



**Name: Sukla Ghosh**

**Education:**

**B.Sc. (Honors)**

Visva- Bharati University, 1977

**M.Sc. (Zoology)**

Visva- Bharati University, 1979

**Ph.D (Biochemistry)**

Calcutta University, 1987

Dissertation Title: Glucose homeostasis in human fetuses.

**Research interests:**

Molecular basis of pattern formation and growth control during jaw and spinal cord development and regeneration.

**Professional appointments:**

**2015-present: Professor**

Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta, Kolkata, India

**2005-2015: Associate Professor**

Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta, Kolkata, India

**2003 - 2005: Reader**

Department of Zoology, University of Delhi, Delhi, India

**2000 - April 2003: Postgraduate Researcher**

Department of Cell and Developmental Biology, University of California, Irvine, CA.

Supervisor: Dr. David Gardiner and Dr. Susan V. Bryant

**1999 - 2000: Senior Research Associate**

Biophysics Division, Saha Institute of Nuclear Physics, Calcutta, India.

**1998-1999: Postdoctoral Research Associate**

Chittaranjan National Cancer Institute, Calcutta, India. Supervisor: Dr. A. Chatterjee.

**1995 -1997: Postdoctoral Research Associate**

Muscle Development Unit, Royal Veterinary College, London, U.K. Supervisor: Dr. G. K. Dhoot

**1992-1994: Postdoctoral Research Associate**

Developmental Biology Unit, Division of Cellular and Molecular Biology, Institute of Child Health, London, U.K. Supervisor: Dr. P. Ferretti

**1987-1990: Postdoctoral Research Associate**

Department of Biochemistry, Meharry Medical College, Nashville, TN. Supervisor: Prof. Salil K. Das

**Grants and Award:**

- National Merit Scholarship of the Ministry of Education, Government of India (1977-78).
- J.M. Dasgupta Memorial Award (1984) for the best paper presented in the Biochemistry session during the convention of Chemists (Indian Chemical Society).

**Extramural Research Grants awarded:**

1. Awarded a project entitled "Characterization of regeneration permissive environment created after spinal cord injury in zebrafish" funded by DST (Govt. Of India), EMR/2014/000536 – completed (44.46 lakh INR)
2. Awarded a project entitled "Understanding the molecular basis of cellular dedifferentiation during regeneration of Zebrafish spinal cord: insight from microarray analysis." Funded by DBT, Govt. of India (DBT/BT/PR13953/AAQ/03/523/2010) – Completed. (47.86 lakh INR).
3. Awarded an international collaborative project with Dr. S. Mathavan, Genome Institute of Singapore, by DST. Project entitled -"High density microarrays based genome-wide screening, identification and functional analysis of putative target genes involved in Zebrafish spinal cord regeneration" DST, Govt. of India, INT/CP-STIO/2006-2007/39/2006) – Completed. (4.57 lakh INR).
4. Awarded a project entitled "Spinal cord regeneration in urodele: a model to study neurogenesis, axonal survival and regrowth" funded by DST (Govt. of India, SR/SO /AS-26/2004) - Completed. (24.23 lakh INR).
5. Awarded a project entitled "Cellular and molecular mechanisms of regeneration in zebrafish spinal cord" funded by DBT (Govt. of India, BT/PR5489/AAQ/03/245/2004) – Completed. (19.08 lakh INR).
6. Awarded DBT-CREST (Cutting-edge Research Enhancement and Scientific Training) 2010-2011 funded by DBT, Govt. of India (BT/HRD/03/01/2002) – Completed. (5 lakh INR).

**Reviewer of grant proposal:** BBSRC (UK), DBT (Govt. of India), DST (Govt. of India).

**Teaching Experiences:**

- Department of Biophysics, Molecular biology and Bioinformatics, University of Calcutta.  
M.Sc. course taught both practical and theory in **Developmental Biology, Cell Biology and Neurobiology. Reoriented the curriculum for Developmental Biology and introduced one semester lab course in the department on the same topic.**  
**Co-ordinating and teaching the two semester course on Cell Biology. Introduced for the first time modern topics in Stem Cell Biology in the curriculum of the department.**  
**Designed and taught the developmental biology course for the RET students of the Department.**
- Department of Zoology, University of Delhi, M.Sc. course, taught **Developmental Biology and Comparative Animal Physiology. Designed and introduced Developmental Biology course in the curriculum of the department.**
- Department of Biophysics, Molecular biology and Bioinformatics, University of Calcutta , **Supervision and mentoring of Ph. D student /researcher, Number of Ph.D student awarded Ph.D degree -1, number of Ph.D student working at present -1.**

**Extramural teaching:**

- Guest faculty, Bose Institute, Kolkata Integrated Ph. D. course, taught **Developmental Biology.**
- Guest faculty, IAACS, Kolkata Integrated Ph. D course, taught **Developmental Biology**
- Guest faculty, Dept. of Microbiology, West Bengal State University, Barasat, M. Sc. Course, taught **Developmental Biology.**

**Teaching experience : International**

- Supervision and mentoring undergraduate student researcher, University of California, Irvine.
- Supervision and mentoring of graduate student researcher, Royal Veterinary College, London.

**Intramural teaching experience**

- Department of Biochemistry, IPGME&R, University of Calcutta, Kolkata, M.D course taught **Vertebrate Embryology.**
- Guest faculty, B.C Guha Center for Biotechnology, University of Calcutta, M.Sc. course, taught **Developmental Biology.**
- Guest faculty, S.N. Pradhan Center for Neuroscience, University of Calcutta, M.Sc. course, taught **Developmental Biology and Cell Biology.**
- Guest faculty, Department of Zoology, University of Calcutta, Special paper in M. Sc. Course, taught **Stem cell Biology and Regeneration.**
- Bose Institute, Kolkata, Guest faculty for teaching **Developmental Biology, Integrated Ph.D course**

**Memberships in professional Societies:**

Society of Biological Chemists (India).

British Society of Developmental Biologists (U.K).  
Indian Society of Developmental Biology  
DNA Society of India

**Collaborators:**

Dr. Patrizia Ferretti, UCLondon, Institute of Child Health, London.  
Dr. S. Mathavan, Genome Institute of Singapore, Singapore.

**Reviewer of Peer reviewed journals:**

**PlosOne, Neuroscience, Biology of Cell, Frontiers of Medicine, Scientific Reports**

**List of Publications:**

1. Subhra Prakash Hui, Tapas Chandra Nag and **Sukla Ghosh** 2019 Ultrastructural validation of different neural cells and progenitors involved in regenerating zebrafish cord. International J. Developmental Biology ( **special issue on Developmental Biology In India**) **ISSN: 0214-6282, Impact factor 2.11, In press**
2. Sukla Ghosh and Subhra Prakash Hui 2018 Axonal regeneration of zebrafish spinal cord. Regeneration **Online ISSN: 2052-4412 DOI:10.1002/reg2.99, Invited review.**
3. Subhra Prakash Hui and **Sukla Ghosh** 2016 Various Modes of Spinal Cord Injury to Study Regeneration in Adult Zebrafish. Bioprotocols Vol 6 Issue 23 DOI:10.21769/BioProtoc.2043 **ISSN: 2331-8325. Invited article**
4. **Sukla Ghosh** and Subhra Prakash Hui 2016 Regeneration of Zebrafish CNS: Adult Neurogenesis. Neural Plasticity ArticleID5815439 [doi:10.1155/2016/5815439](https://doi.org/10.1155/2016/5815439) . **Impact factor 3.582 ISSN: 2090-5904**
5. **Sukla Ghosh** 2016 Human regeneration: an achievable goal or a dream? J. Biosciences DOI 10.1007/s12038-016-9589-x **Impact factor 2.067 online ISSN:0973-7138**
6. C Ganguly, B Samanta, GG Thakurata, N Chandra, **S Ghosh**, KL Mukherjee and Nirajan Bhattacharya 2016 Anthropometric Measurement of the Human Fetus : in Human Fetal Growth and Development, 67-83, Chapter 6, Springer International publishing Switzerland (eds Bhattacharya and Stubblefields). **Book Chapter**
7. C Ganguly, GG Thakurata, **S Ghosh**, KL Mukherjee and Nirajan Bhattacharya 2016 Human fetus: Carbohydrate metabolism : in Human Fetal Growth and Development, 67-83, Chapter 7, Springer International publishing Switzerland (eds Bhattacharya and Stubblefields). **Book Chapter**
8. Subhra Prakash Hui, Tapas Chandra Nag, **Sukla Ghosh**. 2015 Characterization of proliferating neural progenitors after spinal cord injury in adult zebrafish. Plos

One 10(12): e0143595. doi:10.1371/journal.pone.0143595 **Impact factor 4.41**  
**ISSN: 1932-6203.**

9. Subhra Prakash Hui, Dhriti Sengupta, Triparna Sen, Sudip Kundu, Serene Gek Ping Lee, Sinnakaruppan Mathavan, **Sukla Ghosh**. 2014. Genome wide expression profiling during spinal cord regeneration identifies comprehensive cellular responses in zebrafish. PLoS ONE 9(1): e84212. doi:10.1371/journal.pone.0084212. **Impact factor 3.234** **ISSN. 1932-6203.**
10. Subhra Prakash Hui James R Monaghan, S. Randal Voss and **Sukla Ghosh**. 2013. Expression pattern of Nogo-A, MAG and NgR in regenerating urodele spinal cord. Developmental Dynamics. 242(7):847-860.**Impact factor 2.668**  
**online ISSN: 1097-0177**
11. Subhra Prakash Hui, Anindita Dutta and **Sukla Ghosh** 2010. Cellular response after crush injury in adult zebrafish spinal cord. Developmental Dynamics. 239:2962-2979. **Impact factor 2.864** **online ISSN: 1097-0177**
12. **Ghosh, S.**, Roy, S., Seguin, C., Bryant, S.V., and Gardiner D. M. 2008. Analysis of the expression and function of Wnt-5a and Wnt-5b in developing and regenerating axolotl (*Ambystoma mexicanum*) limbs. Development Growth and Differentiation. 50:289-297. **Impact factor 2.317** **Online ISSN: 1440-169X**
13. **Ghosh, S.**, Roy, S., Pfeifer, A., Schmitt, M., Verma, I. M., Bryant, S. V., and Gardiner, D.M. 2001. Advances in functional analysis in urodele amphibians. Axolotl newsletter 29:4-8, Ambystoma Genetic Stock Center. University of Kentucky, USA <http://www.ambystoma.org> or [ambystoma@uky.edu](mailto:ambystoma@uky.edu).
14. **Ghosh, S.**, and Dhoot, G. K. 1998. Both avian and mammalian embryonic myoblasts are intrinsically heterogenous. J. Mus. Res. & Cell Motility. 19:787-795. **Impact factor 1.981** **ISSN: 0142-4319**
15. Ghosh, S., and Dhoot, G. K. 1998. Evidence for distinct fast and slow myogenic cell lineages in human foetal skeletal muscle. J. Mus. Res. & Cell Motility. 19:431-441. **Impact factor 1.981** **ISSN: 0142-4319**
16. Ferretti, P., and **Ghosh, S.** 1997. Expression of regeneration associated cytoskeletal proteins reveals differences and similarities between regenerating organs. Developmental Dynamics. 210:288-304. **Impact factor 3.08** **online ISSN: 1097-0177**
17. **Ghosh, S.**, Thorogood, P. V. T., and Ferretti, P. 1996. Regeneration of lower and upper jaws in urodeles is differentially affected by retinoic acid. Int. J. Dev. Biol. 40:1161-1170. **Impact factor 2.959** **ISSN: 0214- 6282**

18. **Ghosh, S.**, Thorogood, P. V. T., and Ferretti, P. 1994. Regenerative capability of upper and lower jaws in the newt. *Int. J. Dev. Biol.* 38:479-490. **Impact factor 2.959 ISSN: 0214- 6282**
19. Ferretti, P., Corcoran, J. P. T., and **Ghosh, S.** 1993. Expression and regulation of keratins in the wound epithelium and mesenchyme of the regenerating newt limb. In :*Progress in Clinical and Biological Research*, vol. 383B: Limb development and regeneration (J.F. Fallon et al. ed.), John Wiley & Sons, New York, pp 261 - 269. **Book Chapter.**
20. Mukherjee, S., **Ghosh, S.**, Rodger, L., Nair, T., and Das, S. K. 1994. Toxic effects of fatty acid anilides on oxygen defense system of guineapig lungs and erythrocytes. *J. Biochem. Toxicol.* 9:1-8. **Impact factor 1.38 Online ISSN: 1099-0461**
21. Das, S. K., **Ghosh, S.**, and Mukherjee, S. 1993. Role of thyroid hormone in denovo synthesis of cholinephosphotransferase in guinea pig lung mitochondria and microsomes. *Exp. Lung. Res.* 19:685- 697. **Impact factor 1.22 ISSN: 0190-2148**
22. **Ghosh, S.**, Oten, P. W., Mukherjee, S., and Das, S. K. 1991. Study of properties of cholinephosphotransferase from fetal guinea pig lung mitochondria and microsomes. *Molecular and Cellular Biochemistry* 101:157-166. **Impact factor 2.057 ISSN: 0300-8177.**
23. **Ghosh, S.**, Mukherjee, S., and Das, S. K. 1990. Existence of cholinephosphotransferase in mitochondria and microsomes of liver and lung of guinea pig and rat. *Lipid* 25:296-300. **Impact factor 2.557 ISSN 0024-4201**
24. **Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1989. Glycogen content and structure and activity of some enzymes of glycogen metabolism in human fetal organs. *Ind. J. Med. Res.* 90:147-153. **Impact factor 2.061 ISSN: 0971-5916**
25. **Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1986. Glucose homeostasis in human fetuses. *Ind. J. Pediatr.* 53:281-289. **Impact factor 0.73 ISSN :00195456**
26. Samanta, B. K., Chandra, N. C., **Ghosh, S.**, and Mukherjee, K. L. 1984. Aldose metabolism in developing human fetal brain and liver. *Experientia* 40:1420-1422. **Impact factor 2.072 ISSN: 0014-4754**

**Conference attended as Invited Speaker:**

1. Invited speaker in **Indian Zebrafish Investigators Meeting** 03-06 July, 2018, CCMB Hyderabad, India; presentation on “**CNS injury: Cellular , Ultrastructural and Molecular analysis of spinal cord regeneration in Zebrafish**”.

2. Invited Speaker in **39<sup>th</sup> Mahabaleswar seminar on recent advances in Zebrafish Genetics and Development, March 21-23, 2015, Alibaug, Maharashtra**. Presented oral presentation on **“Spinal cord repair in Zebrafish: Adult Neurogenesis.”**
3. Invited speaker in One- day international seminar on Current Thoughts in Cell Sciences, on the 8<sup>th</sup> of November 2015, at the Centre for Research in Nanoscience & Nanotechnology. Organized by Immunology and Regenerative Medicine Unit, Department of Zoology, CU. **Title of the talk :Regenerating spinal cord : expression of pluripotency associated markers in neural progenitors**
4. Invited Speaker in **Neurocon 2013 Role of Transcription Factors in Neurogenesis and Repatterning after CNS injury. International Conference on Neurodegenerative and Neurodevelopmental Disorders: Translational Aspects. Jan 17-20, 2013. Cell biology and Physiology Division IICB, Kolkata.**
5. Invited speaker **SBC 82<sup>nd</sup> Annual Meeting of Society of Biological Chemists (India) and International Symposium on Genomes: Mechanism and Function, December 2-5, 2013**. Transcriptome profiling of regenerating zebrafish spinal cord. **School of Life Sciences, University of Hyderabad SBC (India).**
6. Invited speaker in **“Neuro Update - 2012”, 22-23 September, 2012; Kolkata** and presented oral presentation on **“Spinal cord regeneration in urodele and fish: model to study axonal regrowth.”**
7. Invited speaker in Department of Biomedical Science, The University of Sheffield, **U.K. 8 December 2011** and presented oral presentation on **“Cellular and molecular mechanisms of regeneration in Zebrafish spinal cord.”**
8. Attended **Gordon Research Conference “Tissue Repair and Regeneration”. June 5-10, 2011. Colby Sawyer College, New London, New Hampshire, USA** and presented work on **“Cell Proliferation and Neurogenesis in Adult Zebrafish Spinal Cord after Injury.”**
9. Invited speaker in **“NEUROCON 2011” International symposium on Neuron: Degeneration, regeneration and proliferation 29-31 January, 2011, Kolkata** and presented an oral presentation on **“Cell proliferation and neurogenesis in adult Zebrafish spinal cord after injury.”**
10. Invited speaker in **“XXXIV All India Cell Biology Conference& Symposium on Quantitative Biology of the Cell” Bose Institute, Kolkata, December 4-6, 2010** and presented an oral presentation on **“Neuronal and axonal regeneration after spinal cord injury in Zebrafish spinal cord.”**
11. Invited speaker in **“NEUROCON 2009”, International symposium on Neurodegeneration and brain aging: basic sciences to therapy, February 8-10,**

**2009, Kolkata** and presented an oral presentation on “**Regenerating Zebrafish spinal cord, a model to study neurogenesis.**”

**Abstract published and conference attended:**

**Ghosh, S.** and Hui, S.P. 2011. Cell Proliferation and Neurogenesis in Adult Zebrafish Spinal Cord after Injury. Gordon Research Conference “Tissue Repair and Regeneration”. June 5-10, 2011. Colby Sawyer College, New London, New Hampshire, USA.

**Ghosh, S.**, and Gardiner D.M. 2002. Urodele spinal cord regeneration as a model for axonal survival and regrowth. California Spinal Cord Injury/ Neural Regeneration Consortium Annual Meeting. March 20-21, University of California, Irvine, U.S.A.

Ferretti, P., Corcoran, J. P. T., and **Ghosh, S.** 1997. Is there a role for intermediate filament in limb and jaw regeneration in amphibians? 12th Meeting of the European Cytoskeletal Forum (ECF), Sept. 6-11, Sienna. Italy.

**Ghosh, S.**, Thorogood, P. V. T., and Ferretti, P. 1996. Jaw regeneration in urodele is affected by retinoic acid. 15th Singer Symposium, Models of Regeneration : Lower versus Higher Vertebrates, March 21-22, Institute of Child Health, London , U.K.

Ferretti, P., Thorogood, P. V. T., and **Ghosh, S.** 1993. Differential expression of regeneration associated proteins in regenerating limbs and jaws. Repair and Regeneration in the Inner Ear, 6-8 July, Wye College, Wye, Kent, U.K.

Das, S. K., Desai, U., **Ghosh, S.**, Nair, T., and Mukherjee, S. 1993. Toxic oil syndrome: Effect of fatty acid anilide on lung. 15th International Congress of Nutrition, Sept. 26-Oct. 1, Adelaide, Australia.

Desai, U., Mukherjee, S., **Ghosh, S.**, and Das, S. K. 1992. A model of transcellular toxicity and inflammation to lung by vasculotoxic agent: structural changes. Proceedings of U.S and Canadian Academy of Pathology Meeting. March 14-20, Atlanta, Georgia, U.S.A.

Ferretti, P., **Ghosh, S.**, and Corcoran, J. P .T. 1992. Expression and regulation of keratins in the wound epithelium and mesenchyme of the regenerating newt limb. Fourth International Conference on Limb Development and Regeneration, July 19-24, Asilomar Conference Center, U.S.A.

**Ghosh, S.**, Oten, P. W., Mukherjee, S., and Das, S .K. 1990. Study of properties of cholinephosphotransferase from fetal guineapig lung mitochondria and microsomes. FASEB Annual Meeting, Washington D.C., U.S.A.

Das, S. K., Mukherjee, S., and **Ghosh, S.** 1989. Effects of physical stress on peroxide scavengers, lipid peroxidation and deformability of sickle cell trait RBC. Annual Meeting of the Comprehensive Sickle Cell Disease Centre, Durham, North Carolina, U.S.A.

**Ghosh, S.**, Mukherjee, S., and Das, S. K. 1989. Bimodal distribution of Cholinephosphotransferase in mitochondria and microsomes of liver and lung of guineapig and rat. FASEB 73rd Annual Meeting, New Orleans, Louisiana, U.S.A.



Ray, R., **Ghosh, S.**, and Mukherjee, K. L. 1984. Lactate dehydrogenase activity and isozymes of human fetal testis and ovary. 21st Annual Convention of Chemists and Ninth International symposia, Calcutta, India.

**Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1983. The key enzymes of gluconeogenesis in human fetal organs. 52nd Annual Meeting, Society of Biological Chemists, Pune, India.

**Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1983. Gluconeogenesis in human fetuses. Third Asia-Oceania Congress of Perinatology, Calcutta, India.

**Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1982. Glycogenolytic activity in human fetal liver. 51st Annual Meeting, Society of Biological Chemists, Chandigarh, India.

**Ghosh, S.**, Guhathakurta, G., and Mukherjee, K. L. 1981. Glycogen contents of human fetal organs. 50th Annual Meeting, Society of Biological Chemists, Baroda, India.

**Ghosh, S.**, and Mukherjee, K. L. 1981. Blood sugar homeostasis in human fetuses. Annual Scientific Conference of National Academy of Medical Sciences, Calcutta, India.

Samanta, B. K., Chandra, N. C., **Ghosh, S.**, and Mukherjee, K. L. 1980. Aldose reductase and Glucose-6-phosphate dehydrogenase activities of human fetal liver and brain. Golden Jubilee Meeting, Society of Biological Chemists, Bangalore, India.