

# INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA

## CURRICULUM VITAE

**Jayasri Das Sarma, PhD**

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Indian Institute of Science Education and Research Kolkata  
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Adjunct Associate Professor, Department of Ophthalmology  
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### Education

1995	PhD in Immunology/Chemistry, Jadavpur University, India
1991	M. Phil. Environmental Science, Calcutta University, India
1991	M.Sc. in Zoology, Calcutta University, India
1990	B. Ed in Education, Calcutta University, India

### Academic Appointments and Professional positions

Mar, 2015-Present	Professor, Department of Biological Sciences, Indian Institute of Science Education and Research Kolkata (IISER-K)
Oct, 2008-Feb, 2015	Associate Professor, Department of Biological Sciences, Institute of Science Education and Research Kolkata (IISER-K)
Mar, 2013-Present	Adjunct Associate Professor, Department of Ophthalmology, University of Pennsylvania, Philadelphia, USA
Oct, 2012–Present	Adjunct Faculty, Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, USA
Oct, 2008– Sep, 2012	Adjunct Faculty, Department of Neurology, Thomas Jefferson University, Philadelphia, USA
2004–2008	Assistant Professor, Department of Neurology, Thomas Jefferson University, Philadelphia, USA
2003-2004	Senior Research Investigator, Department of Microbiology, University of Pennsylvania, Philadelphia, USA
2001-2003	Research Associate, Institute for Environmental Medicine and Department of Physiology, University of Pennsylvania, Philadelphia, USA
1999-2001	Post Doctoral Researcher, Institute for Environmental Sciences and Department of Physiology, University of Pennsylvania, USA
1997-1998	Post Doctoral Fellow, Department of Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, USA

1996- 1997                      Research Associate, Rockefeller Foundation Program, MRDG,  
Indian Institute of Science, Bangalore, India

### **Honors, Special Recognitions and Awards**

2018                      Host for ASM-IUSSTF Indo-US Professorship Award of  
Professor Sharon Gusky from North Western Connecticut  
Community College, CT, USA

2018                      Elected Fellow of West Bengal Academy of Science  
and Technology (WAST)

2018                      Institute appreciation for contribution to Science and  
Administration the occasion of Science Day

2017                      ASMCUE Leadership Award for International Educators  
Sponsored by the American Society for Microbiology (ASM)

2016                      ASMCUE Leadership Award for International Educators  
Sponsored by the American Society for Microbiology (ASM)

2013                      ASM-IUSSTF Indo-US International Professorship Award to  
develop a bi-lateral research relationship between India and  
the US

2007                      Science Horizon Research Internships-Mentor Award Bryn  
Mawr College, USA

2007                      Lind back Distinguished Teaching Award/Junior Faculty  
Career, Enhancement Award, USA

2002                      Dale McFarlin Award, National Multiple Sclerosis Society,  
USA

2001                      Advanced Postdoctoral Fellowship Award, National Multiple  
Sclerosis Society, USA

### **Editorial Board Member**

2011 -Present                      Frontiers in Neuro-ophthalmology

2014 - Present                      Journal of Ophthalmology

Jan, 2016 - Present                      Scientific report, NPG group

### **Review and Referee Work**

Journal of Immunology  
BMC Neurology  
Neuroscience  
Journal of Neuroinflammation  
Journal of Biosciences  
PLOS One  
Nanoscale

## **Grant Reviewer**

Department of Biotechnology (DBT) Neuroscience, India  
Multiple Sclerosis Research Australia, External Grant Reviewer  
ELA Research Foundation  
International Scientific Community to submit leukodystrophies and myelin repair

## **National Level Selection Committee Member**

2018-present	Member of taskforce on neuroscience (DBT)
2010-2013	SRF/RA selection committee, Council of Scientific and Industrial Research (CSIR), India
2009-2012	KVPY Special projects Screening Committee Member, India
2011-Present	Fulbright-Nehru Visiting Lecture Fellowship USIEF Fulbright Reviewer USIEF
2012	Visva Bharati Faculty Selection Committee member

## **Scientific Advisory Committee Member**

2010-Present	IPGMRI, Biomedical Genomics Center (BMGC), India
2005 – 2008	Member/Chair of the Graduate (PhD) Student's Comprehensive Exam Committee Thomas Jefferson University, Philadelphia, USA

## **Institutional Committee Member (IISER-Kolkata)**

2014-Present	Senate Member of IISER-Kolkata
2008-2012	
2014-Present	Convener & Chairperson,
2010-2013	Institutional Animal Ethical Committee (IAEC)
2014-Present	Chairperson
2010-2013	Institutional Bio-safety Committee
2014-Present	Internal Complaints Committee Chairperson
2010-Present	Department Faculty Advisory Committee Department of Biological Sciences

## **Teaching Experience**

<b>Kolkata</b>	<b><u>Indian Institute of Science Education and Research-Kolkata</u></b>
2008-Present	Neurobiology (Theory), Animal Dissection, Histology, Immunohistochemistry, Immunofluorescence (Laboratory), Molecular Cloning (Laboratory)
2009-2014	Immunology (Theory)

Philadelphia  
2004-2008

**Jefferson Medical College (Graduate courses)**

First year Medical and Graduate Neuroscience  
Laboratory Teaching  
Leading Clinical conference problems with 1st year medical student

**Student Strength**

PhD students	:	7 graduated and 3 ongoing
Integrated PhD students	:	6 graduated after completion of MS and 7 continuing into PhD
Masters project students	:	13 graduated, 6 ongoing
Summer project students supervised	:	26 from intra- & 20 from inter-Institution

**Talks delivered**

**Conference Talks (National and International)**

June 13-17, 2020	selected for platform presentation on "CD4+ T cells crosstalk with microglia/macrophage provides protection against mouse hepatitis virus induced neuroinflammatory demyelination", <b>American Society for Virology 39th Annual Meeting</b> , Colorado State University in Fort Collins, Colorado
May 08 -12, 2020	selected for platform presentation on "Nexus between CNS resident microglia and migrating peripheral T cells pave the way for host immunity against neurotropic virus infection", international conference " <b>IMMUNOLOGY 2020</b> ", Honolulu, Hawaii, USA
March 31- April 6, 2020	selected for oral presentation on "Functional regulation of gap junction intercellular communication in viral induced neuroinflammation", 26 <sup>th</sup> <b>Society of Neuroimmune Pharmacology (SNIP)</b> , Delhi, India
March 6-7, 2020	"Need of the hour to train minds and not the hands of women in science and education"- " <b>Women in Science Education</b> ", <b>NIMHANS</b> , Bangalore, India
November 30, 2019	"Molecular and cellular pathogenesis of mouse hepatitis virus induced neuro-inflammatory demyelination", <b>Neuroupdate 2019, CSIR-IICB</b> , Kolkata, India
October 24-26, 2019	"International conference on Neurological disorders and Therapeutics (ICNDT) – 2019", <b>NIPER</b> , Ahmadabad, India

- July 20-24, 2019 “A proline insertion-deletion in mouse hepatitis virus spike glycoprotein fusion peptide strongly alters neuropathogenesis”, 38th Annual Meeting **University of Minnesota, Minneapolis**
- May 9-13, 2019 “Regulatory role of Ifit2 in mouse hepatitis virus-induced neuroinflammation”, IMMUNOLOGY 2019, **San Diego, California, USA**
- October 29-31, 2017 “A novel role of gap junction intracellular communication in Gliosis in a model of viral-induced neuro-inflammatory demyelination”, **Indian Academy of Neuroscience (IAN) 2017 and International Conference on “Translational Neurosciences and its Application in Protection in Mental health”**, Ravenshaw University, Cuttack, India
- December 18-20, 2016 “Neuroglial gap junctional intercellular communication in Neuroinflammation”, **3rd International Meet on Advanced Studies in Cell Signaling Network (CeSiN 2016)**, Indian Institute of Chemical Biology (IICB), Jadavpur, India
- December 9-11, 2016 “Bridging innate and adaptive immune response in the induction of neuroinflammatory Demyelination”, **National Conference on Recent Trends in Neurological and Psychiatric Research, Society for Neurochemistry India (SNCI)**, Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India
- November 14-17, 2016 “Viral-neural cell interphase and neuroimmune modulation in demyelination”, **Indo-US Symposium on central Nervous System Viral Infection and its Therapy**, Sinclair’s Retreat Dooars, Chalsa Hilltop, Jalpaiguri, West Bengal, India
- October 19-21, 2016 “Neuro-immune crosstalk in virus induced central nervous system demyelination and axonal loss”, **Indian Academy of Neuroscience 34th Annual Meeting, Molecules to Mind**, National Brain Research Centre, Maneswar, Haryana
- September 20, 2014 “Immunopathogenesis of viral induced chronic inflammatory demyelination in an experimental animal model”, **Research Workshop on Diagnostic and Therapeutic Immunology**, College of medicine and JNM Hospital, WBUHS, Kalyani, Nadia
- February 23-25, 2014 “Mechanism of direct viral induced demyelination”, **Indo-US Symposium on Viral Infections of the Nervous System**,

Hyatt Regency, Gurgaon, New Delhi, India

- November 9-11, 2013 “Innate neuroimmune system upon which adaptive immunity is built”, **Brain Plasticity and Neurological disorder**, Ravenshaw University, Cuttack, India
- November 3, 2012 “Current trends: Challenges and opportunities for women scientists in India”, **2012 WVN SYMPOSIUM “Opportunities and Challenges for Women Scientists in India”**, NIMHANS, Bangalore, India
- November 1-2, 2012 “Mechanisms Underlying Inflammation in Neurodegeneration” **Satellite Symposium-Indian Academy of Neurosciences, Bangalore Chapter “Neurobiology of cognition”**, Convention Centre, NIMHANS, Bangalore, India
- October 12-13, 2012 “Delineation of adaptive and non-adaptive immune of mechanisms demyelination in experimental animal models of Multiple Sclerosis”, **5th Annual Meeting of the Cytometry Society**, Centre for Research in Nanoscience & Nanotechnology, University of Calcutta, Kolkata, India
- December 16-18, 2011 “Neural Cell Biology of Viral Induced Concomitant Axonal and Loss and Demyelination”, **XXXV ALL India Cell Biology Conference**, NISER, Bhubaneswar, India
- December 16-19, 2009 “Immunosuppression or Neuroprotection: Multiple approaches to Autoimmune Disease Multiple Sclerosis”, **36th Annual Conference of Indian Immunology Society/ IMMUNOCON-2009**, NIMHANS, Bangalore, India

### **Invited talks (National and International Institutes/Universities)**

- February 3<sup>rd</sup>, 2020 “Interaction between CNS resident microglia and migrating peripheral T cells pave the way for host immunity against neurotropic virus infection”, **IISER-Mohali**, Mohali, India
- November 30, 2019 “Molecular and cellular pathogenesis of mouse hepatitis virus induced neuro-inflammatory demyelination”, Neuroupdate 2019, **CSIR-IICB**, Kolkata, India
- October 24-26, 2019 “International conference on Neurological disorders and Therapeutics (ICNDT) – 2019”, **NIPER**, Ahmadabad, India
- 3<sup>rd</sup> October, 2019 “Regulatory role of Interferon-induced protein Ifit2 in

developing host immunity against CNS viral infection”, ID Research in Progress Seminar, **School of Medicine, Division of Infectious Diseases, University of Colorado Anschutz Medical Campus**

- April 17, 2019 “Gap junction protein Connexin 43/47 axis in the perspective of mouse hepatitis virus induced demyelination” Wednesday, **Emory University School of Medicine**
- 2019 “Ifit2, an interferon-induced protein, attenuates neuropathy in coronavirus-infected mice by promoting microglial activation and leukocyte migration to the central nervous system”, **Lecture series on Infection and Immunity**, Department of inflammation and immunity, **Cleveland Clinic**, OH 44195, USA
- February, 2019 “Neuroinflammation: An amplifier of virus induced Demyelination pathology”, at Department day, **IISER Kolkata**
- December 4, 2018, “Innate and adaptive immune regulation during chronic Mouse Hepatitis Virus infection”, RC2-5th floor, **Colorado**
- October 26, 2018 “Immunoregulatory function of CD40 in mouse hepatitis virus-induced neuropathogenesis”, **University of Pennsylvania, Philadelphia, USA**
- March 11, 2018 “A novel role of gap junction intercellular communication in Gliosis: Studies in a viral model of demyelination”, **National Institute of Pharmaceutical Education and Research (NIPER)**, Ahmadabad, India
- July 25, 2017 “Remodeling of Central Nervous System Gap Junction Intercellular Communication in viral induced Gliopathy”, Department of Neurology, **University of Colorado, Denver, Colorado, USA**
- July 13, 2017 “A novel role of Gap Junction Intercellular Communication in Gliosis: Study in a model of virus-induced demyelination”, Department of Immunology, **Lerner Research Institute, Cleveland, Ohio, USA**
- March 16, 2017 “Gliopathy are the early events in mouse hepatitis virus induced demyelination and axonal loss”, **National Institute of Health/National Institute of Allergy and Infectious**

**Diseases (NIH/NIAID), Rocky Mountain Laboratories,  
Hamilton, Montana, USA**

- February 15, 2017 “Gliopathy in viral induced demyelination”, **Centre for Cellular and Molecular Biology** (CCMB), Hyderabad, India
- June 3, 2013 “Neural cell biology of a viral induced demyelination and Axonal loss in an experimental animal Model”, **Focused Multiple Sclerosis Group Colloquium Series, University of Pennsylvania, Philadelphia, USA**
- March 23, 2010 “Understanding complex mechanisms of neuro-inflammatory demyelinating disease Multiple Sclerosis”, **Seminar Series of the Centre for Infection and Immunity in the School of Medicine, Dentistry and Biomedical Science, Queen’s University Belfast, North Ireland**
- November 2009 “Complexity in human neuroinflammatory demyelinating disease multiple sclerosis: The advent of System Biology”, **Indian Institute of Mathematical Science**, Chennai, India
- November 2009 “Deciphering complex mechanisms of neuroinflammatory demyelinating disease multiple sclerosis in an experimental mouse model”, **Shankar Netralaya, Ophthalmology Research and development**, Chennai, India
- September 2, 2009 “Mechanisms of demyelination in a viral model of multiple sclerosis”, **Neurology Grand Round, University of Colorado, Denver School of Medicine, Aurora, CO, USA**
- May 7, 2009 “Mouse hepatitis virus infection in mice—an experimental model to understand the molecular and cellular of demyelination and axonal loss in multiple sclerosis”, **Society for Neuroscience-Bangalore chapter seminar, NIMHANS**, Bangalore, India

**Workshops /Conferences Organized**

- December 3-8, 2019 **Indo-US Symposium on New Insights into the Inflammation, Immunity, and Pathobiology of Diseases**, Sinclairs Bayview, Portblair, Andaman Islands, India, in collaboration with IISc India,

University of Colorado and University of Pennsylvania,  
USA

- February 24-March 1, 2018      **Bioanalytical Workshop on advanced Bioanalytical methods and applications**, Lemon Tree, Gangtok in collaboration with IISER-K and American Society for microbiology (ASM)
- November 13-17, 2016      **Indo-US Symposium on Central Nervous System Viral Infection and its Therapy**, Sinclair's Retreat, Jalpaiguri, West Bengal, India in collaboration with IISER-Kolkata, Banaras Hindu University, India and University of Iowa, USA
- February 23-25, 2014      **Indo-US Symposium on Viral Infections of the Nervous System**, Hyatt, Gurgaon, New Delhi in collaboration with National Brain Research Centre, India and University of Colorado, USA and University of California, San Francisco, USA
- November 3, 2012      **WWN Symposium; "Opportunities and Challenges for Women Scientists in India"**, NIMHANS, Bangalore
- November 1-2, 2012      **Satellite Symposium; Indian Academy of Neurosciences- Bangalore Chapter "Neurobiology of cognition"**, NIMHANS, Bangalore with NIMHANS, Bangalore.
- July 24-26, 2012      **CeSiN 2012 India - 1st International meet on Cell Signaling & Network**, Indian Institute of Chemical Biology in collaboration with Indian Institute of Chemical Biology, Jadavpur, Kolkata.

## **Grant Awards**

### **Active/Current Funding**

#### **Department of Biotechnology, India**

- Title of the project      : **"Multi- Dimensional Research to Enable Systems Medicine: Acceleration using a Cluster Approach" at Kalyani, West Bengal (SyMeC)**
- Tenure                      : 4 years
- Role in the grant        : Coordinator

Start Date : 04/04/17  
Total Direct Cost : Rs. 1,045.65 Cr

### **Department of Biotechnology, India**

Title of the project : **“Developing an in vitro neural cell culture model to understand the mechanism of neural cell death in Systemic Lupus Erythemotatus (SLE)”**  
Tenure : 3 years  
Role in the grant : Principal Investigator  
Start Date : 05/06/2018  
Total Direct Cost : Rs. 52, 53,000

### **Department of Biotechnology, India**

Title of the project : **“Neuroprotective function of CD40 in Mouse Hepatitis Virus induced central nervous system infection”**  
Tenure : 3 years  
Role in the grant : Principal Investigator  
Start Date : 01/08/2017  
Total Direct Cost : Rs. 58, 00,000

### **Council of Scientific And Industrial Research**

Title of the project : **“Impaired Quality control of Connexin43 and Decreased Astrocyte Gap junctional Communication in a Mouse Hepatitis Virus Induced Model of Human Neurological Disease: Multiple Sclerosis”**  
Tenure : 2 years  
Start date : 16/05/2019  
1st year cost : Rs. 8, 49,833

### **Krish Biotech Research Private Limited (Consultancy)**

Providing training and services to KBRPL in tissue culture, histopathology, flow cytometry, immunohistochemistry and fluorescent microscopy and image processing

### **Inactive/Prior Funding**

### **Department of Biotechnology, India**

Title of the project : **“Understanding the mechanism of viral induced axonal loss and demyelination in an experimental animal model”**  
Role in the grant : Principal Investigator  
Start Date : 09/09/2011

Total Direct Cost : Rs. 63, 880, 00

**Department of Biotechnology, India**

Title of the project : **“Development of a unique animal model to understand the etiology of human central nervous system autoimmune disease multiple sclerosis (MS)”**  
Grant Number : BT/PR4530/MED/30/715/2012  
Role in the grant : Principal Investigator  
Start Date : 21/03/2012  
Total Direct Cost : Rs. 29, 94,012

**Council for Scientific and Industrial Research, India**

Title of the Project : **“Understanding the cellular consequences of axonal loss and demyelination in viral infection using in vitro myelination system”**  
Role in the grant : Principal Investigator  
Co-PI : Raja Shunmugam, PhD  
Consultant : Lawrence, C Kenyon, MD, PhD  
Total Direct Cost : Rs 15, 00,000.00 for 2 years (2011)

**National Multiple Sclerosis Society**

Title of the project : **“Direct oligodendrocyte infection by mouse hepatitis virus mediates demyelination”**  
Role in the grant : Principal Investigator  
Total Direct cost : \$469,095 for 3 years  
Total indirect Cost : \$42,645/3 years (2010-2014)

**The Mary Elizabeth Groff Foundation**

Title of the project : **“Viral induced demyelination and oligodendroglipathy”**  
Role in the grant : Principal Investigator  
Total Direct Cost : \$70,000 for 2years  
No indirect cost (2010-2012).

**HI-Media (Consultancy)**

Title of the grant : **“Validation of differentiated neural cells in culture”**  
Bi- Lateral Academia-Industry Research Grant, 2014-2015  
Total Direct Cost : Rs. 10, 00,000

## **Bibliography**

\*Corresponding author

1. Chakravarty, D., Saadi, F., Kundu, S., Bose, A., Khan, R.S., Dine, K., Kenyon, L.C., Shindler, K.S., **Das Sarma, J. \***, "CD4 deficiency causes poliomyelitis and axonal blebbing in murine coronavirus induced neuroinflammation", *Journal of Virology*, May 2020
2. Sarkar, L., Putchala, R.K., Safiriyu, A.A., **Das Sarma, J.\***, "Azadirachta indica A. Juss ameliorates Mouse Hepatitis virus-induced neuroinflammatory demyelination by modulating cell-to-cell fusion in an experimental animal model of Multiple Sclerosis", *Frontiers in Cellular Neuroscience*, April 2020, *doi: 10.3389/fncel.2020.00116*
3. Rout, S.S., Singh, M., Shindler, K.S., **Das Sarma, J.\***, "One proline deletion in the fusion peptide of neurotropic mouse hepatitis virus (MHV) restricts retrograde axonal transport and neurodegeneration", *Journal of Biological Chemistry*, April 2020, *doi: 10.1074/jbc.RA119.011918*
4. Singh, M.#, Kishore, A.#, Maity, D., Sunanda, P., Krishnarjuna, B., Vappala, S., Raghothama, S., Kenyon, L.C., Pal, D.\*, and **Das Sarma, J.\***, "A proline insertion-deletion in the spike glycoprotein fusion peptide of mouse hepatitis virus strongly alters neuropathology", *Journal of Biological Chemistry* 294(20):8064-8087, 2019; *doi: 10.1074/jbc.RA118.004418*
5. Singh, M., Khan, R.S., Dine, K., **Das Sarma, J.\*** and Shindler, K.S.\*, "Intracranial Inoculation Is More Potent Than Intranasal Inoculation for Inducing Optic Neuritis in the Mouse Hepatitis Virus-Induced Model of Multiple Sclerosis", *Frontiers in Cellular and Infection Microbiology* 4;8:311, 2018; *doi: 10.3389/fcimb.2018.00311*
6. Hussain, A., Das Sarma, S., Babu, S., Pal, D., **Das Sarma, J.\***, "Interaction of arsenic with gap junction protein connexin 43 alters gap junctional intercellular communication", *Biochimica et Biophysica Acta - Molecular Cell Research* 1865(10):1423-1436, 2018; *doi: 10.1016/j.bbamcr.2018.07.014*
7. Bose, A., Basu, R., Maulik, M., **Das Sarma, J.\***, "Loss of Cx43-mediated functional Gap junction communication in meningeal fibroblasts following Mouse Hepatitis virus infection", *Molecular Neurobiology* 55(8):6558-6571, 2018; *doi: 10.1007/s12035-017-0861-3*
8. Bhattacharya, S., Mukherjee, S., **Das Sarma, J.**, Shunmugam R. A.\*, "Metal assisted self assembled rod like nanostructures for effective cellular internalization", *Polymer Chemistry* 9, 2157-2165, 2018; *doi: 10.1039/C7PY01893B*

9. Basu, R., Bose, A., Thomas, D., **Das Sarma, J.\***, "Microtubule-assisted altered trafficking of astrocytic gap junction protein connexin 43 is associated with depletion of connexin 47 during mouse hepatitis virus infection", *Journal of Biological Chemistry* 292(36):14747-14763, 2017; doi: 10.1074/jbc.m117.786491
10. Das Sarma, S., Hussain, A., **Das Sarma, J.\***, "Advances made in Understanding the Effects of Arsenic Exposure on Humans", *Current Science* 112(10):2008, 2017; doi: 10.18520/cs/v112/i10/2008-2015
11. Sadasivan, J., Singh, M., **Das Sarma, J.\***, "Cytoplasmic tail of coronavirus spike protein has intracellular targeting signals", *Journal of Biosciences* 42(2):231-244, 2017; doi: 10.1007/s12038-017-9676-7 (**Cover page illustration**)
12. Biswas, K., Chatterjee, D., Addya, S., Khan, R.S., Kenyon, L.C., Choe, A., Cohrs, R.J., Shindler, K.S., **Das Sarma, J.\***, "Demyelinating strain of mouse hepatitis virus infection bridging innate and adaptive immune response in the induction of demyelination", *Clinical Immunology* 170:9-19, 2016; doi: 10.1016/j.clim.2016.07.004
13. Basu, R., Banerjee, K., Bose, A., **Das Sarma, J.\***, "Mouse Hepatitis virus infection remodels Connexin43-mediated Gap junction intercellular communication in vitro and in vivo", *Journal of Virology* 90(5):2586-2599, 2015; doi: 10.1128/jvi.02420-15
14. Kenyon, L.C., Biswas, K., Shindler, K.S., Nabar, M., Stout, M., Hingley, S.T., Grinspan, J.B. **Das Sarma, J.\***, "Gliopathy of demyelinating and non-demyelinating strains of Mouse Hepatitis virus", *Frontiers in Cellular Neuroscience* 9:488, 2015; doi: 10.3389/fncel.2015.00488
15. Chatterjee, D., Addya, S., Khan, R.S., Kenyon, L.C., Choe, A., Cohrs, R.J., Shindler, K.S., **Das Sarma, J.\***, "Mouse Hepatitis virus Infection upregulates genes involved in innate immune responses", *PLoS One* 9(10):e111351, 2014; doi: 10.1371/journal.pone.0111351
16. Mane, S.R., Dina, H., Nathan, A., **Das Sarma, J.**, Shunmugam, R.\*, "Increased bioavailability of Rifampicin from stimuli-responsive smart nano carrier", *ACS Applied Materials & Interfaces*, 6(19):16895-16902, 2014; doi: 10.1021/am504402b
17. N, V.R., Dina, H., Venue, P., **Das Sarma, J.\***, Shunmugam, R.\*, "Smart nanocarrier from norbornene based triblock copolymers for the sustained release of multi-cancer drugs", *RSC Advances* 4(85):45625-45634, 2014; doi: 10.1039/c4ra07549h
18. N, V.R., Ganivada, M. N., Sarkar, S., Dinda, H., Chatterjee, K., Dalui, T., **Das Sarma, J.**, Shunmugam, R.\*, "Magnetic Norbornene Polymer as Multiresponsive

Nanocarrier for Site Specific Cancer Therapy”, *Bioconjugate Chemistry* 25(2):276-285, 2014; doi: 10.1021/bc400409n

19. Khan, R.S., Dine, K., **Das Sarma, J.\***, Shindler, K.S.\*, “SIRT1 Activating compounds reduce oxidative stress mediated neuronal loss in viral induced CNS demyelinating disease”, *Acta Neuropathologica Communications* 2(3), 2014; doi: 10.1186/2051-5960-2-3
20. Mane, S.R., Chatterjee, K., Dinda, H., **Das Sarma, J.\***, Shunmugam, R.\*, “Stimuli responsive nanocarrier for an effective delivery of multi-frontline tuberculosis drugs”, *Polymer Chemistry*, 5(8):2725-2735, 2014; doi: 10.1039/c3py01589k
21. Kishore, A., Biswas, K., N, V.R., Shunmugam, R.\*, **Das Sarma, J.\***, “Functionalized single walled carbon nanotubes facilitate efficient differentiation of neuroblastoma cells in vitro”, *RSC Advances* 4(96):53777-53787, 2014; doi: 10.1039/c4ra09540e
22. N, V.R., Dinda, H., Ganivada, M.N., **Das Sarma, J.\***, Shunmugam, R.\*, “Efficient approach to prepare multiple chemotherapeutic agent conjugated nanocarrier” *Chemical Communications* 50(88):13540-13543, 2014; doi: 10.1039/c4cc04445b
23. Biswas, K., **Das Sarma, J.\***, “Effect of microtubule disruption on neuronal spread and replication of demyelinating and non-demyelinating strains of Mouse Hepatitis virus in vitro”, *Journal of Virology* 88(5):3043-3047, 2013; doi: 10.1128/jvi.02545-13
24. Kishore, A., Kanaujia, A., Nag, S., Rostami, A.M., Kenyon, L.C., Shindler, K.S.\*, **Das Sarma, J.\***, “Different mechanisms of inflammation induced in virus and autoimmune-mediated models of Multiple Sclerosis in C57BL6 mice”, *BioMed Research International* 1-9, 2013; doi: 10.1155/2013/589048
25. Chatterjee, D., Biswas, K., Nag, S., Ramachandra, S.G., **Das Sarma, J.\***, “Microglia play a major role in direct viral-induced demyelination”, *Clinical and Developmental Immunology* 1-12, 2013; doi: 10.1155/2013/510396.
26. Mane, S.R., N, V.R., Chatterjee, K., Dinda, H., Nag, S., Kishore, A., **Das Sarma, J.\***, Shunmugam, R.\*, “Amphiphilic Homopolymer vesicles as unique nano-Carriers for cancer therapy”, *Macromolecules*, 45(19), 8037-8042, 2012; doi: 10.1021/ma301644m
27. N, V.R., Kishore, A., Sarkar, S., **Das Sarma, J.\***, Shunmugam, R.\*, “Norbornene-derived Poly-d-lysine copolymers as quantum dot carriers for neuron growth”, *Biomacromolecules* 13(9):2933-2944, 2012; doi: 10.1021/bm300968y

(Listed in "Most Read Article" published by *Biomacromolecules*)

28. Mane, S.R., N, V.R., Chatterjee, K., Dinda, H., Nag, S., Kishore, A., **Das Sarma, J.\***, Shunmugam, R.\*, "A unique polymeric nano-carrier for anti-tuberculosis therapy", *Journal of Materials Chemistry* 22(37):19639-19642, 2012; doi: 10.1039/c2jm33860b
29. N, V.R., Mane, S., Kishore, A., **Das Sarma, J.\***, Shunmugam, R.\*, "Norbornene derived doxorubicin copolymers as drug carriers with pH responsive hydrazone linker", *Biomacromolecules*, 13(1):221-230, 2012; doi: 10.1021/bm201478k  
**(Listed in "Most Read Article" published by Biomacromolecules).**
30. Shindler, K.S., Chatterjee, D., Biswas, K., Goyal, A., Dutt, M., Nassrallah, M., Khan, R.S., & **Das Sarma, J.\***, "Macrophage-Mediated Optic Neuritis induced by retrograde axonal transport of Spike gene recombinant Mouse Hepatitis virus", *Journal of Neuropathology & Experimental Neurology* 70(6):470-480, 2011; doi: 10.1097/nen.0b013e31821da499
31. **Das Sarma, J.\***, Kenyon, L.C., Hingley, S.T., Shindler, K.S., "Mechanisms of primary axonal damage in a viral model of Multiple Sclerosis", *Journal of Neuroscience*, 29(33):10272-10280, 2009; doi: 10.1523/jneurosci.1975-09
32. Das S., Smith T.D., **Das Sarma, J.**, Ritzenthaler J.D., Maza J., Kaplan B.E., Cunningham L.A., Suaud L., Hubbard M.J., Rubenstein R.C., and Koval M.\*, "ERp29 restricts Connexin43 oligomerization in the Endoplasmic Reticulum", *Molecular Biology of the Cell* 20(10):2593–2604, 2009; doi: 10.1091/mbc.E08-07-0790
33. **Das Sarma, J.**, Ciric, B., Marek, R., Sadhukhan, S., Caruso, M. L., Shafagh, J., Fitzgerald D.C., Shindler K.S., Rostami, A.\*, "Functional interleukin-17 receptor A is expressed in central nervous system glia and upregulated in experimental autoimmune encephalomyelitis", *Journal of Neuroinflammation* 6(1):14, 2009; doi: 10.1186/1742-2094-6-14
34. Marek, R., Caruso, M., Rostami, A., Grinspan, J. B., **Das Sarma, J.\***, "Magnetic cell sorting: A fast and effective method of concurrent isolation of high purity viable astrocytes and microglia from neonatal mouse brain tissue", *Journal of Neuroscience Methods* 175(1):108-118, 2008; doi: 10.1016/j.jneumeth.2008.08.016
35. Shindler, K.S., Kenyon, L.C., Dutt, M., Hingley, S.T., **Das Sarma, J.\***, "Experimental Optic Neuritis induced by a demyelinating strain of Mouse Hepatitis virus", *Journal of Virology* 82(17):8882-8886, 2008; doi: 10.1128/jvi.00920-08
36. **Das Sarma, J.\***, Iacono, K., Gard, L., Marek, R., Kenyon, L.C., Koval, M., Weiss, S. R., "Demyelinating and non-demyelinating strains of Mouse Hepatitis virus

differ in their neural cell tropism”, *Journal of Virology* 82(11):5519-5526, 2008; doi: 10.1128/jvi.01488-07

37. **Das Sarma, J.**, Kaplan, B. E., Willemsen, D., Koval, M.\*, “Identification of rab20 as a potential regulator of Connexin43 trafficking”, *Cell Communication & Adhesion*, 15(1-2):65-74, 2008; doi: 10.1080/15419060802014305
38. Fitzgerald, D.C., Ciric, B., Touil, T., Harle, H., Grammatikopolou, J., **Das Sarma, J.**, Gran, B., Zhang, G.X., Rostami, A.\*, “Suppressive effect of IL-27 on encephalitogenic Th17 cells and the effector phase of Experimental Autoimmune Encephalomyelitis”, *The Journal of Immunology* 179(5):3268-3275, 2007; doi: 10.4049/jimmunol.179.5.3268
39. Qiu, Z., Hingley, S. T., Simmons, G., Yu, C., **Das Sarma, J.**, Bates, P., & Weiss, S. R.\*, “Endosomal proteolysis by Cathepsins Is necessary for murine coronavirus Mouse Hepatitis virus type 2 Spike-mediated entry”, *Journal of Virology* 80(12):5768-5776, 2006; doi: 10.1128/jvi.00442-06
40. Constantinescu, C. S.\*, Tani, M., Ransohoff, R.M., Wysocka, M., Hilliard, B., Fujioka, T., Murphy, S., Tighe, P.J., **Das Sarma, J.**, Trinchieri, G., Rostami, A., “Astrocytes as antigen-presenting cells: expression of IL-12/IL-23”, *Journal of neurochemistry* 95(2):331-340, 2005; doi: 10.1111/j.1471-4159.2005.03368.x
41. Maza, J., **Das Sarma, J.**, Koval, M.\*, “Defining a minimal motif required to prevent Connexin oligomerization in the Endoplasmic Reticulum”, *Journal of Biological Chemistry* 280(22):21115-21121, 2005; doi: 10.1074/jbc.m412612200
42. Fu, L., Gonzales, D. M., **Das Sarma, J.**, Lavi, E.\*, “A combination of mutations in the S1 part of the spike glycoprotein gene of coronavirus MHV-A59 abolishes demyelination”, *Journal of Neurovirology* 10(1):41-51, 2004; doi: 10.1080/13550280490262229
43. Gonzales, D. M., Fu, L., Li, Y., **Das Sarma, J.**, Lavi, E.\*, “Coronavirus-induced demyelination occurs in the absence of CD28 costimulatory signals”, *Journal of Neuroimmunology* 146(1-2):140-143, 2004; doi: 10.1016/j.jneuroim.2003.10.053
44. **Das Sarma, J.**, Das, S., Koval, M.\*, “Regulation of Connexin43 oligomerization is saturable”, *Cell Communication & Adhesion* 12(5-6):237-247, 2005; doi: 10.1080/15419060500511875
45. Maza, J., Mateescu, M., **Das Sarma, J.**, & Koval, M.\*, “Differential oligomerization of Endoplasmic Reticulum-retained Connexin43/Connexin32 chimeras”, *Cell Communication & Adhesion*, 10(4):319-322, 2003; doi: 10.1080/714040446

46. **Das Sarma, J.**, Wang, F., Koval, M.\* , “Targeted Gap junction protein constructs reveal Connexin-specific differences in oligomerization”, *Journal of Biological Chemistry* 277(23):20911-20918, 2002; doi: 10.1074/jbc.m111498200
47. **Das Sarma, J.**, Scheen, E., Seo, S., Koval, M., Weiss, S.R.\* , “Enhanced green fluorescent protein expression may be used to monitor murine coronavirus spread in vitro and in the mouse central nervous system”, *Journal of Neurovirology* 8(5):381-391, 2002; doi: 10.1080/13550280260422686
48. **Das Sarma, J.**, Meyer, R.A., Wang, F., Abraham, V., Lo, C.W., Koval, M.\* “Multimeric Connexin interactions prior to the trans-Golgi network”, *Journal of cell science* 114(22): 4013-4024, 2001
49. **Das Sarma, J.**, Fu, L., Hingley, S.T., Lavi, E.\* , “Mouse Hepatitis virus type-2 infection in mice: an experimental model system of acute meningitis and hepatitis”, *Experimental and Molecular Pathology* 71(1):1-12, 2001; doi: 10.1006/exmp.2001.2378
50. Navas, S., Seo, S., Chua, M.M., **Das Sarma, J.**, Lavi, E., Hingley, S.T., Weiss, S.R.\* , “Murine coronavirus Spike protein determines the ability of the virus to replicate in the liver and cause hepatitis”, *Journal of Virology* 75(5):2452-2457, 2001; doi: 10.1128/jvi.75.5.2452-2457.2001
51. **Das Sarma, J.**, Lo, C.W., Koval, M.\* , “Cx43/ $\beta$ -Gal inhibits Cx43 transport in the Golgi apparatus”, *Cell Communication & Adhesion* 8(4-6):249-252, 2001; doi: 10.3109/15419060109080732
52. **Das Sarma, J.**, Fu, L., Hingley, S.T., Lai, M.M.C., Lavi, E.\* , “Sequence analysis of the S gene of recombinant MHV-2/A59 coronaviruses reveals three candidate mutations associated with demyelination and hepatitis”, *Journal of Neurovirology* 7(5):432-436, 2001; doi: 10.1080/135502801753170282
53. Navas, S., Seo, S., Chua, M.M., **Das Sarma, J.**, Hingley, S.T., Lavi, E., Weiss, S.R.\* , “Role of the Spike protein in murine coronavirus induced hepatitis: an in vivo study using targeted RNA recombination”, *Advances in Experimental Medicine and Biology The Nidoviruses* 494:139-144, 2001; doi: 10.1007/978-1-4615-1325-4\_22
54. **Das Sarma, J.**, Fu, L., Weiss, S.R., Lavi, E., "Demyelination determinants in the S gene of MHV", *The Nidoviruses*, Springer: 494:133-137, 2001; doi: 10.1007/978-1-4615-1325-4\_21
55. Fu, L., **Das Sarma, J.**, Lavi, E., “Differential expression of tumor necrosis factor in primary Glial cell cultures infected with demyelinating and non-demyelinating MHVs”, *Advances in Experimental Medicine and Biology The Nidoviruses*, 494:663-668, 2001; doi: 10.1007/978-1-4615-1325-4\_98

56. **Das Sarma, J.**, Fu, L., Tsai, J.C., Weiss, S.R., Lavi, E.\*, “Demyelination determinants map to the Spike glycoprotein gene of coronavirus Mouse Hepatitis virus”, *Journal of Virology* 74(19):9206-9213, 2000; doi: 10.1128/jvi.74.19.9206-9213.2000
57. Lavi, E., **Das Sarma, J.**, & Weiss, S.R.\*, “Cellular reservoirs for coronavirus infection of the brain in  $\beta$ 2-Microglobulin knockout mice”, *Pathobiology*, 67(2):75-83, 1999; doi: 10.1159/000028054
58. **Das Sarma, J.**, Duttagupta, C., Ali, E., Dhar, T.K.\*, “Improved microbiological assay for folic acid based on microtiter plating with *Streptococcus faecalis*”, *J AOAC International* 78(5):1173-7, 1995
59. **Das Sarma, J.**, Duttagupta, C., Ali, E., Dhar, T.K.\*, “Antibody to folic acid: increased specificity and sensitivity in ELISA by using  $\epsilon$ -aminocaproic acid modified BSA as the carrier protein”, *Journal of Immunological Methods*, 184(1):1-6, 1995; doi: 10.1016/0022-1759(95)00069-m
60. **Das Sarma, J.**, Duttagupta, C., Ali, E., Dhar, T.K.\*, “Direct microtitre plate enzyme immunoassay of folic acid without heat denaturation of serum”, *Journal of Immunological Methods*, 184(1):7-14, 1995; doi: 10.1016/0022-1759(95)00068-l

### **Reviews and Book Chapters**

1. Basu, R., and **Das Sarma, J.**, “Connexin 43/47 channels are important for astrocyte/ oligodendrocyte cross-talk in myelination and demyelination”, *Journal of Biosciences*, 43 (5):1055-1068, 2018
2. Hussain, A., Raveedran, V.A., Kundu, S., Samanta, T., Shunmugam, R., Pal, D., and **Das Sarma J.\***, “Mechanisms of Arsenic induced toxicity with special emphasis on Arsenic binding proteins”. Arsenic: In Tech Open (Book Chapter), 2017; doi: 10.5772/intechopen.74758
3. Singh, M., and **Das Sarma, J.\***, “Demyelinating Diseases and Neuroinflammation. Inflammation: The Common Link in Brain Pathologies”, 139-170, 2016; doi:10.1007/978-981-10-1711-7\_5 (Book Chapter), doi: 10.1007/978-981-10-1711-7\_5
4. **Das Sarma, J.\***, “Microglia-mediated neuroinflammation is an amplifier of virus-induced neuropathology.” *Journal of NeuroVirology*, 20(2):122-136, 2013; doi: 10.1007/s13365-013-0188-4

### **Research Collaborations:**

1. Dr. Kenneth S. Shindler, University of Pennsylvania, USA

2. Dr. Debnath Pal, India Institute of Science, India
3. Dr. Ashima Mukhopadhyay, Tata Medical Centre Cancer Hospital, Kolkata
4. Dr. Randall Cohrs, University of Colorado, Denver, USA
5. Dr. Michael Koval, Emory University, USA
6. Dr. Ujjwal Neogi, Karolinska Institute, Sweden
7. Dr. Raja Shunguman, IISER-Kolkata
8. Dr. Sharmila Sengupta, NIGMB, Kolkata

### **Students' Achievement (2009-2020):**

1. **Ms. Lucky Sarkar** received International '**American Society for Virology (ASV) travel award** to present her work in a 5' flash talk plus a poster in the Pathogenesis session at 39<sup>th</sup> Annual Meeting of the 'American Society for Virology ASV, June 2020', Colorado State University, Fort Collins, CO, USA (cancelled due to COVID-19 pandemic).
2. **Ms. Lucky Sarkar's** work '***Azadirachta indica* A. Juss ameliorates Mouse Hepatitis virus-induced neuroinflammatory demyelination**' was **highlighted and selected to present for a 5' flash talk plus a poster** in the Pathogenesis session at 39<sup>th</sup> Annual Meeting of the 'American Society for Virology ASV, June 2020', Colorado State University, Fort Collins, CO, USA (cancelled due to COVID-19 pandemic).
3. **Mr. Soumya Kundu** received the **ASBMB travel award** to attend the Annual meeting of American Society for Biochemistry and Molecular Biology, 2020 at San Diego, California, USA (cancelled due to COVID-19 pandemic).
4. **Mr. Abhishek Bose** got selected to deliver an **oral presentation** in the Society for Neuroimmune Pharmacology (SNIP 2020) international conference, April 2020 (cancelled due to COVID-19 pandemic).
5. **Mr. Abhishek Bose** achieved **Best poster award** at 'New Insights into the Inflammation, Immunity, and Pathobiology of Diseases, INDO-US Symposium' organized by IUSSTF/IISER Kolkata, December 2019.
6. **Ms. Debanjana Chakravarty and Mr. Soumya Kundu** got selected for the oral presentation at the 'Indo-US Symposium on New Insights into the Inflammation, Immunity, and Pathobiology of Diseases', 2019.
7. **Ms. Fareeha Saadi** received the Young scientist best oral presentation award at Neuroupdate 2019, organized by CSIR-IICB, Kolkata, India.
8. **Ms. Lucky Sarkar** got selected under '**Dr. DM Kar' Prize** category and presented her paper at 'XXXVII Annual Meet of Indian Academy of

Neurosciences (IAN 2019)-Neuron to Behavior', AIIMS New Delhi, India, November 2019.

9. **Mr. Sourodip Sengupta received Best poster presentation** on “Role of matrix metalloproteinases (MMPs) and tissue inhibitor of MMPs (TIMPs) in Mouse Hepatitis Virus (MHV) induced neuroinflammation” at IBRO-APRC School on Blood-Brain-Barrier, November 4-9, 2019.
10. **Mr. Abhishek Bose received International SERB travel award** from Science and Engineering Research Board, India to present his work at ‘Society for Neuroscience SFN meeting (Neuroscience 2019)’ at Chicago, Illinois, USA.
11. **Ms. Debanjana Chakravarty received the American Association of Immunologist Laboratory grant 2019** to attend international conference “IMMUNOLOGY 2019” at San Diego, California, USA.
12. **Mrs. Fareeha Saadi (SRF) received Department of Biotechnology, India travel grant** to attend international conference “IMMUNOLOGY 2019” at San Diego, California, USA.
13. **Mr. Soumya Kundu received best poster award** at 43rd Indian Biophysical Society Meeting 2019, from 15-17th March, 2019, at IISER Kolkata.
14. **Ms. Debanjana Chakravarty received 3rd best poster award** at DBS Departmental Day, 2019 at IISER Kolkata.
15. **Dr. Mahua Maulik received Wellcome Trust-DBT India Alliance Early Career fellowship (2018).**
16. **Mr. Abhishek Bose got selected for Poster presentation at 2018 ASCB/EMBO Meeting**, San Diego, California, USA from 8th-12th December and he received the **prestigious CSIR travel award** for this conference.
17. **Mr. Sourodip Sengupta received Best Poster award (Stutee Nag Prize)** at XXXVI Annual Conference of Indian Academy of Neurosciences (29th-31st October, 2018) at Banaras Hindu University, Varanasi, India.
18. **Mr. Abhishek Bose got selected for the oral presentation (Dr. D. M. Kar Prize)** at XXXVI Annual Conference of Indian Academy of Neurosciences (29th-31st October, 2018) at Banaras Hindu University 2018, Varanasi, India.
19. **Mr. Manmeet Singh received Travel award** to attend 34th congress of ECTRIMS (European committee for Treatment and Research in Multiple Sclerosis) in Berlin from 10th-12th October 2018.

20. **Ms. Lucky Sarkar** received **third best oral presentation award** in the **young scientist category** at “International Conference on Nutraceuticals and Chronic Diseases (INCD 2018)”, 14th-16th September 2018, held at Dehradun, India.
21. **Mr. Afaq Hussain** received the **travel award** to attend the International congress of Cell Biology 2018, Hyderabad.
22. **Mr. Sourodip Sengupta** was selected to give **oral presentation** at Frontiers in Molecular biology conference (FIMB-2018) at IISER Kolkata, India.
23. **Ms. Debanjana Chakravarty** and Ms. Fareeha Saadi were awarded the **Stutee Nag prize for the best presentation** in the poster session at the XXXV Annual Conference of Indian Academy of Neurosciences and International Conference on Translational Neurosciences and its application in protection of Mental health, Cuttack, Odisha, 2017.
24. **Mr. Soumya Kundu** was awarded the **S.S. Parmar Research Foundation award for the best poster presentation** the XXXV Annual Conference of Indian Academy of Neurosciences and International Conference on Translational Neurosciences and its application in protection of Mental health, Cuttack, Odisha, October 2017.
25. **Mr. Manmeet Singh** was awarded the **Travel award** to attend the XXXV Annual Conference of Indian Academy of Neurosciences and International Conference on Translational Neurosciences and its application in protection of Mental health, Cuttack, Odisha, October 2017.
26. **Mr. Abhishek Bose** was selected for the **Oral presentation** in the category of **Tulsabai Somani Education Trust** at the XXXV Annual Conference of Indian Academy of Neurosciences and International Conference on Translational Neurosciences and its application in protection of Mental health, Cuttack, Odisha, October 2017.
27. **Mr. Manmeet Singh** received **Prof. Don Gilden Memorial Award** in an International Indo US Symposium on Central Nervous System viral infection and its Therapy 2016, India.
28. **Mr. Soumya Kundu** received **Best Poster Award** at “3rd International Meet on Advanced Studies in Cell Signaling Network (CeSiN 2016), Indian Institute of Chemical Biology (IICB), Jadavpur, Kolkata.
29. **Mr. Manmeet Singh** received the **best poster award** in Frontiers in Modern Biology, organized by Dept of Biological Sciences IISER Kolkata, 2015.
30. **Mr. Manmeet Singh** received the **DuPre fellowship** 2015 by Multiple Sclerosis international federation society UK.

31. **Mr. Rahul Basu** received the **Best poster award** at the Indo-US symposium on Neurovirology, organized by IISER Kolkata and NBRC, 2014.
32. **Mr. Jibin Sadasivin** received the **DuPre fellowship** 2014 by Multiple Sclerosis international federation society, UK.
33. **Ms. Kaushiki Biswas** was selected for **Oral presentation** at Indo-US symposium on Viral Infections of the Nervous System at National Brain Research Centre (NBRC), India, 2014.
34. **Ms. Kaushiki Biswas** was awarded **3<sup>rd</sup> prize in poster presentation** competition at 1<sup>st</sup> departmental day of IISER-K, 2013.
35. **Mr. Rahul Basu** received the **DuPre Grant**, Multiple Sclerosis International Federation (MSIF), in the year 2012.
36. **Mrs. Dhriti Chatterjee** received **best poster presentation** award at Immunocon 2009 (Indian immunological conference 2009).