

Postdoctoral Research Position in Transcription Biology and Chromatin Regulation

Parua Lab | Department of Molecular Pharmacology
Albert Einstein College of Medicine
Expected start date: January 2027

The [Parua Lab](#) invites applications from motivated, scientifically curious researchers for a postdoctoral position investigating the molecular mechanisms of RNA polymerase II (Pol II) transcription and its coordination with chromatin regulation. We seek candidates with strong expertise in transcription biology, mammalian genome editing, yeast genetics, and genomic experimentation and data analysis.

Research Focus and Opportunities

Precise regulation of Pol II transcription is essential for gene expression, cell identity, differentiation, and adaptive responses. Our laboratory investigates the mechanisms governing two critical transitions in the transcription cycle: initiation to productive elongation and elongation to termination.

A central goal is to understand how cyclin-dependent kinases and opposing phosphatases dynamically control phosphorylation to regulate Pol II pausing, elongation, and termination. We also investigate how these signaling networks integrate with transcription factors, chromatin organization, and histone post-translational modifications.

Using the genetically tractable fission yeast *Schizosaccharomyces pombe*, we study promoter-proximal pausing and pausing at gene ends to identify shared and distinct mechanisms governing transcriptional progression. Our research combines classical and chemical genetics with genomic and proteomic approaches, including ChIP-seq, PRO-seq, NET-seq, RNA-seq, 3' RNA-seq, and MNase-seq.

The successful candidate will develop mechanistic research projects, integrate genetic perturbations with genome-wide measurements, and help uncover conserved principles of eukaryotic transcriptional control. These studies aim to establish a foundation for understanding how disruption of transcriptional regulation contributes to human disease.

Responsibilities

- Design and conduct hypothesis-driven studies of Pol II transcription, kinase–phosphatase signaling, and chromatin regulation.
- Develop and apply genetic approaches in yeast and perform CRISPR/Cas9-mediated gene editing in mammalian cell lines, as required by project objectives.
- Generate, analyze, and interpret genomic datasets, integrating findings with complementary molecular, biochemical, and proteomic experiments.
- Maintain rigorous experimental records and reproducible data analysis workflows.
- Communicate findings through scientific presentations and manuscripts, participate in laboratory discussions, and contribute to collaborative research.

Essential Qualifications

Applicants must have:

- A Ph.D. or equivalent doctoral degree in molecular biology, genetics, biochemistry, cell biology, or a closely related discipline by the start date.
- **Strong knowledge of gene transcription biology**, supported by relevant research expertise and practical experimental experience.
- **Expertise in genetics, including hands-on experience with CRISPR/Cas9-mediated gene editing in mammalian cell lines.**
- **Hands-on experience with genomic approaches and proficiency in analyzing and interpreting the resulting data.** Applicants should describe the assays and computational workflows they have used.

- **Research experience working with yeast and demonstrated expertise in yeast genetics.**
Applicants should specify the yeast species and genetic methods they have used.
- Strong experimental design, critical thinking, troubleshooting, and scientific communication skills.
- The ability to work independently and contribute effectively to a collaborative research environment.

Experience with *S. pombe*, nascent transcription profiling, chromatin biology, or kinase–phosphatase signaling would be particularly relevant.

Application Instructions

Please submit:

- A curriculum vitae, including a publication list.
- A cover letter describing your research interests, relevant experience, and career goals.
- Names and contact information for professional references.

Send application materials to **Pabitra Parua, Ph.D., Assistant Professor and Principal Investigator**, at pabitra.parua@einsteinmed.edu, using the subject line “**Postdoctoral Application – Pol II Transcription Research.**”

Expected start date: January 2027

Application deadline: No deadline

Albert Einstein College of Medicine is committed to fostering an inclusive, collaborative, and intellectually vibrant research community. To learn more about our research, visit the [Parua Lab website](https://parualab.com/) (<https://parualab.com/>).