UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE/CV

1. **Full name of the faculty member :** Ashima Bhattacharjee

2. **Designation :** Ramanujan Fellow

3. **Specialization :**Redox homeostasis perturbations in neurodegenerative diseases

4. **Passport size photograph :**

5. **Contact information** :

87, Bondel Rd, Kolkata - 700019

ashima.bhattacharyya@gmail.com, ashimabhattacharjee2016@gmail.com

6. **Academic qualifications :**

College/ university from which the degree was obtained	Abbreviation of the degree
University of Calcutta	B.Sc.
University of Calcutta	M.Sc.
Indian Institute of Chemical Biology, (Jadavpur University)	PhD.

7. **Positions held/holding :**

1. Post Doctoral Fellow at Casey Eye Institute, Oregon Health and Science University under the supervision of Dr. Justine Smith from 2008 - 2009.

2. Post Doctoral Fellow at Johns Hopkins Medical School, under the supervision of Prof Svetlana Lutsenko from 2009 –2015.

3. Ramanujan Fellow & Faculty at S. N. Pradhan Centre for Neurosciences, University of Calcutta 2016-present.

8. Research interests :

Menkes Disease, Redox biology, Metal toxicity in neurodegeneration

9. Research guidance :

Number of researchers awarded M.Phil/Ph.Ddegrees :**None**

Number of researchers pursuing M.Phil/Ph.D :None

10. Projects :

Completed projects :

1. N.L Tartar Research grant of Oregon Health & Science University (2008-09): $2,000 Th(17) Cells as Potential Mediators of Ocular Inflammation

Current projects :

2. RamanujanFellowshipof Department of Science &Technology, Govt. of India (2016-2021): "Mechanism & Consequences of Disruption of Cellular Copper Homeostasis."

3. Extramural Project, SERB, DST, Govt. of India(2017-2020): "Understanding the Interplay of Cellular Copper and Redox Homeostasis in Neuronal and Glial Differentiation ."

11. Select list of publications :

a) *Journals :*

Publications (Corresponding Author)

(1) **Ashima Bhattacharjee***, KaustavChakraborty, AdityaShukla. Cellular Copper Homeostasis: Current Concepts on its interplay with glutathione homeostasis and its implication in Physiology and Human Diseases (Review). ***Metallomics***. 2017. 9(10): 1376-1388 (* ***Corresponding author***).

Publications (First Author)

(1) **Ashima Bhattacharjee**, Haojun Yang, Megan Duffy, Emily Robinson, Arianrhod Conrad-Antoville, Ya-Wen Lu, Tony Capps, Lelita T. Braiterman, Michael J. Wolfgang, Michael Patrick Murphy, Ling Yi, Stephen G. Kaler, Svetlana Lutsenko, and Martina Ralle. Activity of Menkes Disease Protein ATP7A is Essential for Redox Balance in Mitochondria. ***J Biol. Chem***. 2016.291(32):16644-58.

(2) Arnab Gupta[1], **Ashima Bhattacharjee**[1], Oleg Y. Dmitriev, SergiyNokhrin, LelitaBraiterman, Ann L. Hubbard, and Svetlana Lutsenko. Cellular copper levels determine the phenotype of the Arg[875] variant of ATP7B/Wilson disease protein. ***Proc. Natl. Acad. Sci. USA***, 2011, 108:5390-5 ([1] **First Author**)

(3) Oleg Y. Dmitriev[1],**Ashima Bhattacharjee**[1], SergiyNokhrin, Eva-Maria E. Uhlemann, Svetlana Lutsenko. Difference in stability of the N-domain underlies distinct intracellular properties of the E1064A and H1069Q mutants of Cu-transporting ATPase ATP7B. ***J Biol. Chem***. 2011 May 6;286(18):16355-62. ([1] **First Author**)

(4) **Ashima Bhattacharjee** and Justine R. Smith. Ocular Vascular Endothelial Heterogeneity. ***Vascular Disease Prevention*** (invited review), 2009, *6,* 158-165.

(5) **Ashima Bhattacharjee**, Deblina Banerjee, SuddhasilMookherjee, MoulinathAcharya, Antara Banerjee, Ananya Ray, AbhijitSen, the Indian Genome Variation Consortium, Kunal Ray. Leu432Val Polymorphism in *CYP1B1* as a Susceptible Factor towards Predisposition to Primary Open-Angle Glaucoma.***Mol. Vis.***2008; 14:841-850

(6) **Ashima Bhattacharjee**, MoulinathAcharya, ArijitMukhopadhyay, SuddhasilMookherjee, Deblina Banerjee, Arun Kr. Bandopadhyay, Sanjay Kumar Daulat Thakur, AbhijitSen, Kunal Ray. *Myocilin* Variants in Indian Open Angle Glaucoma patients. ***JAMA Ophthalmology*** (formerly ***Arch. Ophthalmol.)***, 2007; 125: 823-829

(7) **Ashima Bhattacharjee**, MoulinathAcharya, SuddhasilMookherjee, Sumedha Banerjee, ArijitMukhopadhyay, Arun Kumar Banerjee, sanjay Kumar Daulat Thakur, AbhijitSen, Kunal Ray. Role of Myocilin in Glaucoma: Molecular Defects and Possible Functional Aberrations Leading to Pathogenesis. ***Asian journal of Experimental Sciences***. 2006; 20: 97-112

Other Co-authored Publications

(1) AbigaelMuchenditsi, Haojun Yang, James Hamilton, LahariKoganti, Franck Housseau, Lisa Aronov, Hongni Fan, Hannah Pierson, **Ashima Bhattacharjee**, Robert C. Murphy, Dr. Cynthia L. Sears, Mr. James J. Potter, Ruth Wooton-Kee, Svetlana Lutsenko. Targeted inactivation of copper-transporter ATP7B in hepatocytes causes liver steatosis and obesity in mice. ***American Journal of Physiology - Gastrointestinal and Liver Physiology****.* 2017. 313(1): G39-G49.

(2) Arnab Gupta, Michael J Schell, **Ashima Bhattacharjee**, Svetlana Lutsenko, and Ann L Hubbard. Myosin Vb mediates copper export in polarized hepatocytes. ***J. Cell Sci****.* 2016. 129 (1179-1189).

(3) The Aging Eye. SuddhasilMookherjee, **Ashima Bhattacharjee**, MainakSengupta. ***J Ophthalmol****.*2015, Article ID 832326. (***Editorial***).

(4) SuddhasilMookherjee, MoulinathAcharya, Deblina Banerjee, **Ashima Bhattacharjee**, Kunal Ray. Molecular Basis for Involvement of CYP1B1 in MYOC Upregulation and Its Potential Implication in Glaucoma Pathogenesis.***PLoS One***. 2012;7(9).

(5) Maya Schushan, **Ashima Bhattacharjee**, Nir Ben-Tal and Svetlana Lutsenko. A structural model of the copper ATPase ATP7B to facilitate analysis of Wilson disease-causing mutations and studies of the transport mechanism.***Metallomics***. 2012. Jul;4(7):669-78.

(6) Deblina Banerjee, **Ashima Bhattacharjee**, ArchismanPonda, AbhijitSen, Kunal Ray. Comprehensive analysis of myocilin variants in east Indian POAG patients.***Mol. Vis.*** 2012;18:1548-57.

(7) DominikHuster, Angelika Kühne, **Ashima Bhattacharjee**, Lily Raines, Vanessa Jantsch, Johannes Noe, WiebkeSchirrmeister, Ines Sommerer, Osama Sabri, FriederBerr, Joachim Mossner, Bruno Stieger, Karel Caca, Svetlana Lutsenko. Diverse Functional Properties of Wilson Disease ATP7B Variants.***Gastroenterology***. 2012 142(4):947-956.

(8) Svetlana Lutsenko, **Ashima Bhattacharjee**, Ann L.Hubbard. Copper handling machinery of the brain.***Metallomics***. 2010 Sep 1;2(9):596-608.

(9) MoulinathAcharya, ArijitMukhopadhyay, **Ashima Bhattacharjee**, Sanjay KD Thakur, Arun K Bandyopadhyay and Kunal Ray. Complex genetics of glaucoma: Defects in *CYP1B1*, and not *MYOC*, cause pathogenesis in an early-onset POAG patient with double variants at both loci. ***J. Genet.*** 2008, 87(3):265-9**.**

(10) Genetic landscape of the people of India: a canvas for disease gene exploration. ***J. Genet.*** 2008; 87: 3-20. [*Contributed in as member of Indian Genome Variation Consortium*]

(11) MoulinathAcharya, SuddhasilMookherjee,,**Ashima Bhattacharjee**, Sanjay K.D. Thakur, Arun K Bandyopadhyay, AbhijitSen,SubhabrataChakrabarti and Kunal Ray. Evaluation of the OPTC gene in primary open angle glaucoma: functional significance of a silent change. ***BMC Mol. Biol*****.** 2007; 8:21.

(12) MoulinathAcharya, SuddhasilMookherjee,,**Ashima Bhattacharjee**, Arun K Bandyopadhyay, Sanjay K.D. Thakur, GautamBhaduri, AbhijitSen, KunalRay. Primary Role of CYP1B1 in Indian juvenile-onset POAG patients. ***Mol. Vis***. 2006; 12: 399-404.

(13) ArijitMukhopadhyay, SreelathaKomatireddy, MoulinathAcharya, **Ashima Bhattacharjee**, Anil Kumar Mandal, Sanjay K. D. Thakur, Garudadri Chandrasekhar, Arun Banerjee, Ravi Thomas, SubhabrataChakrabarti, Kunal Ray. Evaluation of Optineurin as a candidate gene in Indian Patients with primary open angle glaucoma.***Mol. Vis.*** 2005; 11: 792-7.

(14) The Indian Genome Variation database (IGVdb): a project overview. ***Hum. Genet***. 2005;118: 1-11 [*Contributed in the study as a member of Indian Genome Variation Consortium and as mentioned in the paper*].

(15) ArijitMukhopadhyay, SangitaTalukdar, **Ashima Bhattacharjee**, Kunal Ray. Bioinformatic approaches for identification and characterization of olfactomedin related genes with a potential role in pathogenesis of ocular diseases. ***Mol. Vis***. 2004;10: 304-14.

(16) Kunal Ray, Sanjay K. D. Thakur, Arun K Bandyopadhyay, ArijitMukhopadhyay, MoulinathAcharya, **Ashima Bhattacharjee**, AbhijitSen, GautamBhaduri. Genetics and bioinformatics of primary open angle glaucoma: an Indian perspective. ***J. Ind. Med. Assoc***. 2004; 102(12):708 – 712.

b) *Conference/ seminar volumes :*

(1) Oral presentation: A. Mukhopadhyay, **A. Bhattacharjee**, S. Talukdar and K. Ray on 'Identification of Candidate Genes for Eye Diseases by *In Silico*Approaches at the 29th Annual Conference of the Indian Soceity of Human Genetics, during Jan 8-11, 2004 (India).

(2) Poster Presentation: **A Bhattacharjee**, M. Acharya, S. Mookherjee, A. Mukhopadhyay, A.K. Bandopadhyay, S.K.D. Thakur and K. Ray '*In Silico* and Experimental Approaches for Identification of Candidate Genes for Glaucoma' at the international symposium on 'Human Origin and Genetics: Genes, Evolution and Complex Disease' held on Feb 17-19, 2005 (India).

(3) Poster presentation: **A. Bhattacharjee**, M. Acharya, S. Mookherjee, D. Banerjee, A. Bandopadhyay, S.K.D. Thakur, A. Sen and K. Ray on Evaluation of the Role of *CYP1B1* in POAG Pathogenesis presented in the 2007 Annual meeting of the Association for Research in Vision and Ophthalmology (**ARVO**) during May 6-10 2007 (USA).

(4) Authored presentation: Arnab Gupta*, **Ashima Bhattacharjee***, Karoline Leonhardt, LelitaBraiterman, Ann L Hubbard, Svetlana Lutsenko and Disease mutation or polymorphism? Cellular copper levels determine the phenotype of the Gly^{875}>Arg variant of Cu-transporting ATPase ATP7B, FASEB summer research conference, June 6th – June 11th 2010. (* equal contribution) (USA)

(5) Poster Presentation: **Ashima Bhattacharjee***, Arnab Gupta*, Oleg Dmitriev, SergiyNokhrin, Svetlana Lutsenko. Cellular targeting and stability of atp7b variants: effect of mutations and copper levels at the 50th annual meeting of the American Society for Cell biology held on Dec11-15, 2010. (* equal contribution) (USA)

(6) Poster Presentation: **Ashima Bhattacharjee**, Arnab Gupta, Oleg Dmitriev, SergiyNokhrin, Lily Raines, Svetlana Lutsenko. Cellular targeting and stability of disease causing variants of ATP7b: effect of mutations and copper levels. in the Gordon Research Conference (Cell Biology of Metals) on July31-Aug5, 2011 (USA).

(7) Poster Presentation: Cellular targeting and stability of ATP7B variants associated with wilson disease. **Ashima Bhattacharjee**, Arnab Gupta, Oleg Dmitriev, SergiyNokhrin, Lily Raines, Svetlana Lutsenko. Human disorders of copper metabolism: recent advances and main challenges. April 2013 (USA).

(8) Poster Presentation: **Ashima Bhattacharjee**, Svetlana Lutsenko. **Compartment specific redox changes in Menkes disease fibroblasts.** Hopkins Imaging Conference on Nov 2013 (USA).

(9) Poster Presentation: **Ashima Bhattacharjee**, Martina Ralle, SvetlanaLutsenko. Live-cell Imaging of Compartment-Specific Redox Changes in Menkes Disease Fibroblasts at the 39th annual meeting of Indian Society of Human Genetics 2014 (India).

12. Membership of Learned Societies :

Life member, **Indian Society of Human Genetics (ISHG)**
Life member,**Calcutta Consortium on Human Genetics**

13. Invited lectures delivered :

1.Copper-Redox Homeostasis Interplay: Seesaw of Physiology and Pathology. NBRC, Manesar, May9, 2018.

1. **Understanding the Interplay of Copper-Redox Homeostasis in Physiology and Pathology**. IISER-Kolkata, March 14, 2018.

2. **Copper-Redox Interplay in Physiology and Pathology** at the Department of Genetics, University of Calcutta, February 24 2018.

3. **Copper-Redox Homeostasis: Implications in Pathology and Physiology**at Shiv Nadar University, Dadri, U.P. India, February 1, 2018.

4. **Redox homeostasis perturbations in cellular organelles – implications in copper homeostasis disorders**. 5thSymposium on Advanced Biological Inorganic Chemistry. Kolkata, Jan7-11, 2017.

5. **Redox Homeostatic Perturbations – Implications in inherited copper homeostasis disorders**. Department of Biotechnology, Jawaharlal Nehru University. September 2016.

6. **Redox Homeostasis Perturbations – Implications in Inherited Copper Homeostasis Disorders. Calcutta Consortium on Human Genetics (CCHuGe)**. July 2016

7. **Cellular Redox Perturbations – Implications in Copper Homeostasis Disorders**. Indian Institute of Science Education & Research, Mohali, May6, 2016.

8. **Disruption of Cellular Copper Homeostasis – Mechanism and Consequences**. Indian Institute of Technology, Ropar. September 2015.

9. **Disruption of Cellular Copper Homeostasis: Mechanism and Consequenses**. Cornell University Medical School. June 2015

10. **Wilson Disease Heterogeneity: Different Approaches to Understand *ATP7B* mutations**. Indian Institute of Chemical Biology, Kolkata. 2011

14. Awards :

1. Junior Research Fellow, Council of Scientific and Industrial Research (CSIR), Jan 2003 - Dec 2005.
2. Senior Research Fellow, CSIR, Jan 2006 – Dec2007.
3. Won the Third best poster Award at the International Symposium on „Human Origin and Genetics: Genes, Evolution and Complex Disease" held on Feb 17-19, 2005.
4. Won the best poster Award at the XXXII Annual Conference of Indian Society of Human Genetics and International symposium on „Deconstructing Human Diseases: the Genomic advantage".
5. Co-authored a poster presentation „A silent change identified in the opticin gene by conceptual translation is not functionally silent" which won best poster in the 31st annual meeting of Indian Society of Human Genetics held at JNU, New Delhi, India, during February 26th - March 1st, 2006.
6. Council of Scientific and Industrial Research Travel Grant for 2007 ARVO Annual Meeting.
7. American Society for Cell Biology (ASCB) PostdoctoralTravel Award for attending for attending the 50th annual meeting of the American Soceity for Cell Biology 2010.
8. Young Scientist Travel Award for attending 39th annual meeting of Indian Society of Human Genetics 2014.
9. Best Poster Award at 39th annual meeting of Indian Society of Human Genetics 2014.