Post-doctoral Opportunities at Johns Hopkins University

Florida Campus

Two fully funded postdoctoral research positions are available now in the **Laboratory of Dr. Laszlo Nagy,** in the Institute for Fundamental Biomedical Research at **Johns Hopkins University School of Medicine, Johns Hopkins All Children's Hospital in St. Petersburg, FL.**

Post-doctoral position #1
Transcriptional control of macrophage polarization: Study the mechanisms of interplay between transcription factor binding, enhancer activity and the 3D genome conformation.

Post-doctoral position #2
Role of inflammation in disease progression and as a therapeutic target in skeletal muscle pathology (i.e. Duchenne Muscular Dystrophy and sarcopenia).

Requirements:

1. PhD with at least one first author publication in peer-reviewed journal(s).
2. For position #1: Expertise in molecular biology is required. Experience in NGS techniques and bioinformatics is a plus.
3. For position #2: Experience with murine animal models is required. Experience in muscle physiology, histology, imaging and flow cytometry is a plus.
4. Ability to work independently and as part of a team, excellent work ethic and being well organized.

The Nagy research group is seeking highly motivated and enthusiastic postdoctoral fellows to contribute to their ongoing epigenomic, cell biological and in vivo analyses of the molecular basis of macrophage specification and contribution to health and disease.

Come join this highly collaborative and interdisciplinary group.

Our laboratory utilizes diverse experimental techniques such as RNA-Seq, ChIP-Seq, ATAC-Seq, Hi-ChIP. HiC, lipidomics, bioinformatics and data integration and in vivo injury and disease models and has long-standing expertise in epigenomics, gene expression regulation, macrophage biology and skeletal muscle regeneration. We are part of a newly established highly interactive excellent research environment at Johns Hopkins All Children's Hospital in St. Petersburg, Florida with strong ties to the Baltimore campus of Johns Hopkins University School of Medicine as being part of the Center for Metabolic Origins of Disease and the Metabolic Interest Group. In addition, the Nagy lab has an extensive network of collaborators throughout the US and in Europe allowing ample opportunity to travel and collaborate.

Our research projects involve epigenomics, macrophage polarization and subtype specification, tissue repair, Duchenne Muscle Dystrophy and acute and chronic inflammation. This allows exposure to diverse but overlapping areas of research. Much of our work has clinical and translational relevance.

Post-doctoral fellows in the Nagy Lab receive well-structured and extensive mentoring by the PI, are encouraged to initiate projects and collaborations, regularly get involved in reviewing and grant writing as well as supervising interns. Fellows are also encouraged to travel to learn new techniques, carry out collaborative research and attend national and international conferences. Former trainees of the lab have obtained positions at prestigious organizations: A. Szanto (MGH-Harvard), I. Szatmari (UT Southwestern), Sz. Benko (Univ. of Toronto), L. Szeles (Univ. of Geneva), D. Torocsik (Karolinska Inst.), M. Kiss (VIB, Brussels), Z. Simandi (UPenn), A. Horvath, (Australian National Univ.), B. Daniel (Stanford U.).

Compensation is competitive and commensurate with experience.

Please contact Dr. Laszlo Nagy with questions or an application via e-mail lnagy@jhmi.edu with a CV and names of three references.

Institute for Fundamental Biomedical Research

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JOHNS HOPKINS
All Children's Hospital

Recent publications and video abstracts:

Patsalos A, Tzerpos P, Halasz L, Nagy G, Pap A, Giannakis N, Lyroni K, Koliaraki V, Pintye E, Dezso B, Kollias G, Spilianakis CG, **Nagy L.** The BACH1-HMOX1 Regulatory Axis Is Indispensable for Proper Macrophage Subtype Specification and Skeletal Muscle Regeneration. **J Immunol. 2019** Sep 15;203(6):1532-1547.
Video abstract: https://youtu.be/AwmgDBPissc

Giannakis, N., Sansbury B.E., Patsalos A., Hays T.T., Riley C.O., Han X., Spite M and **Nagy L.** Dynamic lipid mediator changes support macrophage subtype transition during muscle injury and regeneration **Nature Immunology 2019** 20, 626–636.
Video abstract: https://youtu.be/zJyLfqnsJ4k

Horvath A, Daniel B, Szeles L, Cuaranta-Monroy I, Czimmerer Z, Ozgyin L, Steiner L, Kiss M, Simandi Z, Poliska S, Giannakis N, Raineri E, Gut IG, Nagy B, **Nagy L.** Labelled regulatory elements are pervasive features of the macrophage genome and are dynamically utilized by classical and alternative polarization signals. **Nucleic Acid Research 2019**; 47(6):2778-2792.

Daniel B, Nagy G, Czimmerer Z, Horvath A, Hammers DW, Cuaranta-Monroy I, Poliska S, Tzerpos P, Kolostyak Z, Hays TT, Patsalos A, Houtman R, Sauer S, Deleuze JF, Rastinejad F, Balint BL, Sweeney HL and **Nagy L:** The nuclear receptor PPARg controls progressive macrophage polarization as a ligand-insensitive epigenomic ratchet of transcriptional memory. **Immunity 2018**; 49(4):615-626.
Video abstract: https://youtu.be/t8Bh_BR0_pE

Czimmerer Z, Daniel B, Horvath A, Rückerl D, Nagy G, Kiss M, Peloquin M, Budai MM, Cuaranta-Monroy I, Simandi Z, Steiner L, Nagy Jr B, Poliska P, Banko C, Bacso Z, Schulman IG, Sauer S, Deleuze JF, Allen EJ, Benko B, **Nagy L:** The transcription factor STAT6 mediates direct repression of inflammatory enhancers and limits activation of alternatively polarized macrophages**. Immunity 2018** Jan 16; 48(1):75-90.
Video abstract: https://youtu.be/j9_CboLKTRs

Kiss M, Czimmerer Z, Nagy G, Bieniasz-Krzywiec P, Ehling M, Pap A, Poliska S, Boto P, Tzerpos P, Horvath A, Kolostyak Z, Daniel B, Szatmari I, Mazzone M, **Nagy L:** Retinoid X receptor suppresses a metastasis-promoting transcriptional program in myeloid cells via a ligand-insensitive mechanism. **Proceedings of the National Academy of Science, USA 2017** Oct 3; 114(40):10725-10730.

Patsalos A, Pap A, Varga T, Trencsenyi G, Contreras Gerardo Alvarado, Garai I, Papp Z, Dezso B, Pintye E, **Nagy L:** In situ macrophage polarization is affected by altered cellular composition prior to acute sterile muscle injury. **Journal of Physiology 2017**; 595(17):5815-5842.

Simandi Z, Horvath A, Wright LC, Cuaranta-Monroy I, DeLuca I, Karolyi K, Sauer S, Deleuze JF, Gudas LJ, Cowley SM, **Nagy L:** Oct4 acts as an integrator of pluripotency and signal-induced differentiation. **Molecular Cell 2016**; 63(4):647-661.

Varga T, Mounier R, Patsalos A, Gogolák P, Peloquin M, Horvath A, Pap A, Daniel B, Nagy G, Pintye E, Póliska S, Cuvellier S, Ben Larbi S, Sansbury BE, Spite M, Brown CW, Chazaud B, **Nagy L:** Macrophage PPARg, a lipid activated transcription factor, controls the growth factor GDF3 and skeletal muscle regeneration**. Immunity 2016**; 45(5):1038-1051.