

Omkar Sahu

4th Year BS-MS Student
Department of Biological Sciences
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Objective

To be able to learn how the brain works and its various beautiful and terrifying aspects which has drawn so many towards it.

Education

- 2018–2023 **BS-MS Dual Degree (4th year) IISER Kolkata** CGPA : 9.27/10
SGPA : 9.5/10 (7th Semester)
- 2018 **Higher Senior Secondary D.B.M.S. English School** Jamshedpur Percentage – 94.25
Top 1% in India
- 2016 **Secondary D.B.M.S. English School** Jamshedpur Percentage – 97.4
Top 5% in India

Research Experience

- May-July 2021 **Summer Internship IISER KOLKATA** Kolkata
- *Mentor:* **Dr. Jayasri Das Sarma**, Professor, Department of Biology, IISER Kolkata.
 - *Topic:* **"Insights from Cx47 Protein Interactors: Understanding the role of Connexin 47 in CNS Demyelination"**
 - *Description:* Reading Project in order to characterize the different protein interactors which are involved in the homeostatic maintenance and expression of Connexin 47 gap junction protein in demyelinating and non demyelinating animal and human models.
- May-July 2021 **Summer Internship CENTRE FOR SCIENTIFIC AND INNOVATIVE RESEARCH (CSIR-CSIO)** Chandigarh
- *Mentor:* **Dr. Sunita Mehta**.
 - *Topic:* **"Review of the Invasive and Non Invasive Techniques like EEG for Diagnosis and Treatment of Neurodegenerative Diseases."**
 - *Description:* Reading Project in order to know about the frontiers of the various invasive and non invasive methods used for detection and subsequent treatment of the plethora of neurological and neurodegenerative diseases with special emphasis on the uses of EEG and electrophysiology.
- May-July 2020 **Reading Project IISER KOLKATA** Kolkata
- *Mentor:* **Dr. Arnab Gupta**, Associate Professor, Department of Biology, IISER Kolkata.
 - *Topic:* **"Players Involved in Interplay between mTOR and Copper in Wilson Disease Pathogenesis."**
 - *Description:* Reading Project in order to elucidate and understand the functional interplay between lysosomes and endolysosomes, ATP7B, Wilson Disease, mTOR pathway and nutrient recycling, copper and hepatocytes.
- Dec 2019 **Short Term Reading Project IISER KOLKATA** Kolkata
- *Mentor:* **Dr. Bidisha Sinha**, Associate Professor, Department of Biology, IISER Kolkata.
 - *Topic:* **"Optical Deformability as an Inherent Cell Marker for Testing Malignant Transformation and Metastatic Competence."**
 - *Description:* Reading Project in order to understand the cells' physiological and biophysical properties and how they can be used to detect early signs of cancer

May-July 2019 **Summer Internship** INDIAN INSTITUTE OF SCIENCE (IISc) Bangalore

- *Supervisor:* **Dr. Kartik Sunagar**, Assistant Professor, Evolutionary Venomics Lab (EVL), Department of Biology, IISc Bangalore
- Topic: "**Deciphering the Origin of Reptilian Venom System through A Molecular Phylogenetic Framework.**"
- Description: Worked through a **Bioinformatics** project in order to test the credibility of the Toxicofera hypothesis by building phylogenetic trees for various venom encoding genes and their physiological homologs to study their relationships.

Publications

Journal Article

- 2021 **Omkar Sahu, Sourodip Sengupta, Debina Bhattacharya, Grishma Kastle, Souvik Karmakar, Anirban Ganguly, Shankar Addya and Jayasri Das Sarma** Potential Immunomodulatory Properties of Biologically Active Components of Spices Against SARS-CoV-2 and Pan Beta Coronaviruses In *Frontiers in Cellular and Infection Microbiology*

Skills

Lab Equipment/Techniques: i)Gel Electrophoresis ii)Preparation of Competent Cells and Transformation iii)Polymerase Chain Reaction (PCR) iv)Photo Spectrometer v)Pipetting vi)Preparation of Bacterial Cell Culture vii)Thin Film Chromatography viii)ImageJ: Image Analysis ix) ELISA x)Western Blot

Programming Ability: Good programming skills in **Java and Python.**

Phylogenetic and Evolutionary Tree Building along with Blast Techniques: i)Blastp and Blastn and ii)PhyML iii)IQTree iv)Mr.Bayes

Hands-On Courses: Successfully completed the **Biostatistics Course** offered under **IISER Pune Short Term Courses** programme held at IISER Pune from December 28-30 2018.

Online Courses/MOOC

Completed the Course on **Introduction to Neuroscience** (UChicago) from Coursera.

Auditing the Course on **Machine Learning** (Stanford University) from Coursera.

Completed the course on **Human Behavioural Biology by Prof.Robert Sapolsky** on Stanford Online Courses.

Successfully Completed the Course on **Introduction to Psychology** (University of Toronto Scarborough) from Coursera.

Documentation : **LaTeX, Gnuplot, OriginPro, MS Word, MS Excel, MS PowerPoint** Well Versed with all kinds of basic computer environment documentation softwares.

Academic Achievements & Fellowships

Fellowships **Qualified KVPY:** Kishore Vaigyanik Protsahan Yojana KVPY-SX 2018 Rank **1045** (out of 6 lakh students) conducted by IISc, Bangalore and Funded by DST, Government of India.

Competitive Exams

NEET **Qualified NEET 2018 :** Placed in top 1% students of the country.

JEE **Qualified JEE MAINS 2018 :** Placed in top 5% students of the country.

NEST **Qualified NEST 2018 :** Placed in top 1% students of the country.

Olympiads **NCO 2018: Second Runners-Up in the National Creativity Olympiad** organized by The Institution of Engineers(TIE)-Tata Steel, Jamshedpur Chapter.

IEO 2014 :Secured State Rank 1-Jharkhand Region in the International English Olympiad (IEO) organized by Science Olympiad Foundation (SOF), India.

Extracurriculars

- 2019-Present **Class Representative** for the Batch of **18MS** at IISER Kolkata
- 2019 **First Runners up in Young Entrepreneurs Program** held at IISER Kolkata by the **E-CELL of IIT Bombay**.
- 2020 **Secretary of the Quiz Club and Organiser of GNQ-The General Open Quiz at Inquivesta, the annual science fest of IISER Kolkata**.
- National Science Camp-Vijyoshi Attended the **Vijyoshi 2018** held by KVPY at IISc, Bangalore as well as **Vijyoshi 2019** held by KVPY at IISER Kolkata.

Camps/Conferences/Talks

Attended talks by Eminent Professors including Nobel Laureates at IISER Kolkata: **Royal Society of Chemistry (RSC) Roadshow Society for Promotion of Optics and Photonics(SPIE) TALK Series, Indian Biophysical Society (IBS) Conference** and a few more.

Interests

Life and Medical Sciences: **Neurobiology and Genetics: (Especially Neurodegenerative and Psychological Diseases), Psychology, Cognition and Emotions.**
Computational Sciences

Hobbies/Extra Curriculars

- Curiosity Love Reading all kinds of Books and a Die Hard Fan of Quizzing.
- Sports Like to play Badminton, Cricket and Chess.
- Music Can play the tabla.

Referees

Dr. Jayasri Das Sarma
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Dr. Kartik Sunagar
*Assistant Professor, Center
of Biological Sciences*
IISc Bangalore
✉ durba.pal@iitrpr.ac.in

Dr. Sunita Mehta
*Scientist, Department of
Material Science and Sensors*
CSIR-CSIO
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