

Postdoctoral Fellow position in RNA biology and gene regulation

Department of Cell Biology, Harvard Medical School
Department of Cancer Immunology & Virology, Dana-Farber Cancer Institute

Boston, MA

Description:

The Lee laboratory, located at Dana-Farber Cancer Institute and Harvard Medical School, is focused on understanding regulation of cellular mRNA translation. Our research goal is to discover how mRNA translational control drives the dynamic gene programs required for the cellular response to environmental cues, and why cancer manifests when protein synthesis is dysregulated.

Specifically, we are focused on identifying how novel functions of translation initiation factors drive expression of distinct gene programs, and how translational control allows for adaptive gene expression required for complex cellular response and behavior. To address these questions, we use an interdisciplinary approach, combining sequencing-based discovery-oriented studies with mechanistic biochemical and molecular approaches. Most recently, we discovered a new translation initiation pathway that regulates translation of specific mRNAs during metabolic stress (Lamper et al. *Science*, 2020; Lee et al., *Nature* 2016; Lee et al., *Nature* 2015).

We are seeking highly motivated postdoctoral scholars to join our team and make fundamental insights into mRNA translation regulation. Projects include studying the mechanistic basis of transcript-specific translation initiation complexes, and investigating how novel functions of translation machinery have evolved to support correct organismal homeostasis and development. These projects will provide training in a broad set of techniques, including biochemistry, general RNA and molecular biology methods, bioinformatics, and cell-based experiments.

Qualifications:

We are interested in applicants from diverse research backgrounds, but are particularly interested in applicants with Ph.D. experience in RNA biology, molecular and cell biology, or biochemistry. Candidates should be enthusiastic about collaborative and interdisciplinary research, be motivated to develop as an independent scientist, and demonstrate excellent scientific communication skills.

Environment:

Located in Boston, Harvard Medical School offers a world-class research environment along with being part of the vibrant research community of the greater Boston/Cambridge area.

Availability:

Immediate

To apply:

Qualified candidates should send a cover letter, CV, and contact information for three references to: Dr. Amy Si-Ying Lee amysy_lee@dfci.harvard.edu

For more information:

Details about the lab can be found at: <https://leelab.hms.harvard.edu>

Please also see our recent publications:

- Lamper et al, *Science* 2020 “A phosphorylation-dependent eIF3d translation switch mediates cellular adaptation to metabolic stress” (<https://dx.doi.org/10.1126/science.abb0993>)
- Lee et al, *Nature* 2016 “eIF3d is an mRNA cap-binding protein that is required for specialized translation initiation” (<http://dx.doi.org/10.1038/nature18954>)
- Lee et al, *Nature* 2015 “eIF3 targets cell-proliferation messenger RNAs for translational activation or repression” (<http://dx.doi.org/10.1038/nature14267>)