

# IVY BHATTACHARYA

Research Assistant, Psychophysiology Lab

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## EDUCATION

- Master of Technology (M. Tech.) Biomedical Engineering  
Department of Biosciences and Bioengineering, IIT Bombay  
July, 2017 – July, 2019  
GPA: 8.89/10.00  
(Research Component: 9.48/10.00)

**Master's Thesis:** Bhattacharya, I. (2019) *Probing Cytoskeletal Changes in Neuronal Stem Cells due to Glucose Dysregulation*. (Master of Technology). Indian Institute of Technology Bombay, Powai. Mumbai. India. ([archived](#)) ([presentation](#))

- Conducted a literature review of cellular manifestations of diabetic neuropathy and formulated a project at the intersection of cellular biophysics and neuroscience based on identified gaps
- Planned and executed experiments involving mammalian cell culture, differentiation and gel preparation
- Performed trypsin deadhesion and live cell imaging for cellular contractility studies, Atomic Force Microscopy (AFM) for cellular stiffness studies
- Quantified intracellular activated myosin with pMLC staining to find underlying molecular mechanisms behind observed cellular dynamics

Advisor: Prof Shamik Sen ([Cellular Biophysics Laboratory](#))

- Bachelor of Technology (B. Tech.) Biotechnology  
School of Bio Sciences and Technology, VIT University, Vellore  
June, 2013 – May, 2017  
GPA: 7.49/10.00  
(Research Component: 10.00/10.00)

**Bachelor's Thesis:** Quantification of Trace Elements in Prostatomes, and its Correlation with Sperm Motility and Viability in Fertile and Infertile Human Male Smokers

Thesis research conducted at International Institute for Training and Research in Reproductive Health (IIRRH), Bangalore  
Jan, 2017 – May, 2017

- Performed cell fractionation, D-aspartic acid estimation using HPLC, zinc and magnesium estimation using Atomic Absorption Spectroscopy (AAS), and protein estimation on samples procured from smokers
- Analysed biochemical parameters: amount of total protein, triglyceride, calcium, potassium, zinc, magnesium and sodium in samples procured from smokers
- Conducted correlation analyses of the quantities of trace elements present, with sperm count, motility, and viability

Advisors: Prof T B Sridharan, Prof Ramesh Pathy M.

## ADDITIONAL RESEARCH EXPERIENCE

- Research Assistant  
Department of Mathematics, IIT Bombay  
August, 2019 – present  
**Project:** Control of Attention During Changing Reading Direction for a Single Word – The Case of Reading Numerals in Urdu

- Designed an experiment to discern the differences between bi-directional and unidirectional reading on the control of attention using EEG
- Currently recording fixation durations during reading of Urdu sentences containing numerals

Advisor: Prof Azizuddin Khan ([Psychophysiology Laboratory](#))

- Undergraduate Intern Dec, 2015 – Jan, 2016  
*Intas Biopharmaceuticals, Ahmedabad*
  - R & D: Production of protein: cloning heavy and light chain genes of monoclonal antibody (p29), transfection to CHO –S cells and screening by the DHFR selection system, followed by limiting dilution cloning
  - Quality Control: 360-degree performance appraisal of the quality control unit, with inputs to enhance efficiency

## PEER-REVIEWED PUBLICATION

- Singh, D., Bharti, D., **Bhattacharya, I.**, & Devi, S. C. (2018). *Epidemiological Survey of Subjects in the age group of 18 to 24 Years for Failed Secondary Response to Varicella Zoster Virus (VZV)*. Research Journal of Pharmacy and Technology, 11(7), 2817-2820.

## AWARDS & HONORS

- Ministry of Human Resource Development (MHRD) Graduate Teaching Assistantship, IIT Bombay, for the course: BB101 – Biology for Engineers, 2017 – 2019
- St. Gallen Wings of Excellence – Leader of Tomorrow Award and invited essayist, Beyond the End of Work – 48<sup>th</sup> St. Gallen Symposium, University of St. Gallen, Switzerland, 2 – 5 May, 2018
- Indian Institute of Science Center for Biosystems Science and Engineering BioEngineering Summer Training Fellowship, 2018
- Biotech Innovation Ignition Scholar, Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), funded by National Innovation Foundation (NIF), Department of Science and Technology (DST), Govt. of India, Dec, 9 – 29, 2017
- Undergraduate Oral Presentation Award for: **Bhattacharya I.**, Goswami C., Sen D. *Role of Delta Opioids in the Treatment of Parkinson's Disorder*, presented at XIII International Conference of Science, Engineering and Technology, VIT Vellore, May 2 – 3, 2016

## RESEARCH SKILLS

- Experimental skills: EEG, EMG, Eye-tracking, mammalian cell culture, microscopy (fluorescence, confocal, SEM, TEM, AFM), spectroscopy (UV-Vis, fluorescence, AAS), genetic engineering tools (DNA isolation, cloning and expression, electrophoresis, PCR, transformation, SDS PAGE), basic biochemical and biophysical assays, HPLC, fabrication of microfluidic devices using PDMS
- Programming: C/C++, Python, MATLAB, LabView
- Software: BESA Research, BESA Statistics, ImageJ, GraphPad Prism, OriginLab, SolidWorks

## SELECTED EXTRA-CURRICULAR AWARDS & EXPERIENCE

- Editorial Board Member, Insight, the official student media body of IIT Bombay, 2018 – 2019 ([flagship edition](#))
- Student Chair, Gender Sensitization Series, Gender Cell, IIT Bombay, Mar, 2018 – Mar, 2019
- Invited author, [Echoes 2.0](#), the annual literary magazine, IITB Litzkreig, Mar, 2019
- Invited essayist, TeamWork Arts Pvt. Ltd., ZEE Jaipur Literature Festival (JLF), January, 2018
- Co-founder, Spartans Association of Youth, a non-profit organization targeted at increasing the literacy rate in southern India, 2017
- Finalist, National Youth Poetry Slam (NYPS) 2016, Airplane Poetry Movement, Bangalore, in association with University of Illinois Chicago & College Unions Poetry Slam Invitational (CUPSI) September, 2016
- Invited short fiction writer, [Terribly Tiny Tales](#), 2014 – 2015
- Creative director and invited contributor, The Anonymous Writer project, New Delhi, 2014 – 2016
- Grant Awardee, *26 Jumpstraps: Twenty-six Thumb Rules of Entrepreneurial Bootstrapping*, published by FixNix Incorporation, 2014

## OTHER SKILLS

- Graduate certificate in the Indian classical dance form of Kathak – certified by Anart Foundation, Ahmedabad, India, 2011
- Languages
  - Native/Bilingual: Hindi, Bengali
  - Fluent: English
  - Conversant: Gujarati
  - Basic: Sanskrit, French, German