Ameya Pranav Jalihal

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Cellular and Molecular Biology Program
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Education

Degree	GPA	Year
PhD Candidate, U of M, Ann Arbor, MI, USA	4.0 / 4.0	2015-present
B.Tech(Biotech.), SASTRA, Thanjavur, India	8.87 / 10	2011-2015

Awards and Fellowships

Graduate
Travel award, FORCE11 Scholarly Comm. Institute (FSCI), UCLA 2019
Honorable Mention, Poster Presentation, Ann. CMB Symposium 2018, 2019
Honorable mention, NSF GRFP, 2017
Conference Travel Grant, Rackham Graduate School, 2017
Pre-Candidate Fellowship, Rackham Graduate School, 2016
Bernard Maas Fellowship, 2015

Past
Khorana Scholarship, 2014
Indian Academy of Sciences Summer Fellowship, 2014
Department awards 2011-15; Dean's List, 2011, 2012

Research Interests

Single-molecule fluorescence microscopy, biophysics of RNA-protein machines inside cells.

Publications

1. **[In preparation]** Duran E., Schmidt A.S., *Jalihal, A.P.*, Welty R., Pitchiaya S. and Walter, N.G. Investigating nanomachines at single-molecule resolution in cell lysates. *WIRES RNA.*
2. **[In preparation]** *Jalihal, A.P.*, Pitchiaya S., Li H.,..., Walter, N.G. Higher-order assembly and 3D target search by RISC leads to efficient mRNA repression.
3. **[In press]** *Jalihal, A.P.*, Schmidt A.S., Gao G., Little S., Pitchiaya S. and Walter, N.G. Hyperosmotic phase-separation: Condensates beyond inclusions, granules and organelles. (2020) *JBC Reviews.*
4. *Jalihal, A.P.*, Xiao, L., Bawa, P., Jiang, X., Bedi, K., Cieslik, M., Ljungman, M., Chinnaiyan, A.M., Pitchiaya, S. and Walter, N.G. Multivalent proteins rapidly and reversibly phase-separate upon osmotic cell volume change. (2020) *Molecular Cell.* 79, 1-13 Highlighted as a Preview in Molecular Cell, September 2020.
5. Schmidt, A., Gao, G., Little, S.R., Jalihal, A.P., and Walter, N.G. (2020) Following the messenger: Recent innovations in live cell single molecule fluorescence imaging. *WIREs RNA*, e1587.
6. Pitchiaya, S., Mourao, M.D.A., *Jalihal, A.P.*, Xiao, L., Jiang, X., Chinnaiyan, A.M., Schnell, S. and Walter, N.G. (2019) Dynamic recruitment of single RNAs to processing bodies depends on RNA functionality. *Mol. Cell* 74, 521-533. Highlighted as a Preview in Molecular Cell.
7. *Jalihal, A.P.*, Lund, P.E. and Walter, N.G. (2019) Coming together: RNAs and proteins assemble under the single molecule fluorescence microscope. In *The RNA Worlds: New Tools for Deep Exploration*, pp. 451-470 (Ed. T.R. Cech, J.A. Steitz & J.F. Atkins), *Cold Spring Harb. Perspect. Biol.* 11, a032441.
8. Michelini F, *Jalihal, A.P.*, Francia, S., Meers, C., Neeb, Z. T., Rossiello, F., Gioia, U., Aguado, J., Luke, B., Biamonti, G., Nowacki, M., Storici, F., Carninci, P., Walter, N.G. and d'Adda di Fagagna, F. (2018) From "cellular" RNA to "smart" RNA: multiple roles of RNA in genome stability. *Chem. Rev.* 118, 4365-4403.
9. Ray JCJ, Wickersheim ML, *Jalihal, A.P.*, Adeshina, Y.O., Cooper, T.F., Balázsi, G. 2016. Cellular growth arrest and persistence from enzyme saturation. *PLOS Comp Biol* 12(3):e1004825

Presentations

[Poster] Biophysical Society Meeting, San Diego, CA 2020
"Macromolecular condensation facilitates largely 3D mRNA target search by microRNAs".
Authors: Jalihal AP, Li H, Pitchiaya S, Walter NG

[Participant] FORCE11 Scholarly Communication Institute, UCLA 2019

[Oral] Biophysical Society Meeting, Baltimore, MD 2019
"Multimeric proteins reversibly form condensates upon osmotic compression".
Authors: Jalihal AP, Pitchiaya S, Walter NG

[Oral] RNA Society Meeting, University of California, Berkeley 2018
"Intracellular single particle tracking of miRNA induced silencing complexes and mRNAs reveals sub-stoichiometric, transient binding and induced target aggregation". Authors: Jalihal AP, Li H, Walter NG

[Oral] RNA Society Meeting, Prague, Czech Republic 2017
"Microscopically visible liquid droplet P-bodies contribute minimally to miRNA mediated gene silencing".
Authors: Pitchiaya S, Jalihal AP, Max Denies, Mourao M, Schnell S, Walter NG

[Poster] Phase Separation Meeting, San Diego, CA 2017
"Characterizing hypertonicity induced P-Body aggregation".
Authors: Pitchiaya S, Jalihal AP, Max Denies, Walter NG

[Poster] Rustbelt RNA Meeting, Cleveland, OH 2016
"Microscopically visible P-bodies contribute minimally to miRNA-mediated gene silencing".
Authors: Pitchiaya S, Jalihal AP, Mourao M, Schnell S, Walter NG

Past Research Experiences

Undergraduate thesis project, University of Kansas Winter 2015
Design and implementation of synthetic genetic circuit in E. coli to study effect of bacterial cytosolic memory on growth phenotypes based on the Landauer Principle.
Mentor: Dr. Christian Ray.

Khorana Scholarship, Rice University Summer 2014
Computational modeling of the role of stochastic frequency modulated pulses of alternative sigma factor transcription in bacterial stress response.
Mentor: Dr. Oleg Igoshin.

IISER Mohali Summer Internship Summer 2013
Characterizing the functional role of cell adhesion molecules at neural synapses in learning and memory formation in C. elegans.
Mentor: Dr. Kavita Babu

Research Science Initiative-Chennai Summer 2010
Qualitative analysis of lipase producing bacteria.
Mentor Dr. P. Gautam

Activites

Seminars	Organized CMB Short Course, Fall 2019 and hosted Dr. Brenda Bass 2019
Mentorship	Mentored five rotators (PIBS) and two undergraduate researchers, 2017-19
Teaching	GSI, CDB530 F18; FFGSI CHEM125/126 W20
Service	Assisted with reviewing articles for PLOS ONE, Cell Reports
	Highly involved in recruiting graduate students for PIBS/CMB, 2017-20
Organizations	President (2017), Treasurer ('16-19), Assoc. of Multicultural Scientists, '16-19
	Member, Website and Recruitment Committees of CMB Program, '17-20
Outreach	Teaching Assistant for Computational Biology Summer Camp 2016, mirCore
	Science demonstrations volunteer at Michigan Science Center, Detroit, 2015-17
Past	Head of the Dramatics Club "The Studio" (script writing, direction) 2014-15
	Founded "Science Arattai", An undergraduate science forum, 2014