

Postdoctoral Position

University of Rochester School of Medicine and Dentistry

Department of Pediatrics, Division of Neonatology

Deshmukh Lab

<https://www.urmc.rochester.edu/pediatrics/deshmukh-lab>

ENVIRONMENT:

A 2–3-year postdoctoral fellow position is available in the Deshmukh Lab in the Department of Pediatrics, Division of Neonatology, at the University of Rochester. The lab focuses on understanding how early-life inflammation and microbiota shape long-term immune development, hematopoietic stem cell (HSC) programming, and susceptibility to lung diseases. Current projects include investigating the PTN-TGF- β 1 axis in fetal HSC reprogramming, gut-lung immune cross-talk, and the developmental origins of asthma and chronic lung disease following neonatal infection or dysbiosis. Our lab employs a multi-omic single-cell approach (scRNA-seq, scATAC-seq, spatial transcriptomics) in nonhuman primates and humanized mouse models, combined with advanced computational and functional analyses.

We work closely with collaborators across immunology, genomics, and systems biology, providing an intellectually vibrant and highly interdisciplinary research environment.

JOB DESCRIPTION:

Under the direction of the principal investigator, the postdoc will play a key role in driving the lab's NIH-funded research program. This will include:

- ✓ Leading analyses and preparing figures and manuscripts from recently completed single-cell multi-omic datasets.
- ✓ Designing and conducting experiments in xenotransplantation models to test how fetal exposures affect HSC function and immune responses.
- ✓ Applying computational and statistical tools to integrate multi-modal datasets (e.g., chromatin accessibility, gene expression, cell-cell communication) and develop mechanistic insights.
- ✓ Collaborating with lab members and external partners to advance new experimental directions and hypotheses.
- ✓ Mentoring graduate students and technical staff in experimental design and data analysis.

The position is available immediately. Initial appointment is for one year, with renewal expected based on performance and continued funding. Total appointment cannot exceed five years.

QUALIFICATIONS:

We seek motivated, creative candidates with a recent PhD, MD, or MD/PhD in immunology, stem cell biology, microbiology, genomics, bioinformatics, or a related field. Essential qualifications:

- Strong experience in molecular biology and/or computational analysis.

- Experience with single-cell technologies, stem cell transplantation, or microbiome research is highly desirable.
- Familiarity with R, Python, or other data analysis tools is a plus.
- Excellent communication skills and a collaborative mindset.

LOCATION:

The Deshmukh Lab is located within the University of Rochester Medical Center in Rochester, NY — a nationally ranked medical institution with outstanding core facilities, a vibrant research community, and a strong institutional commitment to supporting postdoctoral career development.

CONTACT:

Interested applicants should send a CV, a cover letter describing research experience and interests, and contact information for three references to Dr. Hitesh Deshmukh (hitesh_deshmukh@urmc.rochester.edu).

ABOUT US:

The University of Rochester's mission of "Ever Better" is reflected in its commitment to innovative, compassionate, and cutting-edge patient care, research, and education. The Department of Pediatrics offers a collaborative, diverse, and inclusive environment where postdocs can grow professionally and make meaningful contributions to pediatric and neonatal health research.

The University's Postdoctoral Association (PDA) provides additional resources for career development, networking, and community building: <https://ccc.rochester.edu/pda/home/>

The University of Rochester is an equal opportunity employer committed to fostering an inclusive workplace where all individuals feel valued, respected, and supported. We encourage applications from candidates of all backgrounds and identities.