**Postdoctoral research in the embryonic limb development and pathogenesis of musculoskeletal system using single-cell multi-omics approaches.**

Dr. Chia-Lung Wu’s Laboratory in the Department of Orthopaedics and the Center for Musculoskeletal Research (CMSR) at The University of Rochester is looking for a highly-motivated post-doctoral research fellow to lead NIH-funded research projects aimed to decipher **epigenetic regulation and gene regulatory network governing embryonic limb development and pathogenesis of joint diseases** including arthritis and mutation-mediated skeletal dysplasias. Dr. Wu’s lab utilizes several state-of-the-art single-cell omics techniques including single cell/nucleus/ChIP sequencing and spatial transcriptomic profiling, complemented by genome editing of mouse/human induced pluripotent stem cells (iPSCs) and animal models to uncover these fundamental cellular and molecular mechanisms. The long-term goal of our research is to apply this knowledge to improve tissue engineering outcomes, stem cell therapy, regeneration, and repair for musculoskeletal disorders.

**Requirements/Qualifications:**

The applicant must have a PhD or MD/PhD in genetics, biology, biomedical engineering/bioengineering or related fields. The successful candidate must have solid experience in gene editing using CRISPR-Cas9 system; gene cloning; viral vector preparation and production as well as viral transduction of cells.

Applicants should be passionate about research, enjoy solving complex scientific problems, and have trouble-shooting skills. Applicants are expected to collaborate with other members of the lab and researchers in the CMSR, and other institutions. The successful applicant will conduct productive team-oriented and independent research. Applicants are also expected to train and mentor junior lab members. The successful candidate must have strong written and verbal communication skills as they are expected to have an active role in preparing manuscripts, publishing their work in peer-reviewed journals, training grants preparation and submission (including T32, F and K awards), and presenting their work at national and international conferences.

Expertise in RNA-sequencing, bioinformatics, and knowledge of programing as well as animal handling will be preferable and advantageous but not required. Training for sequencing techniques, bioinformatic analysis and animal models (rodents) will be provided in the Wu lab.

We offer a competitive compensation and benefits package. The position is available for immediate occupancy, contingent on background experience and performance. Individuals who are interested should submit a detailed CV, a cover letter containing a brief description of professional training (including scientific accomplishments and leadership experience), one major publication, and the name and contact information of three references to Dr. Chia-Lung Wu (chia-lung\_wu@urmc.rochester.edu).

**About The Wu lab and the CMSR at the University of Rochester:**

Dr. Chia-Lung Wu is an Assistant Professor of the Department of Orthopaedics and the Center for Musculoskeletal Research (CMSR) at the University of Rochester. Our research interest is to examine the role of genetic and epigenetic regulation in cell fate decisions of musculoskeletal lineages as well as onset and progression musculoskeletal diseases. Dr. Wu currently serves as an advisor in the Core of Biochemistry, Cellular, Molecular & Single Cell Omics in the CMSR, which provides services such as guidance for conducting single cell RNA sequencing experiments, as well as specialized bioinformatics expertise to all CMSR members. Our lab is a young, energetic, and diverse team working closely with numerous basic scientists and orthopaedic surgeons. Importantly, we care about trainees’ professional growth, work/life balance, career development, and network building. Please visit our lab webpage to see detailed our work and publications: <https://www.urmc.rochester.edu/labs/chia-lung-wu.aspx>

The CMSR at the University of Rochester is a NIH-P30 and T32 funded center and comprised of highly integrated faculty and trainees from a variety of departments, including Orthopaedics, Pathology, Biomedical Engineering, and Medicine (Allergy/Immunology and Rheumatology, Endocrinology), Biomedical Genetics, Biochemistry and Biophysics, Environmental Medicine, Clinical and Translational Science Institute, Pharmacology and Physiology, Microbiology and Immunology, and Pediatrics. Principal investigators from these departments share approximately 30,000 contiguous square feet research space and facilities that support over 100 researchers working in a programmatic manner to address the most challenging questions in the musculoskeletal sciences. The CMSR also provides numerous outstanding core facilities and resources, to name a few: 1) Genomics Research Center offers services for state-of-the-art next-generation sequencing techniques and bioinformatic analysis, 2) UofR Cell Therapy Manufacturing Facility (UofR- CTMF) provides GMP manufacturing of cells for Clinical trials, 3) Transgenic mouse and Genome Editing Core, 4) the Histology, Biochemistry, and Molecular Imaging (HBMI) Core, 5) Biomechanics, Biomaterials and Multimodal Tissue Imaging (B2MTI) Core, etc. For detailed information about the CMSR, please visit: <https://www.urmc.rochester.edu/musculoskeletal-research.aspx>

**Diversity statement:** The University of Rochester values diversity and is committed to equal opportunity for persons regardless of age, color, disability, ethnicity, gender identity or expression, genetic information, marital status, military/veteran status, national origin, race, religion/creed, sex, sexual orientation, or any other status protected by law. Further, the University complies with all applicable nondiscrimination laws in the administration of its policies, programs, and activities. Questions on compliance should be directed to the particular school or department and/or to [Equal Opportunity at Rochester](http://www.rochester.edu/eoc/).