Sujay Ghosh. Ph.D.

Curriculum Vitae

University of Calcutta 033-2461-5445 (Ext: 273)
Department of Zoology sgzoo@caluniv.ac.in
Cytogenetics & Genomics Research Unit g.sujoy.g@gmail.com
35 Ballygunge Circular Road
Kolkata.WB. India. 700019

Personal Statement

I am a geneticist. My research involves both clinical subjects and preclinical model *Drosophila melanogaster*. My clinical study focuses on genetic basis of causes and consequences of human Trisomy21 and male infertility. My team of preclinical model researchers' explores the toxic effects of various xenobiotic agents present in regular human use and genetic basis of immune response in Drosophila.

Research Area

Human Genetics

- Identification of genetic, epigenetic and habitual risk factors of Trisomy 21 & chromosomal nondisjunction
- Genetic & epigenetic risk factors of male infertility.

Drosophila Genetics

- Effects of common toxicants on the genetic regulations of developmentally relevant genes in organ primordial, i.e, imaginal disc and nervous system in Drosophila.
- Evolution of immune response among related species and local demes of Drosophila.

Education and Training

1994-1997	University of Calcutta	B.Sc.	Zoology as Honours/Major with Botany and Chemistry as subsidiary subjects
1997-1999	University of Calcutta	M.Sc.	Zoology as Major with specialization in Advanced Cytology and Genetics.
2001-2009	West Bengal University of Technology	Ph.D.	Degree in Biotechnology. Thesis Title: Molecular Investigation of Trisomy 21 Down syndrome patients

Appointments and Positions

2013-present	University of Calcutta.Kolkata. West Bengal.India
	2015-presnt: Senior Assistant Professor in Zoology.
	2013-2015: Assistant Professor in Zoology.
2006-2013	SundarbanHaziDesarat College (Affiliated to University of Calcutta)
	Assistant Professor in Zoology (Undergraduate Level)

Administrative Responsibilities

2013-present

- Joint convenor of admission committee for post graduate level (2015-2016), University of Calcutta
- Member of central space committee (2015-2017), University of Calcutta.
- Members of development committee (2015-2017), University of Calcutta.
- Syndicate nominee to Charuchandra College (Affiliated to University of Calcutta)
- Syndicate nominee to Kishore Bharati Bhagini Nivedita College (Affiliated to University of Calcutta).
- Syndicate nominee to Khidirpore College (Affiliated to University of Calcutta).
- Member UG board of Studies in Zoology, University of Calcutta.
- Members of CBCS syllabus committee for Zoology at UG and PG level of University of Calcutta.
- Joint Co-Ordinator of Refresher course in Life Science (2016) at Human Resource Development Center, University of Calcutta.

Membership in Professional Society and Position

- Life member: Indian Science Congress.
- Life member & Executive committee member: Zoological Society of India.
- Chair/ President of InternationalTrisomy21 Research Society, Indian Chapter.
- Member of Preclinical Committee, Trisomy 21 Research Society. Netherlands (2020-2021).
- Member of Down syndrome-COVID 19 Global survey task force by T21RS Netherlands and NIH, USA.
- Member of International Trisomy21 Research Society Communication Work group. Netherlands (2020-present).
- Member of membership committee (2022-present)
- Member of academic committee SRM University, Gangtok, Sikkim.
- Member, Academic council, Swami Vivekananda University, Barrackpore, west Bengal. India.

Award Received

- Received Soroshibala Memorial Fellowship by University of Calcutta for Achieving 2nd rank in the University in Bachelor Degree Examination in the year 1997.
- University Grant Commission fellowship award in the year 2001.
- Qualified State Level Eligibility Test 1999.
- Received International travel award for attending T21RS 3rd International Conference at Barcelona Spain, 2019.
- Received international Scientific Program award from T21RS Netherlands 2020.
- Received international travel award for attending T21RS 4th International conference at Long Beach, California, 2022.
- Received international Scientific Program award from T21RS Netherlands 2022.

Seminar/Workshop/Conference Attended

- 3rd International conference of Trisomy21 Research Society at Barcelona, Spain 2019: Speaker
- One day seminar (Local) organized by Ramkrishna Mission Vidyamandir, Belur. India. 2020. Speaker
- International virtual conference by Trisomy21 Research Society. 2021. Speaker
- 4th International conference of Trisomy 21 Research Society at Long Beach, California, USA. 2022. Speaker and Season Chair.
- Special lecture (local) at Diamond Harbour Medical College Hospital. Diamond Harbour. 2022. Invited speaker.
- 20th All India Congress of Genetics and Genomics & National Seminar at IICB, Kolkata. 2023. Invited Speaker

Regular University Course Teaching at Department of Zoology, University of Calcutta

Semester Taught	Course Title & Number	Role in Course	Enrolment
1stSemester	Genetics	Instructor	72
2nd Semester	Molecular Biology	instructor	72
3rd Semester	Elective paper Genetics	Instructor	10
4th Semester	Elective paper Genetics	Instructor	10

At Department of Genetics, University of Calcutta

Semester Taught	Course Title & Number	Role in Course	Enrolment
1st Semester	Developmental Genetics	Instructor	12
3nd Semester	Animal Genetics	instructor	12

Major Advisor for Graduate Student Dissertations at Master Degree Level

Years	Name of Student	University	Degree	Topic
2013	Aditya Das	CU	M.Sc.	MTHFR polymorphisms and their relation to congenital heart defect in Bengali population
2014	Sharmistha Roy	CU	M.Sc.	COL6A1 polymorphism and congenital heart defect in Down syndrome patients.
2014	Aritri Bhattacharya	CU	M.Sc.	MTRR polymorphisms and congenital heart defects among mothers of Down syndrome baby.
2015	Tania Chatterjee	CU	M.Sc.	Proteomic changes in *Drosophila melanogaster* exposed to heavy metal contaminated water.
2015	AnkitaMalakar	CU	M.Sc.	Genetic and proteomic differences between two subpopulations of *Drosophila ananasae* from Indian subcontinent
2016	MowmitaSaha	CU	M.Sc.	Effects of fruit preservative on genetic and proteomic changes in life history of *Drosophila melanogaster*.
2017	OindrilaSil	CU	M.Sc.	Effects of temperature and fruit preservative Alar on morphology and life history traits of *Drosophila melanogaster*.
2017	Shirsa Biswas	CU	M.Sc.	Change of life history traits and protein expression in *Drosophila melanogaster* exposed to Bisphenol A.

Major Advisor for Ph.D. thesis

Year of Registration	Name of Scholar	Status	University	Title of Thesis
2015	SohiniSingha Roy	Awarded June2020	CU	Environmental stress induced genomic and proteomic changes in Drosophila melanogaster
2015	Anirban Ray	Awarded. December 2019	CU	Genetic and epidemiological risk factors associated with Down syndrome birth
2016	Morium Begum	Awarded October 2021	CU	Life history traits and gene expression in Drosophila melanogaster
2017	Upamanyu Pal	Submitted March 2022	CU	Polymorphism of genes involved in maternal recombination associated with Down syndrome birth
2018	PinkuHalder	Awarded June 2022	CU	Polymorphism of genes involved in maternal folate metabolism and their association with Down syndrome birth risk
2018	Subhasree Mitra	Awarded July 2021	CU	Genetic Diversity of Phytophagus mite from rural Bengal.
2021	Saurav Dutta	Running	CU	Study of Y chromosome microdeletion and spermatogenic regulator gene polymorphisms as risk factors of infertility among the men of West Bengal.
2021	Samudra Pal	Running	CU	Study of association of mutations and gene polymorphisms of selected meiotic regulators with infertility among men from West Bengal.
2022	Debasmita Das	Running	CU	Characterization of neurotoxicity and genotoxicity of plant growth regulator daminozide in eukaryotic model insect *Drosophila melanogaster*.
2022	Pallab Paul	Running	CU	Effects of bacterial infection on immune response and its manifestation in allopatric populations of *Drosophila ananassae*.

Grants and Projects

Sl. No	Project Title	Funding Agency	Grant Amount	Duration& Status
1.	Epidemiological Study of aneuploidy birth and related risk factors among women of Southern Sundarban area with special reference to Basanti&Gosaba Block	University Grant Commission (UGC)	INR 1,45,000/-	2010-2012 Completed
2.	Prevention of Genetic and Congenital Disorders: Awareness, Counselling, screening and Genetic Education Program.	Department of Biotechnology (DBT), India.	INR18,83,200/-	2012-2015 Completed
3.	Maternal age and birth of Down syndrome babies	Indian council for	INR 14,13,695/-	2013-2016

		Medical Research (ICMR)		completed
4.	Genetic Polymorphism study to identify the genetic markers for susceptibility to trisomy 21 pregnancy among women	UGC- BRS	INR6,00,000/-	2014-2016 completed
5.	Prevention of Down Syndrome Birth Through Awareness Campaign, Genetic counseling and Development of Preconceptional DNA Based Diagnostic Markers	Dept. of Sc& Tech. WB. (WBDST)	INR .9,47,625/-	2015-2017 Completed
6.	Study on genetic and epigenetic risk factors of male infertility	Indian council for Medical Research (ICMR)	INR 41,10,000/-	Running
7.	Nutritional and Environmental Hazards in Non-Communicable Diseases	UGC-UPEII	INR 2,92,09,000/-	Running

Publications

Book/Book Chapter

- Chapter Title: Etiology of Down syndrome: Risk of advanced maternal age and altered meiotic recombination for chromosome 21 nondisjunction: Book Title: Genetics &Etiology of Down syndrome (2011). InTech, Croatia; ISBN:978-953-307-631-7.
- Chapter Title Risk factors for Down syndrome birth: Understanding the causes from Genetics & Epidemiology. Book Title: Genetics &Etiology of Down syndrome (2013). InTech, Croatia; ISBN:978-953-51-1036-1.
- Chapter Title Down syndrome birth: Impact of environmental risk factors on maternal meiotic errors (2014). Book Title: New development in Down syndrome research. NOVA, NY, USA. ISBN:978-1-62081-951-7.
- Chapter Title: Recent Advances in Down syndrome research. Book Title: Health problem in Down syndrome.(2015). InTech, Croatia; ISBN:978-953-51-2154-1.
- Chapter Title: Bisphenol A: Understanding its health effects from the studies performed on Model organism. Book Title: Bisphenol A exposure and health risk (2017). InTech, Croatia; ISBN:978-953-307-51-3218-9.
- Chapter Title: Gene Polymorphisms That Predispose Women for Down Syndrome Child Birth. Book Title: In book: Trisomy 21 and Other Fetal Aneuploidies (2019). InTech, Croatia. DOI: 10.5772/intechopen.89512. License CC BY 3.0

Research & Review Articles in Journals

1. **Ghosh S,** Dey SK (2003) DNA diagnosis of Down syndrome using polymerase chain reaction and polymorphic microsatellite markers. *International Journal Human Genetics*3: 17-20. ISSN No. 0972-3575. Impact factor: 0.5.
2. Dey SK, Deb Majumder I and **Ghosh S** (2003) Cytogenetic investigations in referral cases of congenital disorders from Kolkata, India.*Journal of Biological Research* 23(2)1-6. ISSN No. 2241-5793. Impact Factor: 1.2.
3. Dev Majumder I, **Ghosh S**, Dey SK (2004) Sex Determination in Children with Ambiguous Genitalia by Polymerase Chain Reaction. *International Journal of Human Genetics*4: 215-217. ISSN No. 0972-3575. Impact Factor : 0.5.
4. Dey SK**, Ghosh S** (2005) PCR based detection of parental origin of extra chromosome 21 in Down syndrome. *International Journal of Hum Genetics***5**:183-186. ISSN No. 0972-3575. Impact factor: 0.5.
5. **Ghosh S,** Feingold E, Dey SK (2009)Etiology of Down Syndrome: Evidence for Consistent Association among Altered Meiotic Recombination, Nondisjunction and Maternal Age Across Populations. American Journal of Medical Genetics 149A: 1415-1420. ISSN: 1552-4833. Impact factor. 2.25

6. **Ghosh S,** Feingold E, Chakraborty S, Dey SK (2010) Telomere length is associated with types of chromosome 21 nondisjunction: a new insight into the maternal age effect on Down Syndrome birth. *Human Genetics* 127: 403-409.ISSN: 0340-6717. Impact factor:4.6.
7. **Ghosh S,** Bhaumik P, Ghosh P, Dey SK (2010) Chromosome 21 nondisjunction and Down syndrome birth in Indian cohort: analysis of incidence and etiology from family linkage data.*GeneticsResearch,Cambridge*92: 189-197. ISSN: 0016-6723. Impact factor: 0.9
8. **Ghosh S**, Hong CS, Feingold E, Ghosh P, Ghosh P, Bhaumik P, Dey SK. (2011) Epidemiology of Down syndrome: new insight into the multidimensional interactions among genetic and environmental risk factors in the oocyte.*American Journal of Epidemiology*.174:1009-10016. ISSN 0002-9262. Impact factor: 5.5
9. Dey S.K. **Ghosh S**. (2011) Chromosome 21 nondisjunction and Down syndrome birth: Risk from Recombination anomaly in oocyte and its interaction with advancing maternal age.*Perspective in Cytology and Genetics*.15:280-288.
10. Ghosh P, Bhaumik P, **Ghosh S**, Ozbek U, Feingold E, Maslen C, Sarkar BN, Pramanik V, Biswas P, Bandhyopadhyay B, Dey SK (2012) Polymorphic haplotypes of CRELD1 differentially predisposes Down syndrome and euploidbaby. *Am J Med Genet A*.158A (11):2843-8.ISSN: 1552-4833. Impact Factor: 2.25.
11. Majumder, P., Nair, V., Mukherjee, M., **Ghosh, S**., Dey, S.K.,(2013). The Autosomal Recessive Inheritance of Hereditary Gingival Fibromatosis. Case Reports in Dentistry, ISSN-2090-6455, Vol. 2013 Article ID 432864, 4 pages,
12. **Ghosh S**, Ghosh P, Dey SK (2014). Altered incidence of meiotic errors and Down syndrome birth under extreme low socioeconomic exposure in the Sundarban area of India.Journal of Community Genetics.5 (2): 119-124. ISSN: ISSN: 1868-310X.
13. Majumder, P., **Ghosh, S**., Dey, S.K. (2014) Spontaneous abortion of aneuploidy foetus enhances the risk of Down syndrome birth:Implication of epidemiological factors.*International Journal of Current Biotechnology (IJCB)*, ISSN- 2321-8371, Vol. 2(12): 9-15.
14. Ghosh P, **Ghosh S**. (2014) Missegregation of Chromosome 21 In Oocyte: What Genetic Causes Imperil a Healthy Egg to Have Bad Fate.J Cell SciMoleculBiol.1(2): 109.
15. Bhaumik P, Ghosh P, **Ghosh S**, Majumdar S, Pal Sarkar S, Ghosh Roy A, Chakraborty A, Dey SK (2014) A Rare Intronic Variation of Presenilin-1 (rs201992645) is Associated withAlzheimer's Disease and Down Syndrome Birth. Hereditary Genetics Current Research: 3: 136. ISSN: 2161-1041. Impact factor: 0.93.
16. Majumder, P**., Ghosh, S**., Dey, S.K. (2015) Association between primary amenorrhea and early maternal age: a population study. *Indian Journal of Science & Technology* (IJST), ISSN- 0974-6846. 8 (15), 1-6.
17. Mitra, S., Gupta, S.K. &**Ghosh, S** (2015) Bio-efficacy of some green pesticides towards mortality and repellency against *Petrobiaharti* Ewing (Acari: Tetranychidae) infesting medicinal weed, *Oxalis corniculata* L. (Oxalidaceae). International J of App l. Research; (11) : 739-742. ISSN Print:2394-7500. Impact Factor : 5.2.
18. Mitra, S., Gupta,S.K. &**Ghosh, S**. (2015) A report on diversity of some phytophagous and predatory mites (Acari) encountered in crop fields in South Bengal with their economic importance. *Global J. for Research Analysis.* 4 (9), 201-205.ISSN No. 2277-8160. GJRA.
19. Ghosh P, **Ghosh S**. (2015). Relationship between Maternal Aging and Risk of Chromosome 21 Nondisjucntion: Where We Are and Where We Have To Go?J Cell SciMolecul Biol.;2(1): 114.**ISSN: -2350-0190**
20. **Ghosh S**, Ghosh P (2015) Genetic Etiology of Chromosome 21 Nondisjunction and Down syndrome Birth: Aberrant Recombination and Beyond. J Down SyndrChrAbnorm 1:102. ISSN: 2472-1115.
21. Ghosh P, **Ghosh S.** (2016) Genetics behind the birth of a child with Down syndrome.Journal of economy, environment and society, Vol. 1 Issue 1. ISSN:
22. Ray A., Hong C.S., Feingold E., Ghosh P., Ghosh P., Bhaumik P., Dey S,. Ghosh S. (2016) Maternal Telomere Length and Risk of Down Syndrome: Epidemiological Impact of Smokeless Chewing Tobacco and Oral Contraceptive on Segregation of Chromosome 21.Public Health Genomics 19 (1), 11-18.ISSN: 1662-4246. Impact Factor: 2.4

23. Roy, SS. **& Ghosh, S**. (2017) Effect of Toxic Heavy Metal Containing Industrial Effluent on Selected Life History Traits, Adult Morphology and Global Protein Expression Pattern of Drosophila melanogaster. ProcZoolSoc:https://doi.org/10.1007/s12595-017-0210-6 ISSN: 0373-5893.
24. Majumder, P., Singh, S.J., Nair. V., Bhaumik, P., Mukherjee, A., Ghosh, P., Bhattacharya M., **Ghosh, S**., Dey, S.K. (2017) Alliance of matrix metalloproteinase-9 (MMP-9) promoter gene polymorphism with chronic and aggressive periodontitis in Indian population. *Metagene,* ISSN-2214-5400, 12(2), 88-93. Impact Factor: 1.55.
25. Bhaumik P, Bhattacharya M, Ghosh P, **Ghosh S**,Dey SK. (2017) Telomere length analysis in Down syndrome birth.Mechanisms of Ageing and Development,163:20-26. Impact factor: 3.087.
26. Bhaumik P, Ghosh P, **Ghosh S**, Feingold E, Ozbek U, Sarkar B, Dey SK. (2017)Combined association of Presenilin-1 and Apolipoprotein E polymorphisms with maternal meiosis II error in Down syndrome births.Genet Mol Biol. ;40(3):577-585.
27. Maity B, Chakraborti S, Pramanick A, Saha S, Singha Roy S, Ray Chaudhuri A, Das M, **Ghosh S,** Stewart A. (2018)Atypical G protein β5 promotes cardiac oxidative stress, apoptosis, and fibrotic remodeling in response to multiple cancer chemotherapeutics.Cancer Res. Cancer Res;78(2):528-541.
28. Mitra S, Acharya S, **Ghosh S**. (2017) Faunal account of the predatory mites(Acari: Cunaxidae and Phytoseiidae from the Agre-horticultural crop from south Bengal with three new species from India. Journal of Entomology & Zoology Studies; 5(6): 1804-1811.
29. Bhaumik P, Ghosh P, Biswas A**, Ghosh S**, Pal S, Biswanath S, Dey SK. (2017). Rare intronic variation of TP 73 gene found in patient of Alzheimer Disease. *Int J of Hum Genet*. 17(4):158-168. DOI: 10.1080/09723757.2017.1421438
30. Roy, S., Aditya, G., & Ghosh, S. (2018). Impact of density and sex-dependent larval competition on selected life history traits of Drosophila melanogaster (Diptera: Drosophilidae). *The Canadian Entomologyt*, *150*(1), 87-99. doi:10.4039/tce.2017.56. Impact Factor: 1.2
31. Roy SS, Begum M, **Ghosh S.** (2018).Exploration of teratogenic and genotoxic effects of fruit ripening retardant Alar (Daminozide) on model organism *Drosophila melanogaster*. *Interdiscip Toxicol*.11(1):27-37. Impact factor: 0.8
32. Majumder P, Thou K, Bhattacharya M, Nair V, **Ghosh S**, Dey SK (2018). Association of tumor necrosis factor-α (TNF-α) gene promoter polymorphisms with aggressive and chronic periodontitis in the eastern Indian population.*BiosciRep*.38(4). pii: BSR20171212. Impact factor: 1.7.
33. Ray A, Oliver TR, Halder P, Pal U, Sarkar S, Dutta S, **Ghosh S**. (2018) Risk of Down syndrome birth: Consanguineous marriage is associated with maternal meiosis II nondisjunction at younger age and without any detectable recombination errors. *Am J Med Genet Part A*. 176 (11): 2342-2349doi: 10.1002/ajmg.a.40511. Impact factor: 2.19.
34. Mitra S, Acharya S, **Ghosh S**. (2018). New records of flat mites (Acari:Tenuipalpidae) from India. *Acarologia*. 58 (4): 850-854.Impact factor: 1.04
35. Majumder P, **Ghosh S**, Dey S.K. (2019)Matrix metalloproteinase gene polymorphisms in chronic periodontitis: a case–control study in the Indian population. *Journal of Genetics*.98(1):32https://doi.org/10.1007/s12041-019-1077-2. Impact Factor: 0.8.
36. Majumder P, Ray PP, **Ghosh S**, Dey SK. (2019) Potential effect of tobacco consumption through smoking and chewing tobacco on IL1 beta protein expression in chronic periodontitis patients: In Silico molecular docking study. IEEE/ACM Transactions on computational biology and bioinformatics. doi: 10.1109/TCBB.2019.2894737. Impact factor: 2.4.
37. Pal U, Halder P, Ray A, Dutta S, Sarkar S, **Ghosh S** (2019) Maternal MCM9 Polymorphisms are associated with Chromsome 21 Nondisjunction and Down syndrome birth in Bengali Population from Kolkata. *International Journal of Innovative Knowledge Concept*. 7: Special Issue 1; 43-50. ISSN 2454-2415.

38. Majumder P, Panda SK, **Ghosh S**, Dey SK (2019) Interleukin gene polymorphisms in chronic periodontitis: A case-control study in the Indian population. *Arch Oral Bio*. 101: 156-164. https://doi.org/10.1016/j.archoralbio.2019.03.015. Impact Factor: 1.5.
39. Halder P, Pal U, Ray A, Sarkar S, Dutta S &**Ghosh S** (2019). Polymorphisms of Folate Metabolism Regulators Increase Risk of Meiosis II Nondisjunction of Chromosome 21 in Oocyte.*Meta Gene 22:100606; DOI: 10.1016/j.mgene.2019.100606*
40. Begum, M., Paul, P., Roy, S.S., and **Ghosh, S**. (2019). The plasticizer Bisphenol-A alters life history traits and protein expression in Drosophila melanogaster. International Journal of Innovative Knowledge Concepts.7: Special Issue 1; 43-50. ISSN 2454-2415.
41. Singha Roy S, **Ghosh S.** (2019)Roy, S.S., Ghosh, S. Effects of Fruit Ripening Retardant Alar (Daminozide) on Behaviour of *Drosophila melanogaster*. *Proc ZoolSoc* .https://doi.org/10.1007/s12595-019-00316-3.
42. Roy SS, Ghosh S (2020).Genes regulating wing patterning in Drosophila melanogaster show reduced expression under exposure of Daminozide, the fruit ripening retardant. Environ ToxicolPharmacol. 75:103322;75:103322. doi: 10.1016/j.etap.2019.103322.
43. Mitra S, Acharya S, **Ghosh S**. (2020): Implication of five host plants on the life history-trait-of Tetranychus-urticae (Acari: Tetranychidae). Biologia (2020) DOI: 10.2478/s11756-020-00547-2.
44. BegumM, Paul P, Das D, Ghosh S. (2020)Endocrine-disrupting plasticizer Bisphenol A (BPA) exposure causes change in behavioral attributes in Drosophila melanogaster. Toxicology and Environmental Health Sciences : 12:237–246. doi.org/10.1007/s13530-020-00052-8.
45. Begum, M., Paul, P., Das, D. *et al.* (2021). Genes regulating development and behavior exhibited altered expression in *Drosophila melanogaster* exposed to bisphenol A: use of real-time quantitative PCR (qRT-PCR) and droplet digital PCR (ddPCR) in genotoxicity study. *Environ SciPollut Res.* https://doi.org/10.1007/s11356-020-10805-0
46. Hüls, Anke et al. (2021) Medical vulnerability of individuals with Down syndrome to severe COVID-19–data from the Trisomy 21 Research Society and the UK ISARIC4C survey. EClinicalMedicine, 33:100769.doi: 10.1016/j.eclinm.2021.100769.
47. Pal U, Halder P, Ray A, Sarkar S, Datta S, Ghosh P, et al. (2021) The etiology of Down syndrome: Maternal MCM9 polymorphisms increase risk of reduced recombination and nondisjunction of chromosome 21 during meiosis I within oocyte. PLoS Genet 17(3): e1009462. https://doi.org/10.1371/journal.pgen.1009462.
48. Halder P, Pal U, Paladhi P, Dutta S, Paul P, Pal S, Das D, Ganguly A, Dutta I, Mandal S, Ray A, Ghosh S. (2021) Evaluation of potency of the selected bioactive molecules from Indian medicinal plants with M^{Pro} of SARS-CoV-2 through in silico analysis. J Ayurveda Integr Med. 2022 Apr-Jun;13(2):100449. doi: 10.1016/j.jaim.2021.05.003. PMID: 34054246; PMCID: PMC8139275.
49. Dutta S, Paladhi P, Pal S, Bose G, Chatterjee R, Chakravarty B, Ghosh S (2021) Prevalence of Y chromosome microdeletion in azoospermia factor subregions among infertile men from West Bengal, India. *Molecular Genetics and Genomic Research*. 9, e1769. Doi: 10.1002/mgg3.1769
50. Begum, M., Paul, P., Das, D. & Ghosh. (2021). Effects of Endocrine Disrupting Agent Bisphenol A on Selected Behavior and Related Gene Expression in Drosophila melanogaster. *Proceedings of the Zoological Society*, 74(4):546–557.
51. Emes, D.; Hüls, A.; Baumer, N.; Dierssen, M.; Puri, S.; Russell, L.; Sherman, S.L.; Strydom, A.; Bargagna, S.; Brandão, A.C.; et al. (2021) COVID-19 in Children with Down Syndrome: Data from the Trisomy 21 Research Society Survey. *J. Clin. Med.* 10, 5125. https://doi.org/10.3390/jcm10215125.
52. Pal S, Paladhi P, Dutta S, Bose G, Ghosh P, Chattopadhyay R, Chakravarty B, Saha I, **Ghosh S** (2021). Novel variations in spermatogenic transcription regulators RFX2 and TAF7 increase risk of azoospermia. *Journal of Assisted Reproduction and Genetics*. 38(12):3195-3212. doi: 10.1007/s10815-021-02352-5.
53. Halder P, Pal U, Ganguly A, Ghosh P, Ray A, Sarkar S, Ghosh S (2021)Understanding etiology of chromosome 21 nondisjunction from gene x environment models. *Nature Scientific report.*1(1):22390.doi: 10.1038/s41598-021-01672-x.

54. Paladhi P, Pal S, Dutta S, Bose G, Ghosh P, Chattopadhyay R, Chakravarty B, Saha I, **Ghosh S** (2022). Novel mutations of TSPY1 gene associate spermatogenic failure among men. *Reproductive Sciences*. *Reprod. Sci.* **29,** 1241–1261 doi: 10.1007/s43032-021-00839-1.
55. Hüls A, Feany PT, Zisman SI, Costa ACS, Dierssen M, Balogh R, Bargagna S, Baumer NT, Brandão AC, Carfi A, Chicoine BA, Ghosh S et al. (2022) COVID-19 Vaccination of Individuals with Down Syndrome—Data from the Trisomy 21 Research Society Survey on Safety, Efficacy, and Factors Associated with the Decision to Be Vaccinated. Vaccines 2022, 10, 530. https://doi.org/10.3390/vaccines10040530.
56. Halder P, Hüls A, Feany PT, Baumer N, Dierssen M, Bargagna S, Costa ACS, Chicoine BA, Rebillat AS, Sgandurra G, Valentini D, Rohrer TR, Levin J, Lakhanpaul M, Carfì A, Sherman SL, Strydom A, Ghosh S. (2022). Differences in clinical presentation, severity, and treatment of COVID-19 among individuals with Down syndrome from India and high-income countries: Data from the Trisomy 21 Research Society survey. *J Glob Health*; 8;12:05035. doi: 10.7189/jogh.12.05035. PMID: 35932238; PMCID: PMC9356581.
57. Das D, Begum M, Paul P, Dutta I, Mandal S, Ghosh P, Ghosh S. (2022). Effects of plant growth retardant daminozide (Alar) on neuromuscular co-ordination behavior in *Drosophila melanogaster*. J *Toxicol Environ Health* A.17;85(22):921-936. doi: 10.1080/15287394.2022.2114564. PMID: 35996764.
58. Ganguly A, Halder P , Pal U, Sarkar S , Datta S , Pati S , Ghosh S (2022). Risk of Atrioventricular Septal Defects in Down syndrome: Association of MTHFR C677T and RFC1 A80G polymorphisms in Indian Bengali cohort. *J Hum Genet Genomics* 5(1): A-10-350-2. doi: 10.52547/jhgg.69.
59. Halder P, Pal U, Ganguly A, Ghosh P, Ray A, Sarkar S, Ghosh S.(2022) Genetic aetiology of Down syndrome birth: novel variants of maternal DNMT3B and RFC1 genes increase risk of meiosis II nondisjunction in the oocyte. *Mol Genet Genomics*. 298(1):293-313. doi: 10.1007/s00438-022-01981-4. PMID: 36447056.

Editorial Board Membership

Hereditary Genetics: Current Research (Journal; ISSN: 2161-1041)

Chief Guest Editor: Frontier in Genetics Special issue on “Down Syndrome: Genetic and Epigenetic Influences on this Multi-faceted Condition”.

Major Scientific Findings

Discovered and reported 61 new mutations including transition, deletion, frameshift mutations in the gene SYCP3, MAD2L1, MCM9, RNF212, PRDM9, MTFR, MTRR, RFC1, DNMT3B in relation to chromosomal nondisjunction and DAZL, TSPY1, RFX1, TAF7 in relation to male infertility from Indian Bengali populations.

Peer-Reviewer

Acted as reviewer for the journals Human Genetics (Spinger), American Journal of Medical Genetics A (Willy), BMC genomics, Clinical Genetics, BMC open, Environmental Toxicology, Proceeding of Zoological society (Springer), Biological Science, International Journal of Global health, epidemiology and Genetics, Journal of cell and Molecular Biology, Molecular Cytogenetics, BMC Medical Genomics, Cell cycle etc.

Community Services

I do organize regular outreach programs to the rural area of West Bengal, that include health camps for genetic disorder screening among the poor and marginalised people and also for diabetes detection and free medicine distribution. My team has organized COVID19 Vaccination Clinic for Down syndrome individuals in collaboration with Government of West Bengal and IPGMER, Kolkata.

Collaborators:

1. Prof. Eleanor Feingold. Department of Human Genetics. Pittsburgh University. Pittsburgh. Pennsylvania. USA.
2. Prof. Stephanie Sherman. Department of Human Genetics. Emory University. Atlanta. USA.
3. Dr.Anke Huel. Department of Public Health. Emory University. Atlanta. USA.
4. Dr. Tiffany Oliver. Department of Biological Science. Spellman College. Atlanta. USA.
5. Prof. Eitan Okun. The Mina and Everard Goodman Faculty of Life Sciences, Bar Ilan University, Ramat Gan, Israel.
6. Dr.Supratim Dutta. Department of Paediatric Medicine. IPGMER. Kolkata. India.
7. Prof.Subrata Kumar Dey. Brainware University. West Bengal. India. Kolkata.

Declaration

I do hereby, declare that information furnished above by me is true as per my knowledge.

Signature of Dr.Sujay Ghosh