



**Name:** Angshuman Bagchi, Assistant Professor of Biochemistry, Department of Biochemistry and Biophysics

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**Qualification: M.Sc, PhD (From Bose Institute, P-1/12, CIT Scheme VIIM, Kankurgachi, Kolkata – 700 054)**

Recipient of merit certificate after completion of a course titled "Biostatistics for Physicians: A short Course" conducted by Indiana University School of Medicine, Indianapolis, IN, USA during 11/06/2008 to 11/09/2008

**EMPLOYMENT BACKGROUND:**

**Worked as a visiting research scientist in Department of Computer Science, Hong Kong Baptist University, Hong Kong from 1<sup>st</sup> Januray, 2014 to 12<sup>th</sup> May, 2014**

**Period:** Current

Currently working as Assistant Professor of Biochemistry in Department of Biochemistry & Biophysics, University of Kalyani, Kalyani, Nadia

**Period:** May, 2009 to December, 2010

**Employer:** Buck Institute for Age Research, 8001 Redwood Blvd., Novato, CA-94945, USA

**Job Title:** Postdoctoral Research Fellow

**Responsibilities / Achievements:** Conducting research in bioinformatics and computational biology

**Period:** February, 2008 to April, 2009

**Employer:** Center of Computational Biology and Bioinformatics, Department of Medical and Molecular Genetics, Indiana University Purdue University, Indianapolis, USA

**Job Title:** Postdoctoral Research Fellow

**Responsibilities / Achievements:** Conducting research in bioinformatics

**Membership:** International Society for Computational Biology (ISCB)

**Teaching Areas:** Cell Biology, Enzymology, Bioenergetics, Metabolism, Basic Biochemistry, **Bioinformatics and Computational Biology**

**Areas of Research: Bioinformatics, Computational Biology**

**Research Project: DBT Funded Research Project titled "Structural insight into the interactions of the heat shock proteins and heat shock transcription factor  $\sigma^{32}$  in *E. coli*."**

**PhD students and their present positions:**

1. Ms. Semanti Ghosh – JRF (URS)
2. Mr. Sujay Ray - JRF
3. Ms. Simanti Bhattacharya – SRF (UGC-NET)
4. Ms. Sanchari Bhattacharya – JRF (DBT Project Fellow)

## **Fellowships / Awards:**

**RECIPEINT OF YOUNG SCIENTIST AWARD FROM THE HONOURABLE VICE CHANCELLOR, UNIVERSITY OF KALYANI, ON 15<sup>th</sup>. AUGUST, 2014**

**2008-2010: NIH fellowship for postdoctoral research work**

**2008-2009: Travel Fellowship Award by the National Science Foundation, USA**

**Fellowship from Department of Biotechnology (DBT), India to pursue Post M.Sc. Advanced Diploma in Bioinformatics, 2001-2002**

**Recipient of Best Paper Award for the paper titled "Determination of Molecular Structure for Drug Design Using Variable String Length Genetic Algorithm" by Angshuman Bagchi, Sanghamitra Bandyopadhyay and Ujjawal Maulik, in the International Conference on High Performance Computing (HiPC) held during Dec. 18-21, 2003**

**Merit Scholarship for Secondary and Higher Secondary Examinations, 1992-1994**

**The paper titled "Hypoglycosylation of dystroglycan due to T192M mutation: A molecular insight behind the fact" which appeared in the journal GENE has received more than 200 views after its online appearance. The statistics was received from the Publisher-ELSEVIER**

## **PUBLICATIONS:**

### **Conferences/ Meetings/ Workshops**

1. "Analysis of Features from Protein-Protein Hetero-Complex Structures to Predict Protein Interaction Interfaces using Machine Learning" (**Oral Presentation**) **First International Conference on Computational Intelligence: Modelling**, Techniques and Applications (CIMTA – 2013), September 27-28, 2013, organized by Department of Computer Science & Engineering, University of Kalyani
2. "Structural bioinformatic study of sulfur compound metabolizing *sox* operon" (**Oral Presentation**) **Bengal Science Lecture and Satellite Conference on Last 100 Years of Science in India**, January 9-10, 2013, organized by West Bengal State Council of Science and Technology and Department of Science and Technology, Government of West Bengal
3. "Identification of amino acid residues in protein-protein interaction interfaces using machine learning and a comparative analysis of the generalized sequence- and structure based features employed" (**Oral Presentation**) **International Conference on Intelligent Infrastructure**, December 1-2, 2012, organized by Computer Society of India (CSI), at Science City, Kolkata, India
4. "Prediction of protein-protein interactions using machine learning techniques" (Oral Presentation) Conference on Informatics & Integrative Biology (CIIB- 2011), December 14-16, 2011, at Bose Institute, A.J.C. Bose Centenary Building, P-1/12, CIT Scheme - VII M, Kolkata - 700 054, India
5. **"Prediction of protein-protein interaction with an eye to mutational analysis" (Poster) 9<sup>th</sup> Annual International Conference on Computational Systems Bioinformatics (CSB), from August 16-18, 2010, at Stanford University, Stanford, USA**
6. **"Prediction of protein-protein interaction sites and their impact on genetic disease" (Oral Presentation) 7<sup>th</sup> Annual Rocky Mountain Bioinformatics Conference, from December 10-12, 2009, Snowmass, Aspen, Colorado, USA**
7. **"In Silico Functional Profiling of Human Disease-Associated and Polymorphic Amino Acid Substitutions" (Poster) 7<sup>th</sup> Annual Rocky Mountain Bioinformatics Conference, from December 10-12, 2009, Snowmass, Aspen, Colorado, USA**
8. **"Prediction of protein-protein interactions and their impact on genetic disease" (Oral Presentation) 10th. Annual Symposium of Biomedical Computation at Stanford, held on November 7, 2009 at Stanford University, Stanford, USA**

9. "Homology modeling and docking studies of human apolipoprotein E and heparanase" (Poster) Annual Scientific Retreat of Louisiana Cancer Research Consortium, from March 27-28, 2009 at University Center, Xavier University of Louisiana, LA, USA
10. "Analyses of features for the prediction of protein-protein interactions in protein hetero-complexes and their impact on human disease" (Oral Presentation) 6<sup>th</sup> Annual Rocky Mountain Bioinformatics Conference, from December 4-7, 2008, Snowmass, Aspen, Colorado, USA
11. "Analyses of features for prediction of protein-protein interactions in protein heterocomplexes and their impact on human disease" (Poster) 2<sup>nd</sup> Annual Midwest Symposium on Computational Biology and Bioinformatics, held on October 4, 2008 at Northwestern University, Urbana-Champaign, IL, USA
12. "Analyses of features for prediction of protein -protein interactions in heterocomplexes and their impact on human disease" (Poster) in the Annual Symposium on Medical and Molecular Genetics, held on September 27, 2008, at Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, USA

#### Invited Talks

1. "Molecular modeling of protein interactions in the *sox* operon", Pittsburgh Supercomputing Center, Pittsburgh, Pennsylvania, USA on 4<sup>th</sup> April, 2010
2. "Prediction of protein-protein interactions", Department of Biostatistics and Bioinformatics, Duke University School of Medicine, Durham, North Carolina, USA on 22<sup>nd</sup> April 2009
3. "Structural biology of sulfur bacteria (*Sox*)", Max Planck Institute for Molecular Genetics - Ihnestraße 73 - 14195 Berlin, on 22<sup>nd</sup> January, 2008
4. "Structural Bioinformatic Study of Sulfur Compound Metabolizing *sox* operon", A five day National Workshop on "Use of Recombinant DNA in Modern Biotechnological Research" during December 17 - 21, 2013, at Biotechnology Department, National Institute of Technology, Durgapur
5. "Homology modeling of a dimeric repressor protein SoxR and analysis of its dimeric interface" (Tutorial) DBT Sponsored National Workshop on To Predict and Model Biological Molecules and System, from March 16-18 2011, at Department of Biochemistry and Biophysics, University of Kalyani

## Publications in Selected Peer Reviewed Journals

Structural insight into SoxC and SoxD interaction and their role in electron transport process in the novel global sulfur cycle in *Paracoccus pantotrophus*

**Angshuman Bagchi** and Pradosh Roy

Biochemical Biophysical Research Communication (**Impact Factor: 2.5**), 2005, Vol. 331, Pg. no. 1107-1113

A structural study towards the understanding of the interactions of SoxY, SoxZ, and SoxB, leading to the oxidation of sulfur anions via the novel global sulfur oxidizing (sox) operon

**Angshuman Bagchi** and Tapash Chandra Ghosh

Biochemical Biophysical Research Communication (**Impact Factor: 2.5**), 2005, Vol. 335, Pg. no. 609-615

Homology modeling of a transcriptional regulator SoxR of the lithotrophic sulfur oxidation (sox) operon in  $\alpha$ -Proteobacteria

**Angshuman Bagchi**, Debjani Roy and Pradosh Roy

Journal of Biomolecular Structure and Dynamics (**Impact Factor: 4.986**), 2005, Vol. 22, Pg. no. 571-578

*Tetrathlobacter kashmirensis* gen. nov., sp. nov., a novel mesophilic, neutrophilic, tetrathionate-oxidizing, facultatively chemolithotrophic betaproteobacterium isolated from soil from a temperate orchard in Jammu and Kashmir, India

Wriddhiman Ghosh, **Angshuman Bagchi**, Sukhendu Mandal, Boomba Dam and Pradosh Roy

International Journal Systematic Evolutionary Microbiology (**Impact Factor: 2.112**), 2005, Vol. 55(Pt 5), Pg. no. 1779-1787

Structural study of two proteins SigE and ORF1 to predict their roles in the biochemical oxidation of sulfur anions via the global sulfur oxidation operon (sox)

**Angshuman Bagchi** and Tapash Chandra Ghosh

Computational Biology and Chemistry (**Impact Factor: 1.793**), 2006, Vol. 30, Pg. no. 227-332

Structural insight into the interactions of SoxV, SoxW and SoxS in the process of transport of reductants during sulfur oxidation by the novel global sulfur oxidation reaction cycle

**Angshuman Bagchi** and Tapash Chandra Ghosh

Biophysical Chemistry (**Impact Factor: 2.283**), 2006, Vol. 119, Pg. no. 7-13

Structural identification of a novel thioredoxin SoxS: Prediction of the function in the process of transport of reductants during sulfur oxidation by the novel global sulfur oxidation reaction cycle

**Angshuman Bagchi** and Tapash Chandra Ghosh

Journal of Molecular Structure: Theochem (**Impact Factor: 1.371**), 2006, Vol. 758, Pg. no. 113 – 118

Homology modeling and molecular dynamics study of the interactions of SoxY and SoxZ: the central player of biochemical oxidation of sulfur anions in *Pseudaminobacter salicylatoxidans*

**Angshuman Bagchi** and Tapash Chandra Ghosh

Research Journal of Microbiology 2007, Vol. 2, Pg. no. 569 -576

Structural insight into the functionality of the transcriptional regulator SoxR from *Paracoccus pantotrophus* in sulfur oxidation operon

**Angshuman Bagchi** and Tapash Chandra Ghosh

Research Journal of Microbiology, 2007, Vol. 2, Pg. no. 735 -741

A structural analysis of the mode of action of ORF1 in *Pseudaminobacter salicylatoxidans* prediction of its role in the global sulfur oxidation operon sox

**Angshuman Bagchi**

Current Proteomics (**Impact Factor: 0.828**), 2008, Vol. 5, Pg. no. 176-180

Structural interaction between DsrE-DsrF-DsrH proteins involved in the transport of electrons in the *dsr* operon **Angshuman Bagchi** and Tapash Chandra Ghosh

Journal of Biomolecular Structure and Dynamics (**Impact Factor: 4.986**), 2008, Vol.25, Pg. no. 517-524  
(Cover illustration)

Study of the interactions between SigL and its associated factor from the pathogenic *Mycobacterium ulcerans*  
**Angshuman Bagchi**

International Journal of Integrative Biology (ISSN: 0973-8363), 2008, Vol.2, Pg. no. 190-194

Molecular modeling studies of some novel 9-arylacridine derivatives to elucidate their possible roles in topoisomerase I inhibition

Sudipta Bhowmik, **Angshuman Bagchi (Corresponding author)** and Rita Ghosh

International Journal of Integrative Biology (ISSN: 0973-8363), 2008, Vol.2, Pg. no. 8-14

Structural characterization of the involvement of SigC in the regulation of the gene expression of pathogenic *Mycobacterium ulcerans*

**Angshuman Bagchi**

Molecular Biology Reports (**Impact Factor: 2.506**), 2009, Vol. 36, Pg. no. 965-969

### Book Chapter

Prediction of Protein–Protein Interactions

**Angshuman Bagchi**

in Computational Intelligence and Pattern Analysis in Biological Informatics Chapter 15, John Wiley & Sons, Hoboken, NJ, USA. doi: 10.1002/9780470872352, ISBN 978-0-470-58159-9

In Silico functional profiling of human disease-associated and polymorphic amino acid substitutions

Matthew Mort, Uday S. Evani, Vidhya G. Krishnan, Kishore K. Kamati, Peter H. Baenziger, **Angshuman Bagchi**, Brandon Peters, Rakesh Sathyesh, Biao Li, Yanan Sun, Bin Xue, Nigam Shah, Maricel Kann, David N. Cooper, Predrag Radivojac and Sean D. Mooney

Human Mutations (**Impact Factor: 5.213**), 2010, Vol. 31, Pg. no. 335-346

Chemotherapeutic potential of 9-Phenyl Acridine: Biophysical studies on its binding to DNA

Rita Ghosh, Sudipta Bhowmik, **Angshuman Bagchi**, Dipankar Das and Somnath Ghosh

European Biophysics Journal (**Impact Factor: 2.274**), 2010, Vol. 39, Pg. no. 1243-1249

Restoration of Altered MicroRNA Expression in the ischemic heart with Resveratrol

Partha Mukhopadhyay, Subhendu Mukherjee, Kaimul Ahsan, **Angshuman Bagchi**, Pal Pacher and Dipak Das

PLoS ONE (**Impact Factor: 3.730**), 2010, Vol. 5, Pg. no. e15705

New direction to the solution of protein folding problem

(Comment) **Angshuman Bagchi** and Tapash Chandra Ghosh

Journal of Biomolecular Structure and Dynamics (**Impact Factor: 9.35**), 2011, Vol. 28, Pg. no. 653-654

Structural modeling of SoxF protein from *Chlorobium tepidium* : an approach to understand the molecular basis of thiosulfate oxidation

**Angshuman Bagchi**

Biochemical Biophysical Research Communication (**Impact Factor: 2.474**), 2011, Vol. 414, Pg. no. 409-411

Structural analyses of the interactions of SoxY and SoxZ from thermo-neutrophilic *Hydrogenobacter hermophilus* **Angshuman Bagchi** and Tapash Chandra Ghosh

Journal of Biophysical Chemistry, 2011, Vol. 2, Pg. no. 408-413

Evolutionary analysis of prokaryotic heat shock transcription regulatory protein  $\sigma^{32}$

Sourav Singha Roy, Monobesh Patra, Tarakdas Basu, Rakhi Dasgupta and **Angshuman Bagchi (Corresponding author)**

Gene (**Impact Factor: 2.371**), 2012, Vol.495, Pg. no. 49-55

Structural insight into the mode of interactions of SoxL from *Allochrochromatium vinosum* in the global sulfur oxidation cycle

**Angshuman Bagchi**

Molecular Biology Reports (**Impact Factor: 2.506**), 2012, Vol.39, Pg. no. 10243-10248

A structural insight into the prokaryotic heat shock transcription regulatory protein  $\sigma^{32}$ : an implication of  $\sigma^{32}$ -DnaK interaction

Sourav Singha Roy, Monobesh Patra, Rakhi Dasgupta and **Angshuman Bagchi (Corresponding author)** Bioinformation (**Impact Factor: 1**), 2012, Vol. 8, Pg. no. 1026-1029

Structural analyses of the permease like protein SoxT: a member of the sulfur compound metabolizing *sox* operon

**Angshuman Bagchi**

Gene (**Impact Factor: 2.371**), 2013, Vol. 521, Pg. no. 207-210

Mutation study of DsrM from *Allochrochromatium vinosum* using the amino acid sequences

Semanti Ghosh and **Angshuman Bagchi (Corresponding author)**

Meta Gene (Elsevier), 2013, Vol.1, Pg. no. 33-42

Analysis of Features from Protein-Protein Hetero-Complex Structures to Predict Protein Interaction Interfaces using Machine Learning

**Angshuman Bagchi**

Procedia Technology (Elsevier), 2013, Vol. 10, Pg. no. 62-66

Hypoglycosylation of dystroglycan due to T192M mutation: A molecular insight behind the fact

Simanti Bhattacharya, Amit Das, Semanti Ghosh, Rakhi Dasgupta and **Angshuman Bagchi (Corresponding author)**

Gene (**Impact Factor: 2.371**), 2014, Vol. 537, Pg. no. 108-114

Analyses of the presence of mutations in Dystrophin protein to predict their relative influences in the onset of Duchenne Muscular Dystrophy

Simanti Bhattacharya, Amit Das, Rakhi Dasgupta and **Angshuman Bagchi (Corresponding author)**

Cellular Signalling (**Impact Factor:4.471**) (Accepted)

Characterizations and structural analyses of the interactions between the essential human protein6 and Rab GTPase protein from *Plasmodium falciparum*

**Angshuman Bagchi**

Journal of Applied Bioinformatics & Computational Biology (ISSN: 2329-9532), 2014 (In press)

Characterization of the Leucine-Responsive Transcription Factor from Pathogenic *Vibrio cholerae* Using Molecular Modelling and Molecular Dynamics Simulations

**Angshuman Bagchi**

Current Synthetic and Systems Biology (OMICS Publishing Group) (ISSN: 2332-0737), 2014 (In press)

In silico characterization of formin binding protein 4 family of proteins

Amit Das, Simanti Bhattacharya, **Angshuman Bagchi (Corresponding author)** and Rakhi Dasgupta Interdisciplinary Sciences: Computational Life Sciences (In press), ISSN: 1913-2751 (print version)

ISSN:1867-1462 (Online) 2014

#### **Invited article:**

Sequence based protein structure prediction software tools (Review Article)

**Angshuman Bagchi**

Research- an Open Access Journal (ISSN: 2334-1009) by Labome.org, 2014