AYANTHI BHATTACHARYA

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EDUCATION

Ph.D. in Biotechnology
Tata Institute for Genetics and Society
Amrita University
2020 - Present

M.Sc. in Biochemistry
Savitribai Phule Pune University
2015-2017

B.Sc. in Chemistry
Fergusson College, Pune
2012-2015

EXPERTISE

- Handling -omics data
- Bioinformatics
- R
- ImageJ, 3D Slicer
- Confocal Microscopy
- Basic Molecular Biology
- Basic techniques in molecular biology, microbiology

BIO

I'm a currently a Ph.D. researcher hosted jointly by Tata Institute for Genetics and Society in Bangalore, India and Amrita University in Kerala, India. I am working on *Drosophila* neurodevelopment. My research interests mainly lie in developmental biology, behaviour and Evo-Devo. My pre-Ph.D. training has been in very different disciplines - Chemistry and then, Biochemistry. But my few years in the scientific community have taught me that the only thing that matters is the question we chase as researchers. Tools, techniques- these are accessories and can be picked up along the way.

In my spare time, I sing, draw/design, and write a little. This is if I'm not going crazy dancing to iconic Bollywood songs, with my two cats, Mitthu and Kiki!

CURRENT RESEARCH

Ph.D. Student | Tata Institute for Genetics and Society (TIGS), Bengaluru | Amrita University, Amritapuri
Oct 2020 - Present

- Supervised by Dr. Sonia Sen
- Projects
  - "Determining the possible mechanism by which spatial and temporal information is integrated within a neural stem cell in *Drosophila*"
  - "Determining a minimal code of spatial transcription factors that can uniquely identify a neural stem cell in *Drosophila*"
- Used Targeted DamID to determine chromatin occupancy and TF-binding *in vivo* in specific neural stem cells.
  - Bioinformatic analysis of genomics data.
  - Diving into exciting machine-learning approaches!
- Used *Drosophila* genetics to manipulate expression of relevant TFs and visulalized their effect on specific neural stem cell lineages by immunohistochemistry and imaging.
- Optimizing experimental pipeline for single-cell ATAC-seq and single-cell RNA-seq on isolated neural stem cell populations.

PREVIOUS RESEARCH EXPERIENCE

Research Assistant | Tata Institute for Genetics and Society (TIGS), Bengaluru

Aug 2019 - Sep 2020

- Project Title: "Validating Targeted DamID (TaDa) tools as reporters of TF occupancy and chromatin accessibility *in vivo."*
- Supervised by Dr. Sonia Sen
- Optimized TaDa experimental pipeline.
- Analyzed sequencing data, validated TaDa tools for two candidate transcription factors (TFs).
- Showed that the technique can reliably report TF-occupancy and chromatin accessibility *in vivo.*

Junior Research Fellow | Jawaharlal Nehru University (JNU), New Delhi

July 2018 - July 2019

- Project Title: "Development of optogenetic tools for deciphering the role of cGMP in ciliogenesis, maintenance of the ciliome and its importance in the ciliopathies".
- Supervised by Professor Suneel Kateriya at School of Biotechnology, JNU

M.Sc. Thesis Project | Savitribai Phule Pune University, Pune

Dec 2016 - Mar 2017

- Project Title: "Cloning and Expression of Amyotrophic Lateral Sclerosis associated proteins: FUS and TDP43"
- Joint supervision by Dr. Suvidya Ranade (Savitribai Phule Pune University) and Dr. Amitava Majumdar (National Centre for Cell Science)

Summer Research Fellow | Jawaharlal Nehru University (JNU), New Delhi

May 2016 - July 2016

- Selected for *Science Academies' Summer Research Fellowship Programme for Students and Teachers*, 2016, arranged by *Indian Academy of Sciences*, Bengaluru, *Indian National Science Academy*, New Delhi and The *National Academy of Sciences*, Allahabad.
- Project Title: "Comparative activity of different classes of antibiotics (using drop plate method)"
- Supervised by Professor Kasturi Mukhopadhyay at Jawaharlal Nehru University (JNU), New Delhi

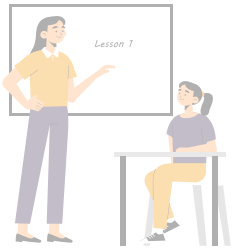
ORAL AND POSTER PRESENTATIONS

- **Poster presentation at Asia-Pacific *Drosophila* Research Conference (APDRC5)**, held in Pune, India. (2020) *Ayanthi Bhattacharya*, Chinjusha Suresh, Sudipta Ashe, Sonia Sen. Neuronal Diversity: Gooseberry at the heart of integrating spatial and temporal cues in neural stem cells.
- **Poster presentation at conference on Cellular Lineages and Development: From Single Cells to Landscapes, hosted by Simons Centre for Study of Living Machines,** held in Alleppey, Kerala, India. (2022) *Ayanthi Bhattacharya,* Hemalatha Rao, Sonia Sen. Neural stem cell-specific transcription factors specify lineage identity via modulating chromatin accessibility.
- **Poster presentation at conference on Stochasticity and Plasticity in Living Systems (SPLS), hosted by Simons Centre for Study of Living Machines,** held in Sakleshpur, Karnataka, India. (2023) *Ayanthi Bhattacharya*, Hemalatha Rao, Sonia Sen. Neural stem cell-specific transcription factors specify lineage identity via modulating chromatin accessibility.
- **Poster presentation at Indian *Drosophila* Research Conference,** hosted at IISER- Thiruvananthapuram, Kerala, India. (2023) *Ayanthi Bhattacharya,* Hemalatha Rao, Sonia Sen. Neural stem cell-specific transcription factors specify lineage identity via modulating chromatin accessibility.
- **Oral presentation at Annual Work Seminar**, hosted at NCBS, Bangalore, India. (2021, 2022, 2024) Ayanthi Bhattacharya, Hemalatha Rao, Sonia Sen. Neural stem cell-specific transcription factors specify lineage identity via modulating chromatin accessibility.

GRANTS AND AWARDS

- Government-conducted national competitive examinations to secure Ph.D. funding
  - All India Rank 52 in CSIR-NET June 2018 (~99.97th percentile)
  - All India Rank 102 in GATE- 2018 (~99th percentile)
- Recipient of the CSIR- National Chemical Laboratory scholarship for merit in M.Sc.
- Recipient of the Gunvant scholarship for merit in B.Sc.
- Awarded the Firodiya Classical Music Prizes by Fergusson College and Deccan Education Society

EXTRA-CURRICULAR



Teaching Assistant

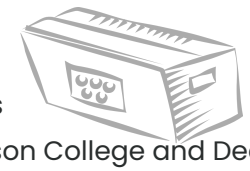
- Courses on
  - Developmental Biology
  - Basic Neurobiology

Coordinator/Volunteer

- **The Development and Behaviour Journal Club (DBJC)**
  - Help coordinate this student-run journal club across the Bangalore Life Science Cluster (Blisc) campus
  - Duties include advertising upcoming talks, engaging with the community.
  - we like writing little poems accompanying the work being presented. Some of this can be viewed on DBJC's X-space (previously Twitter).
- Helped organize **Science Outreach** events as part of Indian Society for Developmental Biology.

@dbjc_bdbc

Music



- Trained in Hindustani Classical Vocals for over 10 years
- Awarded the Firodiya Classical Music Prizes by Fergusson College and Deccan Education Society

Dance

- Trained in Manipuri dance form.

Theatre and Drama

- Active member of Stagecraft, the theatre group on campus.
- Performed, written and directed plays both for campus and for independent theatre groups.

Design

- A relatively new interest, I like designing logos and posters for various events we organize on campus.