Advertisement for Post-Doctoral Scholar

Salary:  Commensurate based on NIH and research experience

Full/Part Time Status:  Full Time

Percent Time:  100%

Position Description:  Postdoctoral fellow position(s) (1-2) are available in Dr. Ling-Zhi Liu’s laboratory in the Department of Medical Oncology at Thomas Jefferson University. The focus of the laboratory is to investigate ACS and NIH-funded projects in cancer initiation, progression and drug/therapy resistance. Available projects include: 1. Investigate new mechanisms of resistance in lung cancer to targeted therapy and radiation treatments with the goal of improving targeted therapy and radiation; 2. Study mechanisms of lung carcinogenesis induced by chromium or arsenic, key environmental carcinogens; 3. Investigate novel mechanisms of ovarian cancer or breast cancer development, acquired drug resistance or radio-resistance, and identify new biomarkers and therapeutic targets for overcoming treatment resistance. Please send application by email to Dr. Liu, ling-zhi.liu@jefferson.edu if you are interested in the research projects.

Education Requirement:  PhD or MD/PhD

Required Qualifications:  Laboratory experience in tissue culture; DNA, RNA, and protein analysis such as Western blotting, IP and PCR assays; molecular biology; experience with animal models of tumorigenesis; good written and verbal communication skills.

Desirable Qualifications:  Experience with TCGA data analysis; experience with transgenic and gene knockout mice handling; experience with immunohistochemical staining (IHC).

APPLICATION REQUIRED DOCUMENTS

Curriculum Vitae
Name and Contact Information of References
Letter of Interest

Number of References:  3
My research interest is to study novel mechanisms of carcinogenesis, angiogenesis and cancer resistance to chemo- and radio-therapy.

My lab studies new molecular mechanisms of epigenetic regulation and signaling pathways in tumorigenesis and therapeutic resistance. We study how epigenetic regulation such as DNA and RNA methylation, histone H3 acetylation affects tumor development and treatment resistance, and roles and mechanisms of reactive oxygen species (ROS), miRNAs, and classical pathways such as PI3K/AKT/p70S6K1, RAS/RAF/MAPK and other novel signaling pathways in inducing tumorigenesis, angiogenesis and treatment resistance.

Environmental Health Sciences is an important aspect in cancer research. We are focusing on the study of metal including arsenic-, cadmium-, and chromium-induced malignant transformation and carcinogenesis. We have taken an integrative approach in which we have combined molecular biology, cell biology, animal study and human cohort to study the underlying molecular mechanisms.

**Research Projects**

The lab is interested in both basic and translational studies to investigate:

1. Roles and mechanisms of signaling pathways in arsenic-, cadmium- and chromium-induced carcinogenesis;
2. Novel mechanisms of therapeutic resistance in ovarian cancer;
3. Mechanisms of acquired resistance to EGFR-TKIs and radiation treatment in NSCLC cells and the strategy to increase the sensitivity of cancer cells to treatment;
4. Roles and mechanisms of tumor microenvironment in breast cancer development and treatment resistance.

Techniques needed:

Cell culture
Techniques for molecular biology: PCR, immunoblotting, co-IP, CHIP, IHC, subcloning, gene knockdown or knockout, gene overexpression, luciferase assay, biological functions assay (proliferation, migration, invasion, tube formation, colony formation, and so on), animal studies (genotyping, tumor growth assay) et al.
Animal study: breeding, genotyping, maintenance of gene knockout mice, tumor growth assay, angiogenesis assay, PDX cancer model, chemo- and radio-therapy of cancer using animal models.