

# HARINI IYER

Department of Developmental Biology  
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## CURRENT POSITION

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**Postdoctoral Research Scholar**  
2017-

Department of Developmental Biology  
Stanford University, CA

## EDUCATION

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**Doctor of Philosophy**  
2017

Department of Cell and Developmental Biology  
University of Illinois at Urbana-Champaign, Urbana, IL

**Master of Science**  
2006

Department of Microbiology  
University of Mysore, Mysore, India

**Bachelor of Science**  
2004

Department of Microbiology  
Bharathiar University, Coimbatore, India

## RESEARCH EXPERIENCE

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**Postdoctoral Research Scholar**

2017-Present

*Postdoctoral Advisor – William S. Talbot, Professor, Department of Developmental Biology, Stanford University*

- Conceptualized and executed a project that defined a lysosomal gene network necessary for the chemotaxis and function of microglia in zebrafish.
- Designed tools for visualizing the endolysosomal pathway in microglia in vivo.
- Currently performing CRISPR screens in zebrafish to elucidate the functions of genes dysregulated or mutated in Alzheimer's disease patients.

**Graduate Research Assistant**

2010-2017

*Thesis Chair and Advisor - Phillip A. Newmark, Professor, Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign, Investigator, Howard Hughes Medical Institute*

- Defined the mechanism of transcription factor NF-YB-mediated maintenance of male germ cells in free-living and parasitic flatworms.
- Adopted an evolutionary-developmental approach for elucidating the function of Boule, which belongs to a family of proteins critical for human fertility.

**Assistant Research Scientist I and II**

2006-2010

*Group Leader – Balasubramanian, V., AstraZeneca Research and Development, Bangalore, India*

- Performed in vitro microbiology assays on biosafety levels 2 and 3 microorganisms, including clinical strains of *Mycobacterium tuberculosis*.

- Conducted drug susceptibility tests for multiple projects, high throughput candidate drug screens, enzyme assays, kill kinetics assays, drug combination studies, and drug resistance determination.

## GRANTS AND FELLOWSHIPS

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- **Postdoctoral Fellowship**, BrightFocus Foundation (*Role: PI, \$200,000*) 2022-2024
- **Developmental Project Award**, Stanford Alzheimer's Disease Research Center and National Institute on Aging (*Role: PI, \$250,000. Typically awarded to faculty members new to Alzheimer's disease-related research; declined year 2 of award*) 2021-2023
- **Postdoctoral Fellowship**, American Heart Association (*Role: Fellow, \$103,328*) 2018-2020
- **Dean's Postdoctoral Fellowship**, Stanford University School of Medicine 2017-2018
- **Block Grant Fellowship**, University of Illinois at Urbana-Champaign (*awarded to 8 out of 44 incoming students in the Molecular and Cellular Biology umbrella program for past academic excellence*) 2010

## AWARDS AND HONORS

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- [Postdoc JEDI Champion Award](#), Stanford University 2022
- International Zebrafish Society conference award (17th Annual Conference) 2022
- NK and Irene Cheung Family Scholar Award, Keystone Symposia 2022
- Marine Biological Laboratory Endowed Scholarship, Woods Hole, MA 2019
- [Tunji Toogun Research Excellence Award](#), Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign (*awarded to one graduate student in the department each year for outstanding research achievements*) 2018
- Student Travel Award, Society for Developmental Biology 2016
- Trainee award, Symposium for International Research and Innovations in Schistosomiasis (*awarded to 4 trainees of the over 100 participants*) 2016

## SELECTED PUBLICATIONS

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1. **Iyer, H.**, Shen, K., Meireles, A.M., Talbot, W.S. 2022. A lysosomal regulatory circuit essential for the development and function of microglia. *Sci Adv* 8(35):eabp8321.
2. Gan, L., Seki, A., Shen, K., **Iyer, H.**, Han, K., Hayer, A., Wollman, R., Ge, X., Lin, J.R., Dey, G., Talbot, W.S., Meyer, T. 2019. The lysosomal GPCR-like protein regulates Rag and mTORC1 localization and activity. *Nat Cell Biol* 21(5):614-626.
3. Meireles, A.M., Shen, K., Zoupi, L., **Iyer, H.**, Bouchard, E.L., Williams, A., Talbot, W.S. 2018. The lysosomal transcription factor TFEB regulates myelination downstream of the Rag-Ragulator complex. *Dev Cell* 47(3):319-330.
4. **Iyer, H.**, Issigonis, M., Sharma, P.P., Extavour, C.G., P.A. Newmark. 2016. A premeiotic function for *boule* in the planarian *Schmidtea mediterranea*. *Proc Natl Acad Sci USA* 113(25): E3509–18.
5. **Iyer, H.**, Collins III, J.J., P.A. Newmark. 2016. NF-YB regulates spermatogonial stem cell self-renewal and proliferation in the planarian *Schmidtea mediterranea*. *PLoS Genet* 12(6): e1006109.
6. Collins III, J.J., Wendt, G.R., **Iyer, H.**, P. A. Newmark. 2016. Stem cell progeny contribute to the schistosome host-parasite interface. *eLife*. 5:243.
7. Collins III, J.J., Wang, B., Lambrus, B.G., Tharp, M., **Iyer, H.**, and P. A. Newmark. 2013. Adult somatic stem cells in the human parasite, *Schistosoma mansoni*. *Nature*. 494: 476-479.

## MANUSCRIPTS IN PREPARATION

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8. **Iyer, H.**, Talbot, W.S. The lysosomal chloride channel Clcn7 and its partner Ostm1 have distinct

functions in microglia. (Anticipated date of submission: August 2023)

## OTHER PUBLICATIONS

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9. Naik, M., Raichurkar, A., Bandodkar, B.S., Varun, B.V., Bhat, S., Kalkhambkar, R., Murugan, K., Menon, R., Bhat, J., Paul, B., **Iyer, H.**, et al. 2015. Structure Guided Lead Generation for *M. tuberculosis* Thymidylate Kinase (Mtb TMK): Discovery of 3-Cyanopyridone and 1,6-Naphthyridin-2-one as Potent Inhibitors. *J Med Chem.* 58(2): 753-66.
10. Balasubramanian, V., Solapure, S., **Iyer, H.**, et al. 2014. Bactericidal activity and mechanism of action of AZD5847, a novel oxazolidinone for treatment of tuberculosis. *Antimicrob Agents Chemother.* 58(1): 495-502.
11. Gising, J., Nilsson, M.T., Odell, L.R., Yahiaoui, S., Lindh, M., **Iyer, H.**, et al. 2012. Trisubstituted imidazoles as *Mycobacterium tuberculosis* glutamine synthetase inhibitors. *J Med Chem.* 55(6): 2894-8.
12. Andaloussi, M., Lindh, M., Björkelid, C., Suresh, S., Wieckowska, A., **Iyer, H.**, et al. 2011. Substitution of the phosphonic acid and hydroxamic acid functionalities of the DXR inhibitor FR900098: An attempt to improve the activity against *Mycobacterium tuberculosis*. *Bioorg Med Chem Lett.* 21(18): 5403-7.
13. Andaloussi, M., Henriksson, L.M., Więckowska, A., Lindh, M., Björkelid, C., Larsson, A.M., Suresh, S., **Iyer, H.**, et al. 2011. Design, synthesis, and X-ray crystallographic studies of  $\alpha$ -aryl substituted fosmidomycin analogues as inhibitors of *Mycobacterium tuberculosis* 1-deoxy-D-xylulose 5-phosphate reductoisomerase. *J Med Chem.* 54(14): 4964-76.

## MENTORING AND TEACHING EXPERIENCE

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- [Stanford Summer Research Program](#)\* scholar, **Ranel Tuplano** 2022  
(Present affiliation: California State University, Northridge)
- High school researcher, **Vikram Mani** (Present affiliation: The Harker School) 2022
- [Community College Outreach Program](#)\* student researcher, **Dunya Shuman**, 2022  
Cañada College (Present affiliation: San Francisco State University)
- **Rotation students**, Department of Developmental Biology, Stanford University 2018-2021
- Undergraduate researcher, **Caitlin Dingwall**, University of Illinois at Urbana-Champaign (Present affiliation: MSTP, Washington University in St. Louis, MO) 2015-2016
- Teaching Assistant and Journal Club Discussion Leader, 2013  
**Developmental Biology (MCB 410)**

\*These programs are specifically designed to enhance diversity, inclusion, and equity in STEM fields

## INVITED PRESENTATIONS

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- Keystone Symposia: Neuroimmune Interactions 2023
- Ethel Browne Harvey Postdoctoral Seminar Series 2022
- International Society for Molecular Neurodegeneration 2022
- Aquatic Models of Human Disease conference, Marine Biological Laboratory 2022
- Department of Biology, University of San Francisco 2022
- Early Career Research in Neuroscience seminar series, Syracuse University 2022
- International Zebrafish Society, 17th Annual Conference 2022
- Zebrafish Disease Models Society, Neural Disorders Research Interest Group 2022
- Joint Society for Developmental Biology and International Society of Differentiation meeting 2016

- Symposium for International Research and Innovations in Schistosomiasis 2016
- North American Planarian Meeting 2015
- Germ Cell Meeting, Cold Spring Harbor Laboratory 2014

## COMMUNITY SERVICE AND VOLUNTEERING

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- **Invited speaker**, Paly Youth in Medicine Outreach, Palo Alto High School. A discussion-based presentation of my research and career to high schoolers for National Alzheimer’s Awareness Month. 2022
- **Research mentor**, [Community College Outreach Program](#), Department of Developmental Biology, Stanford University. A program designed to help community college students gain hands-on laboratory research experience with the aim of promoting equity, increasing talent, and fostering diversity in STEM. 2022
- **Leadership committee**, [Community College Outreach Program](#), Department of Developmental Biology, Stanford University. Organized a peer mentorship program and bootcamp focused on career development and transfer applications to 4-year colleges for local community college students. Acquired funds from local and private sponsors to support our interns. 2021-
- **Member and journal club leader**, [Stanford ADRC Justice, Equity, Diversity, and Inclusion \(JEDI\) committee](#). Led discussions on “Microaggressions in Science” and “Retention of women and BIPOC in Science”. 2021-
- **Organizer**, [Stanford Neuroimmunity Group Seminar Series](#). Recruited speakers and organized pizza hour for monthly talk series given by trainees with the aim of fostering collaborations and community building. 2019-2022
- **Instructor**, [zebrafish injection training camp](#), Departments of Developmental Biology and Genetics, Stanford University. Trained incoming graduate students to inject one-cell zebrafish embryos. 2018-2019
- **Mentor**, [ADVANCE program](#), [Stanford University](#). Guided incoming graduate students on how to critically read and evaluate a manuscript and present the principal findings to a broad audience. 2018-2019
- **Application Reviewer and Judge**, [Stanford Summer Research Institute-AMGEN Scholars Program](#), [Stanford University](#). Reviewed applications and provided feedback on the final presentations. 2018-2019
- **Instructor**, [Stanford Splash](#). Gave a talk on “Glia: More than just glue that holds the brain together” to high school students to help them learn about new topics. 2018
- **Outreach volunteer**, [California Academy of Sciences NightLife](#). Presented in Brain and Body NightLife to a broad audience in an interactive manner. 2018
- **Outreach volunteer**, [Science and Technology Summer Camp](#), [Orpheum Children’s Science Museum](#), [Urbana, IL](#). Performed activities with elementary school students including feeding and cutting planarians and viewing them through a microscope. 2012-2014
- **Member (Chair, 2012-2015)**, [Graduate Student Council](#), Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign. Organized departmental social events including annual picnics, monthly happy hours, and weekly coffee chats. 2011-2015
- **Member (Chair, 2012-2015)**, [Student Seminar Committee](#), Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign. Selected, invited, and hosted speakers to present at the department seminar series. 2011-2015

## TRAINING EXPERIENCE

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- BrightFocus Alzheimer's Fast Track Nov 2022
- Zebrafish Development and Genetics course, Marine Biological Laboratory 2019
- Institute of Genomic Biology commercialization intern at the Office of Technology Management, University of Illinois at Urbana-Champaign 2015-2016

## PROFESSIONAL MEMBERSHIPS

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- International Zebrafish Society 2021-
- Zebrafish Disease Models Society 2021-
- American Heart Association/American Stroke Association 2018-2020
- Society for Developmental Biology 2012-

## REFERENCES

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### **Phillip A. Newmark, Ph.D.**

*(Graduate thesis chair and advisor)*

Professor, University of Wisconsin-Madison  
Burnell R. Roberts Chair, Morgridge Institute for Research  
Investigator, Howard Hughes Medical Institute  
Email: [pnewmark@morgridge.org](mailto:pnewmark@morgridge.org)  
Phone: (608) 316-4105

### **Jie Chen, Ph.D.**

Professor, Cell and Developmental Biology  
University of Illinois at Urbana-Champaign  
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Phone: (217) 265-0674

### **William S. Talbot, Ph.D.**

*(Postdoctoral advisor)*

Professor, Developmental Biology  
Stanford University  
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### **Daniel F. Jarosz, Ph.D.**

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