling cross talk in luminal breast cancer progression
- Ligand-independent actions of p-SRs and p-SR-containing complexes in breast cancer
- Cellular "stress" sensing by p38 MAPK and phospho-GR in triple negative breast cancer
- Novel HIF/GR-induced signaling pathways mediated by Breast Tumor Kinase/PTK6
- Fallopian tube transformation and early high grade serous ovarian cancer progression
- Cell fate plasticity (cell cycle exit/entry into G0) and breast cancer stem cell biology
- Mechanisms of and biological role of cancer cell dormancy/quiescence and senescence
- SR and signaling pathway regulation of breast cancer stem cell populations and biology
- Breast cancer metastatic cell dissemination as circulating tumor cell/stem cell/CAF clusters
- PR crosstalk with STAT3 and Aurora Kinase signaling in advanced breast cancer progression

Required: Ph.D. in biomedical sciences as well as experience working on signaling proteins, including transcription factors, NRs, and other closely related molecules and associated signaling pathways. Expertise in the following techniques is preferred: flow cytometry, RT-qPCR, performance and analysis of cell-based assays, cell culture, western blotting, and in vitro biological assays. Knowledge of state-of-the-art methods and applications of basic biostatistics, genomics/genetics, such as Nextgen methods for analyses of epigenetics including DNA and RNA sample preparation and data interpretation is preferred. The applicant should have outstanding (oral) presentation and English writing skills. **Please send letter of interest and CV with list of references to:**
Julie Ostrander, PhD and Carol Lange, PhD at email: Lange047@umn.edu