

**Postdoctoral Scholar**

Affiliated to: Department of Neurology,

Division of Neuroimmunology and Glial Biology,

University of California, San Francisco (UCSF)

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**Date of Birth:** January 31st, 1994

**Nationality:** Indian

**Academic Qualifications:**

University/Institution	Specialization	Degree & Year
University of Delhi	Biomedical Sciences	BSc(H) /2014
Indian Institute of Science Education and Research, Kolkata	Biological Sciences	Integrated Ph.D. (2014-2021)

**Research experiences:**

**1. Postdoctoral Scholar**

In Wilson and Pleasure laboratory at UCSF (January 2022 onwards), focusing on understanding the humoral responses in SARS-CoV2 induced neuroinflammation

**2. Ph.D**

As a part of the Integrated Ph.D. program, under the supervision of Professor Jayasri Das Sarma Neurovirology and Neuroimmunology lab, Indian Institute of Science Education and Research Kolkata, India. (August 2016 to November 2021)

**Project and Thesis Title:** Nexus between CD4+ T cell-microglia/macrophages in m-CoV-Mouse hepatitis Virus in- reduced neuroinflammation

Other Projects:

- Role of CD40-CD40L dyad in the bridging of the innate and adaptive immune response against m-CoV-RSA59 induced neuroinflammation
- Role of age-dependent immune maturation on m-CoV-RS59 induced neuroinflammatory demyelination
- iNOS regulates demyelination in RSA59 induced neuroinflammation.

**3. M.Sc Biological Sciences (Neuroimmunology)**

As a part of the Integrated Ph.D. program, under the supervision of Professor Jayasri Das Sarma Neurovirology and Neuroimmunology lab, Indian Institute of Science Education and Research Kolkata, India. (August 2015-July 2016)

**Project and Thesis Title:** Developing an in vitro neural cell culture model to understand the antibody directed neural cell death in systemic lupus erythematosus (SLE)

**4. B.Sc(H) Biomedical Sciences**

- Under the supervision of Dr. Gagan Dhawan, Associate Professor, Acharya Narendra Dev College, the University of Delhi in the Innovation & Entrepreneurship Development Centre (IEDC) sponsored by the Department of Science & Technology, Govt. of India. (May 2012-July 2013)

**Project and Thesis Title:** Use of open-source tools- integrating bioinformatics and cheminformatics to address complex problems in biology.

II. Under the supervision of Dr. Gagan Dhawan, Associate Professor, Acharya Narendra Dev College, the University of Delhi in ELITE– ‘Education in a Lively Innovative Training Environment’ Fellowship Programme

**Project and Thesis Title:** Virtual screening of potential inhibitors against Plasmodium falciparum protein kinase

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#### Publications:

1. **Chakravarty D#**, Saadi F#, Kundu S, Bose A, Khan R, Dine K, Kenyon LC, Shindler KS, Das Sarma J\*: CD4 deficiency causes poliomyelitis and axonal blebbing in murine coronavirus induced neuroinflammation. **Journal of Virology Jul 2020**, 94 (14) e00548-20; DOI: 10.1128/JVI.00548-20
2. **Chakravarty D.**, Das Sarma J. \*, “Murine- $\beta$ -coronavirus-induced neuropathogenesis sheds light on CNS pathobiology of SARS-CoV2”. **Journal of NeuroVirology 2021**; DOI: 10.1007/s13365-021-00945-5
3. Saadi F#, **Chakravarty D#**, Kumar S, Kamble M, Saha B, Shindler KS, Das Sarma J\*, “CD40-CD40Ligand is critical in bridging the innate and adaptive immune responses to m- CoV, Mouse Hepatitis Virus-induced neuroinflammatory demyelination”. PLOS Pathogens 17(12): e1010059. <https://doi.org/10.1371/journal.ppat.1010059>
4. Sharma M, **Chakravarty D**, Zalavadia A, Burrows A, Rayman P, Sharma N, Bergmann C, Sen G\*\*, Das Sarma J \*, Ifit2 regulates murine-coronavirus spread to the spinal cord white matter and its associated myelin pathology. (Manuscript under review)
5. **Chakravarty D**, Saadi F, Kumar S, Kamble M, Pal S, Mohammad I, Das Sarma J\*. “RSA59 induced neuro-immune modulation is age-specific” (manuscript under preparation)
6. Kamble M, Saadi F, **Chakravarty D**, Saha, B, Das Sarma J\*, “iNOS deficiency accelerates demyelination in MHV induced neuroinflammation” (manuscript under preparation)

**Book Chapter:** Saadi F#, **Chakravarty D#**, Kasle G, Das Sarma J\*, “Neurotropic virus-induced meningoencephalomyelitis”, in "Recent Advances in Encephalitis Research", ISBN 978-1-80355-223-1 (under press)

#### Technical Skills:

<b>Primary culture techniques</b>	Establishment of mixed glial culture from neonatal mouse brain, enrichment for astrocyte and microglia culture.
<b>In vivo experimental techniques</b>	Intraperitoneal, Intravitreal, Intracranial injections, Intranasal inoculation in mice, mice dissection, tissue harvesting, tissue processing, tissue embedding, paraffin and cryo-sectioning, protein, and RNA isolation from organs.
<b>Histopathology</b>	Immunohistochemistry, Hematoxylin, and Eosin staining, LFB staining, silver staining, Immunofluorescence on tissues
<b>Cell and molecular biology</b>	Cell culture, murine coronavirus infection, virus plaque assay, multiplex Flow cytometry, immunofluorescence, protein and RNA extraction, cDNA synthesis, western blot, real-time PCR.
<b>Biostatistics</b>	SD, SEM, two groups and three group comparisons ANOVA
<b>Bioinformatics</b>	BLAST, Pymol, Chimera, Autodock
<b>Software Skills</b>	Adobe Photoshop, Microsoft office, GraphPad Prism8, FlowJo, Adobe illustrator, ImageJ, EndNote, Imagescope.

**Teaching Experience:**

**2019 (January-April):** Mice dissection, Histopathology, and Immunohistochemistry practical course for BS-MS 4th year students and Integrated Ph.D. (Masters level) students at IISER Kolkata, Department of Biological Sciences

**2018 (January-April):** Neurobiology Theory course for BS-MS 4th year students and Integrated Ph.D. (Masters level) students at IISER Kolkata, Department of Biological Sciences

**Professional Recognition/ Award/ Prize/ Certificate, Fellowship**

1. Senior Research Fellow, Ministry of Human Resource Development, Govt. of India (August 2018-till now)
2. Junior Research Fellow, Ministry of Human Resource Development, Govt. of India (August 2016-July 2018)
3. Received full scholarship registration waiver to attend and present poster at Keystone Symposia's eSymposia on Neuroimmune Interactions in Health and Disease, 2021.
4. Received the "AAI Laboratory Travel grant" to attend 'IMMUNOLOGY, 2019' at San Diego, California.
5. 3rd Best Poster award at Department Day, 2018, Department of Biological Sciences, IISER-Kolkata.
6. Sutti- Nag-Best Poster Award, 2017 at XXXV Annual Conference of Indian Academy of Neurosciences and International
7. Conference on Translational Neurosciences and its Application in Protection of Mental Health, Cuttack
8. Cleared TIFR JGEEBILS 2014- National level entrance organized by TIFR and NCBS for Selection in Integrated PhD, after B.Sc (H). Selected for direct interviews at all MHRD institutes.
9. University Rank holder (3rd Position) in B.Sc (H) Biomedical Sciences, for year 2011-2014.
10. 1st rank in B.Sc (H) Biomedical science, Acharya Narendra Dev College, University of Delhi

**Summer students/ MS project fellows mentored during Ph.D. tenure:**

Master's students- 2

Summer project students- 6

**Selected Conferences and Workshops attended:**

1. Poster Presentation at **Keystone Symposia's** eSymposia on NeuroImmune Interactions in Health and Disease, 2021
2. Poster Presentation at **XXXVIII Annual Conference of Indian Academy of Neuroscience IAN international e-conference on Basic and Clinical Neurosciences: Bridging the Gaps**, organized by University of Hyderabad, and the National Institute of Pharmaceutical Education and Research (NIPER), Hyderabad, October 2020.
3. Oral Flash Talk at **IUSSTF Indo-US Symposium on COVID Biology 2020**, organized by IISER-Kolkata, and IISC-Bangalore, India in coordination with University of Pennsylvania and the University of Colorado, USA.
4. Oral Presentation at **IUSSTF Indo-US Symposium on New Insights into the Inflammation, Immunity, and Pathobiology of Diseases**, organized by IISER-Kolkata IISC-Bangalore, India in coordination with University of Pennsylvania and University of Colorado, USA, December 2019.
5. Poster Presentation at the **American Association of Immunologists (AAI) International conference IMMUNOLOGY 2019** at San Diego, California, May 2019.
6. Poster Presentation at **"XLII All India Cell Biology Conference and 2nd International Conference on Trends in Cell and Molecular Biology in BITS Pilani K K Birla Goa Campus, Goa 2018**, organized by Indian society of cell biology (ISCB).

7. Participated in “Workshop on advanced bioanalytical methods and applications & **Overview of Outreach activities in advanced microbiology education & Teaching, in association with American Society of Microbiology (ASM) 2018**” organized by IISER-Kolkata in collaboration with American Society of Microbiology.
8. Poster Presentation at “**International Conference on Translational Neurosciences and its Application in Protection of Mental Health**”, XXXV Annual Conference of Indian Academy of Neurosciences 2017, Cuttack.
9. Poster Presentation at ‘**National conference on Redefining Science Teaching: Future of Education**’ organized by Acharya Narendra Dev College, Delhi University, 2013.
10. Got selected to participate in **6th National Science Conclave, 2013 at IIT – Allahabad**, organized by Department of Science Technology, India. An opportunity to interact with Noble Laureates like Prof. Walter Kohn, Prof. Ivar Giaever, Prof. Douglas Osheroff, Prof. Rositsa Bateson, Prof. Richard Roberts, Prof. Harold Kroto, and C. Tannaudji with Prof. Joseph Sifakis, the Turing Awardee.

**Additional courses:**

1. “Certificate course in bioinformatics & in silico drug discovery” organized by Acharya Narendra Dev College & Bhaskaracharya College, Delhi University, 2013
2. The Ohio State University Video Conferencing Flip-classes, Topic-Genomics, Proteomics & Bioinformatics, 2013.

**Professional References:**

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