

Name: Dr. Mahashweta Mitra Ghosh

Designation: Assistant Professor

Department: Post Graduate Department of Microbiology

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Sex (M/F): Female

Category (Gen/SC/ST/OBC): General

Academics:

Sl. No.	Institution Place	Degree awarded	Year	Field of Study
1	Department of Microbiology, Bose Institute, Kolkata Registration Under Jadavpur University	Ph. D in Life Sciences	1998- 2005	Title of Thesis -“Investigation into the developmental expression of genes during the intracellular growth of a bacteriophage, using proteome analysis tools.”
2.	Ballygunge Science College Calcutta Univesity Campus	M.Sc	1996- 1998	Biochemistry with specialization in Advanced Microbiology with 63.8% marks
3.	Barasat Govt. College Under Calcutta University	B.Sc	1993- 1996	Chemistry (Honours) with Physics and Mathematics (Pass) with 53.8% marks

Position and Employment (Starting with the most recent employment)

Sl No.	Institution Place	Position	From (Date)	To (date)
1	Post Graduate Department of Microbiology, St. Xavier's College, Kolkata	Assistant Professor (Stage – II)	01.05.2013	Till Date
2.	Post Graduate Department of Microbiology, St. Xavier's College, Kolkata	Assistant Professor (Stage – I)	01.09.2008	30.04.2013

3.	Post Graduate Department of Microbiology Barrackpore Rastraguru Surendranath College, bARRACKPORE	Lecturer	14.08.07	30.8.2008
4.	Institute of Genetic Engineering, Badu, Madhyamgram	Lecturer	01.11.2004	13.08.2007

HONOURS AND AWARDS

- 1) Qualified in **GATE-1998** in LIFESCIENCE.
- 2) **CSIR- Senior Research Fellowship** in 2001.

INVITED LECTURES ORAL PRESENTATIONS and POSTER PRESENTATION

- ❑ Poster presented in 69th annual meeting of society of biological Chemists (INDIA), December 7-9, 2000. KOLKATA. “A **high yielding Mutant of Mycobacteriophage L1 and its application as a diagnostic tool.**” Shreyasi Chatterjee, Mahashweta Mitra, Sujoy kr. Dasgupta.
- ❑ Poster presented in **International Symposium of Micro bacterial Diseases: Pathogenesis, Protection and control** January 9-11, 2001 Kolkata Organized by Bose Institute, Calcutta
- ❑ Oral presentation on “Isolation & Characterization of bacteria from the root and rhizospheric soil of Typha growing in heavy metal rich mine tailings” in Symposium on “Challenges of Teaching Microbiology in Undergraduate College” organized by “Centre for Modern Biology, University of Calcutta” on 25th September 2010
- ❑ Oral presentation entitled “Role of bacteria in Plant Growth Promotion under heavy metal stress” in UGC sponsored National conference on “ Inclusive growth, Business and Environment in India’s Emerging Economy” organized by Department of Commerce and Business Administration, St Xavier’s College, Kolkata in collaboration with Shri Shikshayatan college Kolkata (6th-7th September, 2013)
- ❑ Oral presentation in the UGC Sponsored seminar on Frontiers of Microbiology: Prospects and Challenges held in Department of Microbiology, BelurVidyamandira on 20th- 21st Nov. 2014.
- ❑ Oral presentation in Seminar organized by Social Environmental and Biological Association, 33C, Madhab Halder Road, Behala, Kol - 34 on **Aquaresources : care and concern** held in Chemical Technology department Jadavpur University on 14.02.2015. Title of the talk: “Rhizospheric iron oxidizing bacteria from *Typha angustifolia* growing in heavy metal enriched wetlands of jaduguda uranium mine tailings, India assist phytoremediation by the plant”
- ❑ Oral presentation entitled “ Sustainable approach towards Arsenic free lower Bengal” in the two day International Seminar on “Relooking at Nations: Reenergizing and reframing strategies for sustainable development” organized by Institute of Management Study, The Institute of Cost Accountants of India and Gaeddu College of Business studies, Royal University of Bhutan.(18-19 July 2015)
- ❑ Presented a paper entitled “ Study of plant growth promoting potential of bacteria isolated from rhizosphere of *Typha angustifolia*” in National level seminar entitled”Frontiers of Microbiology: Prospects and Challenges” organized by the Department of Microbiology,

Ramkrishna Mission Vidyamandira, in collaboration with CSIR-IICB, Kolkata, during 20th - 21st November 2014

- Acted as a resource person in DST sponsored 4 weeks EDP on Plant Tissue culture and Mushroom cultivation organized jointly by EDC-SXC and Department of Microbiology, St. Xavier's College, Kolkata (March 1st-31st March 2016)
- Acted as a resource person in the Ph.D course work on Research methodology of the Department of Biochemistry, West Bengal State University on 28th June 2016
- Presented paper entitled "Diversity of rhizospheric bacterial community of *Typha angustifolia* varies on heavy metal contamination in soil" in International level seminar entitled "Recent Trends in Microbiology" organized by the Department of Microbiology, Ramkrishna Mission Vidyamandira on 14th January 2017

Professional Affiliations:

1. LIFE MEMBER OF THE INDIAN SCIENCE CONGRESS ASSOCIATION. (ISCA)
2. LIFE MEMBER OF Social Environmental and Biological Association,
3. LIFE MEMBER OF BARASAT GOVERNMENT COLLEGE ALUMNI ASSOCIATION.

PUBLICATIONS

Book Chapters

"A pipeline for Assessment of Pathogenic load in the Environment Using Microbiome analysis" in Manoj Nath et.al (Eds): Microbial Metatranscriptomics Below Ground, 978-981-15-9757-2,499575_1_En,(Chapter 23);Mondal S., Singh M.,Pal S.,Das K.,**Mitra Ghosh M.**,Bagchi SS.,and Ganguli S.(2021) Editors: Nath, M., Bhatt,D., Bhargava,P., Choudhary, D.K. (Eds) ISBN 978-981-15-9757-2

Contributed a Chapter in Practical Manual of Modern Microbiology published by Himalayan Publishing House

Selected peer –reviewed publications:

Nanotechnology in Detection of Food Toxins – Focus on the Dairy Products *Review*; Biointerface Research in Applied Chemistry. Volume 11, Issue 6, 2021, 14155 – 14172 Agnishwar Girigoswami 1, **Mahashweta Mitra Ghosh** 2, Pragma Pallavi 1, Seenuvasan Ramesh 1, Koyeli Girigoswami 1,* **Published: 7.03.2021**
<https://doi.org/10.33263/BRIAC116.1415514172>

"Phytochemical, antimicrobial and computational assessment Of *Christella dentata* crude extracts against multidrug resistant bacterial cultures and targets". J. Environ. & Sociobiol.: 17(1) : 13-19, 2020
Meesha Singh, Sayak Ganguli, **Mahashweta Mitra Ghosh***

Comparative metagenomic dataset of hospital effluent microbiome from rural and urban hospitals in West Bengal: Meesha Singh, Sayak Ganguli, **Mahashweta Mitra Ghosh***; Data in Brief: Volume 25 August 2019; 104262; <https://doi.org/10.1016/j.dib.2019.104264>

Rhizospheric soil of *Typha angustifolia* L from heavy metal contaminated and free sites: Comparative profiling reveals selective abundance of γ -proteobacteria and β -proteobacteria Indian Journal of Experimental Biology Vol. 57, October 2019, pp. 733-740: Upal Das Ghosh¹, Pankaj K Singh², Sayak Ganguli³, Chinmay Saha⁴, Ayan Chandra⁵, Anindita Seal⁴ & **Mahashweta Mitra Ghosh ***

Root associated iron oxidizing bacteria increase phosphate nutrition and influence root to shoot partitioning of iron in tolerant plant *Typha angustifolia* (2014). Plant Soil (2014) 381:279–295 DOI 10.1007/s11104-014-2085-x Upal Das Ghosh & Chinmay Saha & Moumita Maiti & Susanta Lahiri & Sarbari Ghosh & Anindita Seal & **Mahashweta Mitra Ghosh***

Rhizospheric Iron Oxidizing Bacteria from *Typha Angustifolia* growing in heavy metal enriched wetlands of Jaduguda Uranium mine tailings, India assisting Phytoremediation by the plant (2015) J. Environment and Sociobiology: 12(2): 133-142, 2015 ISSN: 0973-0834. **Mahashweta Mitra Ghosh*** and Upal Das Ghosh.

Giri N, Bhowmik P, Bhattacharya B, **Mitra M**, Dasgupta S.K. (2009). J. Bacteriology 191(3): 959-967 The Mycobacteriophage D29 Gene 65 Encodes an Early Expressed Protein That Functions as a Structure-Specific Nuclease.

Bidisha Bhattacharya, Nabanita Giri, **Mahashweta Mitra**, Sujoy Kumar Dasgupta (2008) FEMS Microbiology Letters 2008 March 280(1); 64-72 Cloning, characterization and expression analysis of nucleotide metabolism related genes of mycobacteriophage L5.

Shreyasi Chatterjee, **Mahashweta Mitra**, Sujoy kumar Dasgupta (2000). A high yielding mutant of Mycobacteriophage L1 and its application as a diagnostic tool. FEMS Microbiology Letters 188, 47-53

ACCESSION NUMBERS:

Metagenome sequence data at the NCBI Sequence Read Archive (SRA) and Biosamples under accession numbers: SAMN11571463 and SAMN1157147.

16srDNA sequence of Antibiotic resistant bacteria were sent for direct submission of sequence data to Gen Bank. They have provided Gen Bank accession number(s) for the nucleotide sequence(s):

SUB8757948 ls-04	MW380613
SUB8757948 ls-06	MW380614
SUB8757948 ls-02	MW380615
SUB8757948 ls-23	MW380616
SUB8757948 ls-14	MW380617
SUB8757948 ss-20	MW380618
SUB8757948 ls-21	MW380619
SUB8757948 ls-12	MW380620
SUB8757948 ss-03	MW380621

SUB8757948 ss-07 MW380622
 SUB8757948 ls-17 MW380623
 SUB8757948 ls-25 MW380624
 SUB8757948 ls-09 MW380625
 SUB8757948 ss-19 MW380626

We have submitted three isolated bacterial strains in BCCM/LMG Bacteria Culture Collection:

- a) Pseudomonas jaduguda strain R2 = LMG 25820 is maintained in the BCCM/LMG Bacteria Collection.
- b) Bacillus jaduguda strain R9=LMG 28176
- c) Paenibacillus jaduguda strain R8=LMG 28177

We have submitted the 16SRNA sequences of metagenome samples in sequence data to GenBank and got the GenBank accession numbers for the nucleotide sequences:

BankIt1915672	Seq1	KX170864
BankIt1915672	Seq2	KX170865
BankIt1915672	Seq3	KX170866
BankIt1915672	Seq4	KX170867
BankIt1915672	Seq5	KX170868
BankIt1915672	Seq6	KX170869
BankIt1915672	Seq7	KX170870
BankIt1915672	Seq8	KX170871
BankIt1915672	Seq9	KX170872
BankIt1915672	Seq10	KX170873
BankIt1915672	Seq11	KX170874
BankIt1915672	Seq12	KX170875
BankIt1915672	Seq13	KX170876
BankIt1915672	Seq14	KX170877
BankIt1915672	Seq15	KX170878
BankIt1915672	Seq16	KX170879
BankIt1915672	Seq17	KX170880
BankIt1915672	Seq18	KX170881
BankIt1915672	Seq19	KX170882
BankIt1915672	Seq20	KX170883
BankIt1915672	Seq21	
KX170884		

Research Support: Ongoing Research Projects (As Principal Investigator)

Sl No.	Title of Project	Name of Funding Agency	Amount	Date of Initiation & Duration
1.	Isolation of bacterial consortium from the roots and rhizosphere zone of metal tolerant wetland plant Typha and establishing the role of this bacterial consortium in Iron plaque formation and imparting heavy metal tolerance to the wetland plant	CSIR 38/1192/08-EMR-II	14.5 lakhs	05.06.2009-04.06.2012 (3 Years)

	Typha growing in heavy metal enriched Uranium mine tailings			
2.	“Investigating the role of rhizospheric bacteria in promoting the growth of <i>Typhaangustifolia</i> involved in heavy metal detoxification”	UGC (Minor) PHW-095/11-12 (ERO)	2 lakhs	September 2011- August 2013 (2 Years)
3.	Identification of major pathogenic microbes in hospital effluents using metagenomic screening and design of potent inhibitors using virtual screening of medicinal plant library against them	WBDST236 (Sanc./ST/P&T/1G-39/2017)	14 lakhs	August 2018-running