

CURRICULUM VITAE

Somiranjan Ghosh, PhD

Business Address:

415 College Street, NW

Washington DC, 20059

Telephone Number: (202) 806-4176 (O); (240)-620-6710 (M)

sghosh@howard.edu

1. PERSONAL INFORMATION

A. Education:

Undergraduate: University of Calcutta, Calcutta, India, 1982-1985, Bachelor of Science, Zoology

Graduate Education: 1 University of Calcutta, Calcutta, India, 1986-1988, Master of Science, Marine Science

2. University of Calcutta, Calcutta, India, 1995-2000, Doctor of Philosophy, Marine Science

3. National Cancer Institute, National Institute of Health, Bethesda, USA, 2003-2004, Post-doctoral, Cancer Research.

B. Professional Experience & Training:

Title, Institution, City, Country, Years at that Institution Service

1. **Associate Professor**, Department of Pediatrics & Child Health, Howard University College of Medicine, Washington, DC, USA, 2022-Present.
2. **Assistant Professor**, Department of Pediatrics & Child Health, Howard University College of Medicine, Washington, DC, USA, 2015-2022.
3. **Principal Investigator**, Department of Biology, Howard University College of Medicine, Washington, DC, USA, 2017-present
4. **Sr. Research Associate**, Department of Biology, Howard University College of Medicine, Washington, DC, USA, 2004-present (19 + Years)
5. **Postdoctoral Visiting Fellow**, Department of Cancer Treatment and Diagnosis (DCTD), Clinical Trial Unit, National Cancer Institute, NIH, Bethesda, Maryland, USA, 2003-2004
6. **Research Associate**, University College of Medicine, Calcutta University, Calcutta, India, 2000-2003

C. Licensure: Not Applicable

D. Certification: Not Applicable

E. Languages Spoken: English, Bengali, Hindi

2. RESEARCH AND SCHOLARLY ACTIVITIES

A. Publications:

i. Original Papers in Refereed Journals

1. Epidemiological Investigation on the Clinical Status of the Developmental Dyslexia and ADHD comorbidity among school-age children in Pakistan, *OJEPI*, 2025 (*in press*).
2. Developing Non-Invasive Molecular Markers for Early Risk Assessment of Alzheimer's Disease. Tapas K. Sur, Tanmoy Mondal, Zarish Noreen, Jheannelle Johnson, Gail Nunlee-Bland, Christopher A. Loffredo, Brent E. Korba, Vijay Chandra, Siddhartha S. Jana, Bernard Kwabi-Addo, Sumit Sarkar, Somiranjan Ghosh. *Biomarkers in Neuropsychiatry*; Volume 12, June 2025, 100120.
3. GENETIC VARIANTS LINKED TO DYSLEXIA CO-MORBID ADHD: A CASE STUDY OF A PAKISTANI OUTPATIENT. Shujjah Haider, Tanmoy Mondal, Irum Nawaz, Maleeha Azam, Somiranjan Ghosh. *J. Population Therap. & Clin.c. Pharmacol.*, 23(9) 2024: 2698-2711.
4. Transcriptomic Analysis of Alzheimer's Disease Pathways in a Pakistani Population. Mondal T, Noreen Z, Loffredo CA, Johnson J, Bhatti A, Nunlee-Bland G, Quartey R, Howell CD, Moses G, Nnanabu T, Cotin ST, Clark M, Chandra V, Jana SS, Kwabi-Addo B, Korba BE, Shahzad S, Bhatti MF, **Ghosh S**. *J Alzheimers Dis Rep*. 2024 Mar 19;8(1):479-493.
5. Mondal T, Smith CI, Loffredo CA, Quartey R, Moses G, Howell CD, Korba B, Kwabi-Addo B, Nunlee-Bland G, Rucker L, Johnson J, **Ghosh S**. Transcriptomics of MASLD Pathobiology in African American Patients in the Washington DC Area †. *Int J Mol Sci*. 2023 Nov 23;24(23):16654. doi: 10.3390/ijms242316654.
6. Cagle E, Lake B, Banerjee A, Cuffee J, Banerjee N, Gilmartin D, Liverman M, Brown S, Armstrong E, Bhattacharya S, **Ghosh S**, Mandal T, Banerjee H. Analysis of Differential Gene Expression and Core Canonical Pathways Involved in the Epithelial to Mesenchymal Transition of Triple Negative Breast Cancer Cells by Ingenuity Pathway Analysis. *Comput Mol Biosci*. 2023 Jun;13(2):21-34. doi: 10.4236/cmb.2023.132002. Epub 2023 May 19.
7. Creighton CJ, Zhang F, Zhang Y, Castro P, Hu R, Islam M, **Ghosh S**, Ittmann M, Kwabi-Addo B. Comparative and integrative analysis of transcriptomic and epigenomic-wide DNA methylation changes in African American prostate cancer. *Epigenetics*. 2023 Dec;18(1):2180585.
8. Moore MM, Ayuk MA, Johnson AA, Sims T, Haamen S, Haidara R, Allen AD, Dickson LA, **Ghosh S**, Gugssa A, Ullah H, Bassey GB, Fernando LM, London LY, Irabor EG, Roy SD, Quagraine BK, Smith M; Howard University SEA-PHAGES Students; Anderson WA, Robinson CJ. Complete Genome Sequences of Subcluster C1 Mycobacteriophages Blackbrain, Cactojaque, Kboogie, Trinitium, and YoungMoneyMata. *Microbiol Resour Announc*. 2023 Jun 20;12(6):e0025323. doi: 10.1128/mra.00253-23. Epub 2023 May 31.

9. Mondal T, Loffredo CA, Simhadri J, Nunlee-Bland G, Korba B, Johnson J, Cotin S, Moses G, Quartey R, Howell CD, Noreen Z, Arif M, **Ghosh S**. Insights on the pathogenesis of type 2 diabetes as revealed by signature genomic classifiers in an African American population in the Washington DC area. *Diabetes Metab Res Rev*. 2022 Nov 4:e3589. doi: 0.1002/dmrr.3589. Online ahead of print. PMID: 36331813.
10. Arif M, Mondal T, Majeed A, Loffredo CA, Korba BE, **Ghosh S**. Peroxisome Proliferator-Activated Receptor- α (*PPAR α*) Expression in a Clinical Population of Pakistani Patients with Type 2 Diabetes and Dyslipidemia. *Int J Mol Sci*. 2022 Sep 16;23(18):10847. doi: 10.3390/ijms231810847.
11. London LY, Ayuk MA, Black AC, Cheung L, Robinson DM, Thomas DN, Warner MH, Allen AD, **Ghosh S**, Gugssa A, Ullah H, Bassey GB, Fernando LM, Moore MM, Oliver JJ, Irabor EG, Roy SD, Quagraine BK, Smith M; Howard University SEA-PHAGES Students, Anderson WA, Robinson CJ. Complete Genome Sequences of Mycobacteriophages SynergyX, Abinghost, Bananafish, and Delton. *Microbiol Resour Announc*. 2022 Jul 11:e0028622. doi: 10.1128/mra.00286-22. Online ahead of print.
12. Mondal T, Loffredo CA, Trnovec T, Palkovicova Murinova L, Noreen Z, Nnanabu T, Conka K, Drobna B, **Ghosh S**. Gene expression signatures in PCB-exposed Slovak children in relation to their environmental exposures and socio-physical characteristics. *Environ Sci Pollut Res Int*. 2022 Apr 14. doi: 10.1007/s11356-022-20018-2. Online ahead of print. PMID: 35420343
13. Krauss C, Aurelius C, Johnston K, Hedley J, Banerjee S, Wisniewski S, Reaves Q, Dia K, Brown S, Bartlet V, Gavin S, Cuffee J, Banerjee N, Rawat K, Mandal S, Abedin Z, **Ghosh S**, Banerjee H. A Study of Differential Gene Expression and Core Canonical Pathways Involved in Rhenium Ligand Treated Epithelial Mesenchymal Transition (EMT) Induced A549 Lung Cancer Cell Lines by INGENUITY Software System. *Comput Mol Biosci*. 2022 Mar;12(1):12-19. doi: 10.4236/cmb.2022.121002. Epub 2022 Mar 7. PMID: 35342659
14. Tailor K, Paul J, **Ghosh S**, Kumari N, Kwabi-Addo B. RASAL2 suppresses the proliferative and invasive ability of PC3 prostate cancer cells. *Oncotarget*. 2021 Dec 21;12(26):2489-2499. doi: 10.18632/oncotarget.28158. eCollection 2021 Dec 21. PMID: 34966481
15. London LY, Ayuk MA, Effiom D, Fashina F, Louis BJ, Tolsma SS, Allen AD, Dickson LA, **Ghosh S**, Gugssa A, Ullah H, Bassey GB, Fernando LM, Moore MM, Oliver JJ, Irabor EG, Roy SD, Quagraine BK, Smith M; Howard University SEA-PHAGES Students,, Anderson WA, Robinson CJ. Complete Genome Sequences of Mycobacteriophages Dallas and Jonghyun. *Microbiol Resour Announc*. 2021 Jul 8;10(27):e0030421. doi: 10.1128/MRA.00304-21. Epub 2021 Jul 8. PMID: 34236221
16. Mondal T, Nautiyal A, **Ghosh S**, Loffredo CA, Mitra D, Saha C, Dey SK. An evaluation of DNA double strand break formation and excreted guanine species post whole body PET/CT procedure. *J Radiat Res*. 2021 Jul 10;62(4):590-599. doi: 10.1093/jrr/rrab025. PMID: 34037214
17. Simhadri JJ, Loffredo CA, Trnovec T, Murinova LP, Nunlee-Bland G, Koppe JG, Schoeters G, Jana SS, **Ghosh S**. Biomarkers of metabolic disorders and neurobehavioral diseases in a PCB-exposed population: What we learned and the implications for future research. *Environ Res*. 2020 Dec;191:110211. doi: 10.1016/j.envres.2020.110211. Epub 2020 Sep 13. PMID: 32937175
18. Noreen Z, Loffredo CA, Bhatti A, Simhadri JJ, Nunlee-Bland G, Nnanabu T, John P, Khan JS, **Ghosh S**. Transcriptional Profiling and Biological Pathway(s) Analysis of Type 2 Diabetes

Mellitus in a Pakistani Population. *Int J Environ Res Public Health*. 2020 Aug 13;17(16):5866. doi: 10.3390/ijerph17165866. PMID: 32823525.

19. Banerjee H, Krauss C, Worthington M, Banerjee N, Shawn Walker R, Hodges H, Chen L, Rawat K, Dasgupta S, **Ghosh S**, Mandal S. Differential expression of efferocytosis and phagocytosis associated genes in tumor associated macrophages exposed to African American patient derived prostate cancer microenvironment. *J. Solid. Tumor*. 2019; 9(2): 22-27. doi: 10.3390/ijerph15081582. PMID: 30049934.
20. Halder D, Saha S, Singh RK, Ghosh I, Mallick D, Dey SK, Ghosh A, Das BB, **Ghosh S**, Jana SS. Non-muscle myosin IIA and IIB differentially modulate migration and alter gene expression in primary mouse tumorigenic cells. *Mol Biol Cell*. 2019; 30(12):1463-1476 doi: 10.1091/mbc.E18-12-0790. Epub 2019 Apr 17. PMID: 30995168
21. Noreen Z, DeJesus J, Bhatti A, Loffredo CA, John P, Khan JS, Nunlee-Bland G, **Ghosh S***. Epidemiological Investigation of Type 2 Diabetes and Alzheimer's Disease in a Pakistani Population. *Int J Environ Res Public Health*. 2018 Jul 26;15(8). pii: E1582. doi: 10.3390/ijerph15081582. PMID: 30049934
22. Washington K, **Ghosh S**, Reeves IV. A Review: Molecular Concepts and Common Pathways Involving Vitamin D in the Pathophysiology of Preeclampsia. *Open Journal of Obstet. Gynecol*. 2018; 8: 198-229. doi. 10.4236/ojog.2018.83023
23. **Ghosh S***, Loffredo CA, Mitra PS, Trnovec T, Murinova LP, Sovcikova E, Hoffman EP, Makhambi KH, Dutta SK. PCB exposure and potential future cancer incidence in Slovak children: an assessment from molecular finger printing by Ingenuity Pathway Analysis (IPA®) derived from experimental and epidemiological investigations. *Environ Sci Pollut Res Int*. 2018; 25(17): 16493-16507. doi: 10.1007/s11356-017-0149-1. Epub 2017 Nov 15. PMID: 29143255.
24. **Ghosh S**, Dutta S, Thorne G, Boston A, Barfield A, Banerjee N, Walker R, Banerjee HN. Core Canonical Pathways Involved in Developing Human Glioblastoma Multiforme (GBM). *International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET)*. 2017 February 28; 3(1):458-465. PMID: 28523289
25. **Ghosh S**, Mitra PS, Loffredo CA, Trnovec T, Palkovicova L, Sovcikova E, Ghimbovschi S, Zang S, Hoffman EP, Dutta SK. Transcriptional profiling and biological pathway analysis of human equivalence PCB exposure in vitro: indicator of disease and disorder development in humans. *Environmental Res*. 2015; 138C:202-216. doi: 10.1016/j.envres.2014.12.031. Epub 2015 Feb 27. PMID: 25725301
26. **Ghosh S**, Palkovicova L, Trnovec T, Loffredo CA, Washington K, Mitra PS, Dutta SK. Biomarkers Linking PCB Exposure and Obesity, *Current Pharmaceutical Biotechnology*. 2014; 15 (11): 1058-1068. doi: 10.2174/1389201015666141122203509. PMID: 25420728
27. **Ghosh S**, Trnovec T, Palkovicova L, Hoffman EP, Washington K, Dutta SK. Status of LEPR Gene in PCB-exposed Population: A Quick Look. *Int J Hum Genet*. 2013; 13(1): 27-32. doi: 10.1080/09723757.2013.11886193. PMID: 23741107
28. Dutta SK, Mitra PS, **Ghosh S**, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP. Differential Gene Expression and Functional Analysis of PCB-exposed Children: Understanding Disease and Disorder Development.

- Environment International. 2012; 40: 143–154. doi: 10.1016/j.envint.2011.07.008. Epub 2011 Sep 8. PMID: 21855147.
29. Mitra PS, **Ghosh S**, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP, Dutta SK. Analysis of the toxicogenomic effects of exposure to persistent organic pollutants (POPs) in Slovakian girls: correlations between gene expression and disease risk. *Environment International*. 2012; 39: 188–199. doi: 10.1016/j.envint.2011.09.003. Epub 2011 Dec 8. PMID: 22208759.
 30. **Ghosh S**, Zang, S, Mitra, PS, Ghimbovschi, S, Hoffman, EP, Dutta, SK. Global gene expression and Ingenuity biological functions analysis on PCBs 153 and 138 induced human PBMC in vitro reveals differential mode(s) of action in developing toxicities *Environment International*. 2011; 37: 838-857. doi: 10.1016/j.envint.2011.02.010. Epub 2011 Apr 5. PMID: 21470681.
 31. **Ghosh S**, De S, Chen Y-Q, Sutton DC, Ayorinde FO, Dutta SK. Polychlorinated biphenyls (PCB-153) and (PCB-77) absorption in human liver (HepG2) and kidney (HK2) cells in vitro: PCB levels and cell death. *Environment International*. 2010; 36: 893–900. doi: 10.1016/j.envint.2010.06.010. Epub 2010 Aug 17. PMID: 20723988.
 32. De S, **Ghosh S**, Chatterjee R, Chen Y-Q, Moses L, Kesari A, Hoffman EP, Dutta SK. PCB congener specific oxidative stress response by microarray analysis using human liver cell line. *Environment International*, 2010; 36: 907-917. doi: 10.1016/j.envint.2010.05.011. Epub 2010 Jul 17. PMID: 20638727.
 33. Mitra P, **Ghosh S**, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Lubica Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP, Dutta SK. Persistent Organic Pollutants (POP) and their Effect on Gene Expression in Exposed Children, in 2010 Joint Conference of International Society of Exposure Science & International Society for Environmental Epidemiology (ISES-ISEE 2010) at Seoul, Korea, 28th August-1st September. *Epidemiology*. 2010; 22 (1) p-S94, 2011. doi: 10.1097/01.ede.0000391955.79176.0c
 34. Dutta SK, Mitra P, **Ghosh S**, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP. Gene Expression Analysis of PCB exposed Children: Understanding Toxicity and Disease Process, in 2010 Joint Conference of International Society of Exposure Science & International Society for Environmental Epidemiology (ISES-ISEE 2010) at Seoul, Korea, 28th August-1st September. *Epidemiology*. 2010; 22 (1) p-S33, 2011. doi: 10.1097/01.ede.0000391759.48334.51.
 35. Dutta S, **Ghosh S**, Zang S, Trnovec T, Palkovicova L, Sovcikova E, Sonneborn, Dean Hertz-Picciotto, Irva, Ghimbovschi Svetlana Hoffman, Eric. Identification of Early Disease Biomarkers in 45 Months PCB-Exposed Slovak Population [Abstract]. In ISEE 21st Annual Conference Proceedings, Dublin, Ireland, August 25-29. *Epidemiology*. 2009; 20(6): 6-pS131. doi: 10.1097/01.ede.0000362450.40526.30.
 36. **Ghosh S**, Dutta S, Zang S, Trnovec T, Palkovicova L, Sovcikova E, , Ghimbovschi Svetlana , Hoffman, Eric PCB Exposure PCB Exposure In Vitro (PBMC): Differential Gene Expression, Pathway Analysis for Possible Mode(s) of Actions, and Disease Development in Comparison with PCB-Exposed Slovak Population In ISEE 21st Annual Conference, Dublin, Ireland, August 25-29, *Epidemiology*. 2009; 20(6): p S130. doi: 10.1097/01.ede.0000362447.94784.b4
 37. Dutta SK, **Ghosh S**, De S, Hoffman EP. CYP1A1 and MT1K are Congener Specific Biomarker Genes for Liver Diseases Induced by PCBs. *Environ. Toxicol. Pharmacol*. 2008; 25: 218-221. doi: 10.1016/j.etap.2007.10.018. Epub 2007 Oct 16. PMID: 21783860.

38. **Ghosh S**, De S, Dutta SK. Altered Protein Expressions in Chronic PCB-153 Induced Human Liver (HepG2) cells. *Int. J. Toxicol.* 2007; 26: 203-212. doi: 10.1016/j.etap.2007.10.018. Epub 2007 Oct 16. PMID: 21783860
39. Chen YQ, De S, **Ghosh S**, Dutta SK. Congener Specific Polychlorinated Biphenyl-Induced Cell Death in Human Kidney Cells In Vitro: Potential Role of Caspase. *Inter. J. Toxicol.* 2996; 25: 1-7. DOI: [z](#) PMID: **16940006**.
40. De S, **Ghosh S**, Dutta SK. Congener specific polychlorinated biphenyl metabolism by human intestinal microbe Clostridium species: Comparison with human liver cell line-HepG2. *Ind. J. Microbiol.* September 2006; 46: 191-199. PMID: 25838614.
41. **Ghosh S**, Hazra A K, Banerjee S, Mukherjee B. Ecological monitoring for ascertaining the bio-safety of liver lipids from some Indian marine puffer fishes. *Fisheries Science.* 2005; 71(1), 29-37.
42. **Ghosh S**, Hazra, AK, Banerjee S, and Mukherjee B. The seasonal toxicological profile of four puffer fish species collected along Bengal coast. India, *Indian J. Mar. Sci.* 2004; 33(3), 276-280.
43. Dasmahapatra GP, Didolkar P, Alley MC, **Ghosh S**, Sausville EA, Roy K*. In Vitro Combination Treatment with Perifosine and UCN01 Demonstrate Synergism against Prostate (PC-3) and Lung (A549) Epithelial Adenocarcinoma Cell Lines. *Clinical Cancer Research.* 2004; 10: 5242-5252. doi: 10.1158/1078-0432.CCR-03-0534. PMID: 15297428
44. **Ghosh S**, Hazra A K, Banerjee S, Mukherjee B. The Multifaceted Health Benefits of Fish Oil. *Science and Culture.* 2003; 69 (9-10), 326-330.
45. Banerjee S, **Ghosh S**, Hazra A K, Dutta P, Besra S E, Vedasiromoni R, Bhattacharyya D. Mukherjee B. Puffer Toxin: Unusual Molecular Structure, in the Proceedings of Asian Symposium on Medicinal Plants and Species (ASOMPS X), Dhaka, 18-23 November 2000; 149-159.
46. Hazra A K, **Ghosh S**, Banerjee S, Mukherjee B. Studies on Lipid and Fatty Acid Compositions of Puffer Liver from Indian Coastal waters with Seasonal Variation. *J. Am. Oil. Chem. Soc.* 1998; 75(1), 1673-1678.

ii. Reviews or Editorials in Refereed Journals

N/A

iii. Books or Chapters in Books

1. **Ghosh S**, Hazra A K, Mitra SK, Mukherjee B. Poisonous Fishes: Potential Begetter of Bioactive Substances. In: Ed. Devadasan K et al. *Nutrients and Bioactive Substances in Aquatic Organisms.* Cochin, India: Society of Fisheries Technologists, 1994; 44-58.

vi. Other Publications (**PATENT**)

1. **Ghosh S**, Hazra AK. and Mukherjee B., A Novel Process for the Extraction of Non-toxic Oil Having High EPA & DHA Content from the Livers of Marine Non-Edible Fishes, (Indian Patent No. AA-2468).

v. Abstracts for Conference papers and posters

1. Tanmoy Mondal, Jheannelle Johnson, Tapas K. Sur, Christopher A. Loffredo, Sharleine Cotin, Jasneet Sahota, Charles D. Howell, Brent Korba, Gail Nunlee-Bland, Somiranjan Ghosh. Metabolic Dysfunction and Alzheimer's Disease Risks in African Americans. AAIC 2024, Philadelphia, USA
2. Tanmoy Mondal, Smith CI, Loffredo CA, Quartey R, et al. Key gene validation in hepatic fibrosis and hepatocellular carcinoma in African Americans with NAFLD. The Liver Meeting - AASLD 2023, Boston, MA, USA, October 2023, DOI: 10.1097/HEP.0000000000000580
3. Tanmoy Mondal, Christopher A. Loffredo, Coleman I Smith, Ruth Quartey. et al. Key Biological Pathways of Non-Alcoholic Fatty Liver Disease in African Americans. CUHDMI Inaugural Conference April 3 - 4, 2023 Morgan State University, Baltimore, MD
4. Tanmoy Mondal, CD Howell, B Korba, G Nunlee-Bland, et al. TGF- β 1 Signaling Pathways in Progression Non-Alcoholic Fatty Liver Disease in African Americans. RCMCI Consortium National Conference 2023. Bethesda MD, US.
5. Tanmoy Mondal, CI Smith, C A Loffredo, B Korba, CD Howell, G Nunlee-Bland, J Johnson, J Sahota, G Moses, S Ghosh. TGF- β 1 & E2F1 Signaling Pathways in MASLD African Americans. XULA. Health Disparities Conference 2024. New Orleans, Louisiana.
6. Tanmoy Mondal, Loffredo CA, Smith CI, Quartey R, S Ghosh et al. NAFLD Pathobiology in African American Patents in The Washington Dc Area. AASLD The Liver Meeting, Washington, DC, USA. 2022
7. Saimoen Anderson, Miranda Newheart, Tanmoy Mondal, Tapas Kumar Sur, Somiranjan Ghosh. Decoding Latent Autoimmune Disease (LADA) in African American Adults: A Comprehensive Study on the Role of PFKFB3 Gene and Pathway's T2DM Patient. 18th Annual Undergraduate Research Conference 2024. Virginia State University.
8. Miracle Gabriels, Tanmoy Modal, Somiranjan Ghosh. Role of E2F1 Signaling Pathways in Progression of MASLD in African Americans: An Ethnicity Based Comparative Study. 18th Annual Undergraduate Research Conference 2024. Virginia State University.
9. Armani Clay, Tanmoy Mondal, Tapas Sur, Somiranjan Ghosh. The Immerging Concept of Type 3 Diabetes: Why African Americas Matters. 18th Annual Undergraduate Research Conference 2024. Virginia State University.
10. Tapas Kumar Sur; T Mondal; Z Noreen; J Johnson; CA Loffredo; B Korba; ST Cotin; G Nunlee-Bland; S Sarkar; S Ghosh. EARLY MARKERS IN ASSESSING THE RISK OF ALZHEIMER'S DISEASE. RCMCI Coordinating Center Conference 2024. Bethesda MD, US.
11. Jasneet Sahota, Miracle S Gabriels, Tanmoy Mondal, Coleman I. Smith, Christopher A. Loffredo, Brent Korba, Charles D. Howell, Gail Nunlee-Bland, Leanna R. Rucker, Gemeyel Moses, Somiranjan Ghosh. Ethnicity Based Similarities and Differences of Global Transcriptomic Profiles among MASLD Patients by Ingenuity Pathway Analysis (IPA). 18th Annual Undergraduate Research Conference 2024. Virginia State University.
12. S. HAIDER; T. Mondal; CA Loffredo; B Korba; M. Azam; S. Ghosh. Transcriptomes of Pakistani Children with Dyslexia And ADHD. RCMCI Coordinating Center Conference 2024. Bethesda MD, US. 19. Jasneet Sahota; Miracle S Gabriels; Tanmoy Mondal, Coleman I. Smith, Christopher A. Loffredo, Brent Korba, Charles D. Howell, Gail Nunlee-Bland, Leanna R. Rucker, Gemeyel Moses, Somiranjan Ghosh. SIGNALING PATHWAY DIFFERENCES IN MASLD AFRICAN AMERICANS. RCMCI Coordinating Center Conference 2024. Bethesda MD, US.
13. Johnson, J., Mondal, T., Cotin, S., Clark, M., Noreen, Z., Loffredo, C.A., Korba, B., Nunlee-Bland G., Quartey, R., Howell, C.D., Chandra, V., Jana, S.S., Ghosh S. (2022) Correlating Chronic Type 2 Diabetes and Future Risk of Developing Alzheimer's Disease: Case Study.

Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS). November 9-12, Anaheim, CA.

14. Mondal, T., Loffredo, C.A., Smith³, C.I., Quartey, R., Moses, G., Howell, C.D., Korba, B., Nunlee-Bland, G., Ghosh S. (2022) NAFLD Pathobiology in African American Patients in The Washington DC Area. AASLD The Liver Meeting 2022. November 4-8, Washington DC. USA.
15. Johnson, J., Noreen, Z., Mondal, T., Loffredo, C.A., Korba, B., Nunlee-Bland G., Simhadri, J., Cotin, S., Quartey, R., Howell, C.D., Chandra, V., Jana, S.S., Ghosh S. (2022) Understanding Pathogenesis of Alzheimer's Disease Type II Diabetes Mellitus Patients using Pathway Profiler Array (qRT-PCR): A Case Study. Howard University Research Month. Washington DC. USA.
16. Johnson, J., Mondal, T., Cotin, S., Clark, M., Noreen, Z., Loffredo, C.A., Korba, B., Nunlee-Bland G., Quartey, R., Howell, C.D., Chandra, V., Jana, S.S., Ghosh S. (2022) Pilot Investigation on Chronic Type 2 Diabetes and The Risk of Developing Alzheimer's Diseases in Pakistani Population. Yale-Howard Neuroscience Conference.
17. Zarish Noreen, Tanmoy Mondal, Christopher A. Loffredo, Gail Nunlee-Bland, Jyothirmoi Simhadri, Jheannelle Johnson, Sharliene Cotin, Brent Korbe, Ruth Quartey, Charles D. Howell, Maria Arif, Attya Bhatti, Vijay Chandra, Sidhartha S. Jana, Sharoon Shahzad, Somiranjan Ghosh. Similarities in Pathobiology of Alzheimer's Disease and Type 2 Diabetes Mellitus: A Proof of Concept by a Case Study. In Alzheimer's Association International Conference® (AAIC 2022®), San Diego, California, July 31-August 04, 2022.
18. Forbes C, Miller T, Green HJ, Manning DK, Allni Miller, Woods G, Noreen Z, Loffredo CA, Nunlee-Bland G, Simhadri JI, Bhatti A, **Ghosh S**. Do Type 2 Diabetes and Alzheimer's Disease Pathogenesis Shared Any Gene Expressions? Lesson Learned through High-Throughput Taqman Low Density Array (TLDA). First Annual Minority Science and Engineering Improvement Program, Capacity Competitiveness Enhancement Model (CEM) Conference, Washington DC, Oct. 28, 2019.
19. Jennings TA, Noreen Z, Green HJ, Manning DK, Miller A, Bhatti A, Loffredo CA, Nunlee-Bland G, Simhadri J, **Ghosh S**. Differential Gene Expression in Type 2 Diabetes and Alzheimer's Disease Patients of Pakistani by Taqman Low Density Array (TLDA): A Snapshot. Proceedings of the Howard University Research Symposium, Washington DC, April 12, 2019. pp 39.
20. Ramsahoye M, Noreen Z, Nnanabu T, Vilmenay K., DeJesus J, Loffredo CA, Nunlee-Bland G, **Ghosh S**. Molecular Transcriptomics by Taqman Low Density Array (TLDA) Revealing Gene Expressions in African-Americans with Type 2 Diabetes in Washington, D.C. 2018 Annual Biomedical Research Conference for Minority Students (ABRCMS) Conference, Indiana Convention Center in Indianapolis, IN, November 14-17, 2018.
21. Abiona O, Allen A, **Ghosh S**, Smith M, Robinson C, Ullah H. The Isolation, Purification, and Characterization of Phage Razza. 2018 Annual Biomedical Research Conference for Minority Students (ABRCMS) Conference, Indiana Convention Center in Indianapolis, IN. November 14-17, 2018.
22. Kayla Johnston et al. A Study of Differential Gene Expression by Tumor Associated Macrophages(tam) in the Tumor Microenvironment(tme). 2018 Annual Biomedical Research Conference for Minority Students (ABRCMS) Conference, Indiana Convention Center in Indianapolis, IN, November 14-17, 2018.

23. Nnanabu T, Vilmenay K, Noreen Z, Ramsahoye M, DeJesus J, Loffredo CA, Nunlee-Bland G, **Ghosh S**. Snapshot on the Specificity of Selective Genetic Signatures (Biomarker Genes) for Type 2 Diabetes among Different Ethnic Populations. 2018 medical student summer research program (mssrp) Symposium, Howard University Hospital, Washington DC, August 5, 2018.
24. Ramsahoye M, Noreen Z, Nnanabu T, Vilmenay K, DeJesus J, Loffredo CA, Nunlee-Bland G, **Ghosh S**. Gene-Expressions in African-Americans with Type 2 Diabetes around Washington, D.C. 2018 Annual Summer Research Symposium of Washington Baltimore Hampton Roads Louis Stokes Alliance for Minority Participation (WBHR-LSAMP), Virginia State University, Petersburg, VA, July 26, 2018.
25. Noreen Z, Loffredo CA, Nunlee-Bland G, Apmly FR, Saad MT, Bhatti A, **Ghosh S**. Type 2 Diabetes & Alzheimer's Disease in Pakistani Population. RCMi Translational Science Conference 2017, Washington DC, USA, Oct. 28-Nov. 1, 2017.
26. Shakoori A, Trnovec T, Murinova (Palkovicova) L, Sovcikova E, Mitra PS, Dutta SK, Sonneborn D, Hertz-Picciotti I, Hoffman EP, Loffredo CA, **Ghosh S**. Organochlorine Exposures and Neurobehavioral Disorder in Slovak Children: A Proof of Concept through Molecular Transcriptomics. Proceedings of the Howard University Research Symposium, Washington DC, April 13, 2017. pp 57.
27. Banerjee HN, Hodge S, Kahan W, Mandal S, Weber D, Lapidus R, **Ghosh S**. A study of in vitro and in vivo effects of a novel peptide and rhenium compounds on prostate cancer. In Proceedings of the American Association for Cancer Research. American Association of Cancer Research, Washington DC, 2017 April 01.
28. Walker R, Banerjee N, Kahan W, Parotti B, Bell D, **Ghosh S**, Sarkar F, Banerjee H. A study to investigate the differential expression of noncoding MiRNA and their target genes in the transcriptome of prostate cancer derived from African American and Caucasian Patients. 2016 Annual Biomedical Research Conference for Minority Students (ABRCMS) [037], Tampa, FL.; Nov. 9-12, 2016.
29. **Ghosh S**, Loffredo CA, Mitra PS, Trnovec T, Palkovicova Murinova L, Sovcikova E, Hoffman EP, Dutta SK. PCBs exposure and future cancer incidences in Slovak children: An assessment from molecular finger printing through experimental and epidemiological investigation. 9th PCB International PCB Workshop, Kobe, Japan, Oct. 9-12, 2016.
30. **Ghosh S**, Loffredo CA, Mitra PS, Trnovec T, Palkovicova Murinova L, Sovcikova E, Hoffman EP, Dutta SK. Future Possibilities of Cancer Incidences in PCBs-exposed Children of Slovakia: An assessment from experimental and epidemiological gene expression studies. Howard University Research Week Presentation, Washington DC, pp 26-27, April 14, 2016.
31. Mitra PS, **Ghosh S**, Dutta SK. Toxicogenomics of Environmental Chemical Exposures: Disease Risk in Human. In Molecular Simulation & Design, System Biology, Genomics, and Big Data at Advancing Computational Biology @ Howard University Symposium, Washington DC, March 26, 2014.
32. **Ghosh S**, Mitra PS, Malve P, Trnovec T, Palkovicova L, Sovcikova E, Hertz-Picciotto I, Sonneborn D, Ghimbovschi S, Hoffman EP, Dutta SK. Biomarkers of Metabolic Disorders Leading to Obesity and Type II Diabetes for Environmental PCBs Exposures. 7th PCB Workshop, Arcachon, France, 27-31 May, 2012.
33. **Ghosh S**, Mitra PS, Malve P, Trnovec T, Palkovicova L, Sovcikova E, Hertz-Picciotto I, Sonneborn D, Ghimbovschi S, Hoffman EP, Dutta SK. Validation of Signature Biomarkers by High-Throughput Taqman® Low Density Array (TLDA) in PCB-exposed Population.

Abstracts of the 2011 Conference of the International Society of Environmental Epidemiology (ISEE), Barcelona, Research Triangle Park, NC, 13-16 September 2011.

34. **Ghosh S**, Mitra PS, Trnovec T, Palkovicova L, Sovcikova E, Sonneborn D, Hertz-Picciotto I, Ghimbovschi S, Hoffman EP, Dutta SK. Early Disease and Disorder Biomarkers in PCB-exposed Slovak Population: A Genomic Approach. 6th International PCB Workshop, Visby Sweden, May 30th - June 2nd, 2010.
35. Dutta SK, **Ghosh S**, Mitra PS, Sonneborn D, Hertz-Picciotto I, Trnovec T, Horska A, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP. Early Disease Biomarkers of PCB-exposed Human Population. Exposure Biology Program, 3rd Annual Grantee Meeting, Bethesda, MD, January 26-27, 2010.
36. Mitra P, **Ghosh S**, Dutta, SK. Complexity and Challenges to Establish the Disease Biomarkers for PCB exposed Human Population. Accelerating Development and Advancing Personalized Therapy (ADAPT) Congress Conference, Washington DC, 22nd - 25th September 2009.
37. **Ghosh S**, Dutta SK, Zang S, Trnovec T, Palkovicova L, Sovcikova E, Ghimbovschi S, Eric P, Hoffman EP. PCB Exposure in vitro (PBMC): Differential Gene Expression, Pathway Analysis for Possible Mode(s) of Actions, and Disease Development in Comparison with PCB-exposed Slovak Population. International Society of Environmental Epidemiology (ISEE). Dublin, 25th - 29th August 2009.
38. Dutta SK, **Ghosh S**, Zang S, Trnovec T, Palkovicova L, Sovcikova E, Sonneborn D, Hertz-Picciotto I, Ghimbovschi S, Eric P, Hoffman EP. Identification of Early Disease Biomarkers in 45 Months PCB-exposed Slovak Population, ISEE. Dublin, 25th - 29th August 2009.
39. Dutta SK, **Ghosh S**, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Horska A, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP. Early Disease Biomarkers of PCB-exposed Human Population. Exposure Biology Program, 2nd Annual Grantee Meeting, Bethesda, MD, January 13-15, 2009.
40. **Ghosh S**. Gene Environment Interaction: Effort to Develop Early Disease Biomarker in PCB-exposed Human Population. in New Direction and Advances in Biological and Chemical Exposure Assessment for Epidemiological Risk Assessment (Workshop). University of California at Barkley, LA, July 10-11, 2008.
41. Dutta SK, **Ghosh S**, Chatterjee R, Chen Y-Q, De S, Zang S, Kesari A, Moses L, Hoffman EP. Differential Gene Expression Profiling of kidney (HK-2 cell) Induced by PCBs, 5th PCB Workshop. New Knowledge Gained from Old Pollutant, Iowa City, Iowa, 18-22nd May, 2008.
42. **Ghosh S**, De S, Chen Y-Q, Sutton DC, Ayorinde FO, Dutta SK. Polychlorinated Biphenyls (PCB-153) and (PCB-77) absorptions in Human Liver (HepG2) and Kidney (Hk2) Cells in vitro: PCB Levels and Cell Death. 5th PCB Workshop, New Knowledge Gained from Old Pollutant, Iowa City, Iowa, 18-22nd May 2008.
43. Dutta SK, **Ghosh S**, Chatterjee R, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Palkovicova L, Hoffman EP. PCB-exposed Human Population: Search for Potential Genomic Biomarkers. 5th PCB Workshop, New Knowledge Gained from Old Pollutant, Iowa City, Iowa, 18-22nd May, 2008.
44. De S, **Ghosh S**, Chatterjee R, Chen Y-Q, Moses L, Kesari A, Hoffman EP, Dutta SK. PCB Induced Congener Specific Oxidative Stress Response by Microarray Analysis using Human

Liver Cell Line. 5th PCB Workshop, New Knowledge Gained from Old Pollutant, Iowa City, Iowa, 18-22nd May, 2008.

45. Dutta SK, **Ghosh S**, Chatterjee R, Zang S, Sonneborn D, Hertz-Picciotto I, Trnovec T, Horska A, Palkovicova L, Sovcikova E, Ghimbovschi S, Hoffman EP. Early Disease Biomarkers of PCB-exposed Human Population. Exposure Biology Program, 1st Annual Grantee Meeting, Bethesda, MD, January 24-25, 2008.
46. Dutta SK, **Ghosh S**, Chen YQ, De S, Moses L, Hoffman EP. Polychlorinated Biphenyls (PCBs) from Air and Food could Induce Liver Diseases in Human: Cytochrome P450 (CYP1A1) and Metallothionein (MT1K) are Candidate Genomic Biomarkers. SERDP-ESTCP Training & Workshop, Washington DC, November 28-30, 2006.
47. Ghosh S, De S, Dutta SK. Chronic exposures of PCB and Carcinogenicity: Molecular approach to address this controversy. The 4th PCB Workshop, Zakopane, Poland, September 6-10, 2006.
48. Dutta SK, **Ghosh S**, Chen YQ, De S, Moses L, Hoffman EP, PCB Induced Gene Expression by Microarray Analysis in Human Cells In Vitro: Development of Genomic Markers. The 4th PCB Workshop, Zakopane, Poland, September 6-10, 2006.
49. Dutta SK, **Ghosh S**, De S, Chen YQ, Hoffman EP. Human Organ Specific In vitro Assessment Though Expression Profiling. World Biomarker Summit, Philadelphia, 26-28 Sept, 2005.
50. Dutta SK, **Ghosh S**, De S, Chen YQ, Moses L, Kesari A, Ayorinde FO, Hoffman EP, Genome-wide Search of Biomarkers for Human Renal and Liver Injuries Caused by PCBs: Tissue and Congener Specificity. Post Genomic Summit (PGS), Beijing, China, May 17-19, 2006.
51. **Ghosh S**, De S, Chen YQ, Dutta SK. Controversies on Chronic Exposures of PCBs: Molecular Toxicogenomics Approach. Post Genomic Summit (PGS), Beijing, China, May 17-19, 2006.
52. **Ghosh S**, De S, Chen YE, Shaffagatin A, Omorogbe O, Ayorinde F, Dutta SK. PCB 153 Metabolism in Human Cell Line HepG2(Liver) and Hk2 (Kidney) in vitro and in Microflora of Human Relevance. ASM 105th Annual Meeting, Georgia, Atlanta, 5-9 June, 2005.
53. Chen YQ, De S, Moses L, Hoffman E, **Ghosh S**, Dutta SK. Polychlorinated Biphenyls (PCBs) Induced Gene Expression Profiling in Human Kidney Cells. Proceedings of the ASM 105th Annual Meeting 2005, Georgia, Atlanta, 5-9 June 2005. p427.
54. De S, **Ghosh S**, Chen YQ, Moses L, Hoffman EP, Dutta SK. PCB induced gene expressions in Human Liver Cells. ASM 105th Annual Meeting 2005, Georgia, Atlanta, 5-9 June 2005. p427.
55. Banerjee S, **Ghosh S**, Hazra AK, Seal T, Vedosiromoni R, Dutta P, Besra SE, Mukherjee B. Puffer Fish Toxin: Molecular Architecture. 90th ISCA, Bangalore, 1-8 January 2003.
56. **Ghosh S**, Hazra AK, Banerjee S, Mukherjee B. Ecological Importance of Indian Marine Puffers, in Asian Symposium on Medicinal Plants and Species (ASOMPS X), Abst. No. PP 42, p 226, Dhaka, November 18, 2000.
57. Banerjee S, **Ghosh S**, Hazra AK, Dutta P, Besra SE, Vedasiromoni R, Bhattacharyya D. Mukherjee B. Puffer Fish Toxin: Unusual Molecular Structure, in Asian Symposium on Medicinal Plants and Species (ASOMPS X), Abst. No. IL 40, p 59, Dhaka, November 18, 2000.
58. **Ghosh S**, Hazra AK, Banerjee S, Sur T, Mukherjee B. Hypolipidemic Activity of Puffer Liver Oil on experimentally Induced Hyperlipidemic Rabbit. International Congress on "Frontiers in Pharmacology and Therapeutics in 21st Century." p-136, 1-4 December, New Delhi, 1999.

59. Banerjee S, Ghosh S, Hazra AK, Bhattacharyya D, Mukherjee B. Isolation of Toxic Principle from Indian Marine Puffers, in the international congress on "Frontiers in Pharmacology and Therapeutics in 21st Century." p-141, 1-4 December, New Delhi, 1999.
60. Hazra AK, **Ghosh S**, Banerjee S, Mukherjee B. Bioactivity of the Compounds Isolated from Indian Marine Puffers. International Symposium 20th IUPAC Symposium on the Chemistry of Natural Products, Abst. No. BO-37, Chicago, Illinois, USA, 1996, September 15-20.
61. **Ghosh S**, Hazra AK, Bannerjee S, Sur TK, Chakraborty R, Roy NM, Mukherjee B. Indian Marine Puffers: Alternative Source of Polyunsaturated Fatty Acids (PUFA). 64th Annual Meeting of Society of Biological Chemists (INDIA), Abs. # 149/P1E24, Page 94, October 6-8, Lucknow, India, 1995.
62. **Ghosh S**, Hazra AK, Chakraborty R, Roy NM, Mukherjee B. Hypolipidemic Agents From Marine Sources with Special Reference to Poisonous Fishes." Asian Symposium on Medicinal Plants and Species (ASOMPS VIII), Abst. No. CP 16D, Malaysia, June 12-16, 1994.
63. Hazra AK, **Ghosh S**, Basak S, Sadhukhan RK, Chakraborty SL, Mukherjee B. Puffer Fish Toxin: The Intriguing Nature. International seminar "Traditional Medicine: A challenge to The Twenty First Century", Abst. No. 9.24, Calcutta, Nov. 7-9, 1992.

B. Research Funding:

i. CURRENT & ACTIVE

1. Agency: NIMHD-/NIA (ADMIN-SUPPLEMENT-Fast Track)

Identifying Number: **2U54-MD007597**

Title of the Project:

Identification of key biological pathways and signature genes towards the future risk of Alzheimer's Disease in African American diabetic patient.

Dates of Project Period :**2023-2025**

Corresponding-PI: **Somiranjana Ghosh**

Total Direct Costs over all years of award: **\$250,000.00**

Total Direct plus Indirect Costs over all years of award: **\$250,000.00**

Role on Project: *Principal Investigator* (Lead/Contact PI)

Description: The rationale behind the study is that people of color, especially African Americans, have a higher incidence of Alzheimer's disease (AD), increased symptom severity, and mortality due to several comorbidity factors, namely obesity and type 2 diabetes, which negatively impact their health. The **overreaching goal of this research** is to shed new light on possible interactions between AD and diabetes to understand how race may modify the risk and expression of AD; it may yield new insights biological mechanisms that in turn can inform future diagnostic and therapeutic advances.

Percent Effort: **15%**

2. Agency: NIMHD-RCMI-CENTER GRANT (PROJECT-1)

Identifying Number: **2U54-MD007597**

Title of Project: **Molecular and Genetic Signatures of Perturbed Diabetic Pathways with Hepatitis C Virus infection and co-morbidity risks in African American Population.**

Dates of Project Period :**2019-2024**

Corresponding-PI: **Somiranj Ghosh**

Total Direct Costs over all years of award: **\$1,100,000.00**

Total Direct plus Indirect Costs over all years of award: **\$1,481,238.00**

Role on Project: *Principal Investigator* (Lead/Contact PI)

Description: This project investigates the possible mechanisms by which HCV infection may contribute to the development of diabetes, beyond that attributable to chronic liver disease alone, and identify potential new targets for treatment, management, and prevention of T2DM for this minority AA population, thereby contributing positively to the mission of HU-RCMI Center on health disparity issues

Percent Effort: **15%**

3. Agency: **NCI/NIH**

Identifying Number: **1-P20CA242611-01**

Title of Project: **Howard-Georgetown Collaborative Partnership in Cancer Research-**

Study Title: **Fatty Liver Disease in African Americans**

Dates of Project Period: 2019-2023

Corresponding PI: **Somiranj Ghosh**

Total Direct Costs over all years of award: **\$372,163.00**

Total Direct plus Indirect Costs over all years of award: **\$ 574,991.00**

Role on Project: **Principal Investigator** (Lead/Contact PI)

Description: The overall objective is to identify candidate genes and genetic pathways associated with NAFLD and fill the knowledge gaps of this extreme health disparity issue among AA around the Washington DC region and to shed new light on possible mechanisms by which NAFLD may contribute to the dysregulation of important pre-cancer pathways. In turn, such knowledge will foster the identification of potential avenues for treatment and prevention for this minority population.

Percent Effort: **19%**

4. Agency: Higher Education Commission (Pakistan)

Identifying Number: 1-8/HEC/HRD/2022/2637-IRSIP-51-S.Sc

Title of the Project: **Genetic Elucidation and Molecular Characterization of Learning Disabilities in Pakistani Population.**

Dates of the Projected Period: February 01 to July 31st, 2023.

Corresponding PI: Somiranj Ghosh

Total Direct Cost: **\$ 13,500.00**

Role in the Project: **Foreign PI/ Mentor**

Description: This short-term research is train foreign research student towards partial fulfillment of his Graduate Program that brings together the collaborative research project to investigate molecular mechanism behind onset of Learning Disorder (LD) in School going children of Pakistan. a health issues of Pakistani Population.

iii. RECENTLY COMPLETED

5. Agency: **NIMHD/NIH**

Identifying Number: **5G12MD007597-25** (PI: Southerland; PILOT Project PI-GHOSH)

Title of Project: **Validating a gene expression signature for type 2 diabetes in a low environmental exposure setting of African American Population.**

Dates of Project Period: 2017-2020

Corresponding PI: Somiranj Ghosh

Total Direct Costs over all years of award: **\$100,000.00**

Total Indirect Costs over all years of award: NA

Total Direct plus Indirect Costs over all years of award: **\$ 154,500.00**

Role on Project: **Principal Investigator**

Description: This pilot proposal is to bring together clinical and basic investigators from Georgetown University (GU), Howard University and Howard University Hospital (HU&H) to find out whether our signature metabolic disorder biomarkers are unique or are generic, i.e. are observable in the local Washington DC population.

Percent Effort: **10%**

6. Agency: **NIH**

Identifying Number: **5U01ES016127-04**

Title of Project: **Early Disease Biomarkers for PCB-exposed Human Population**

Dates of Project Period: 2007-2012

Corresponding PI: DUTTA SK

Total Direct Costs over all years of award: **\$1,637,000.00**

Total Direct plus Indirect Costs over all years of award: **\$ 1,872,000.00**

Role on Project: **Co-Investigator**

Description: This is a funded collaborative project with Slovak Medical University and University of California at Davis to develop early disease biomarker using highly PCB-exposed human population

Percent Effort: **100%**

7. Agency: **Agilent Technologies**

Identifying Number: LC-ESI-TOF/MS

Title of Project: Instrument Loan Program-Equipment Grant

Dates of Project Period:2006-2008

Corresponding PI: **DUTTA-GHOSH-AYORINDE**

Total Direct Costs over all years of award: **\$800,000.00**

Total Direct plus Indirect Costs over all years of award: **\$ 800,000.00**

Role on Project: **Co-Investigator**

Description: This is a funded collaborative project with Slovak Medical University and University of California at Davis to develop early disease biomarker highly using PCB-exposed human population

Percent Effort: 5%

ii. UNDER REVIEW (Pending)

1. Agency: **Department of Defense (DoD)**

Identifying Number: NA

Title of Project: **Comparison of Molecular Profiles in Diabetic Obese versus Nondiabetic Obese African American men and Prostate Cancer Aggressiveness.**

Dates of Project Period: 2023-2026

Corresponding PI: **Kwabi-Addo B.**

Total Direct Costs over all years of award: **\$900,000.00**

Total Direct plus Indirect Costs over all years of award: **\$ 900,000.00**

Role on Project: **CO-PI (MPI)**

Description: The proposed work directly addresses the **FY22 PCRP Overarching Challenges to define the biology of prostate cancer progression to lethal prostate cancer to reduce death.** First, studies could identify epigenetic regulated genes common to obesity, diabetes and prostate cancer aggression in African American men and increase our understanding of the genetic

changes contributing to aggressive nature of tumors among African American men and prostate cancer disparity.

Percent Effort: 15%

2. Agency: NIMHD/NIH

Identifying Number: NOT-AG-22-025 (RFA #)

Title of Project: **Comparison of Molecular Profiles in Diabetic Obese versus Nondiabetic Obese African American men and Prostate Cancer Aggressiveness.**

Dates of Project Period: 2023-2024

Corresponding PI: **GHOSH S.**

Total Direct Costs over all years of award: **\$249,754.00**

Total Direct plus Indirect Costs over all years of award: **\$ 386,054.00**

Role on Project: **Principal Investigator**

Description: The goals of proposal is to pinpoint the mechanisms (gene networks) by which chronic metabolic disease (**diabetes**) is contributing to the future risk of developing Alzheimer's in AA T2DM patients; and validate the identified genomic classifier (genes/pathways) in this "ethnic sensitive" disease risk of Alzheimer's in AA populations.

Percent Effort: 15%

iii SUBMITTED EARLIER (Re-submission in Progress)

1. Agency: NCI/NIH

Identifying Number: 1 R01 CA242886-01

Title of Project: **Chronic liver disease and liver cancer risk factors in Puerto Rico**

Dates of Project Period: 2019-2024

Corresponding PI: Loffredo CA (Contact-Lead PI)

Total Direct Costs over all years of award: **\$386,250.00 (Amount Only to Howard)**

Role on Project: **Co-Investigator**

Description: The overarching goals of this research are, twofold: (a) to shed new light on the possible mechanisms by which factors such as diabetes and/or obesity contribute to chronic liver disease risk, and (b) to identify, at an early and preventable stage, a group of patients at high risk for liver cancer years prior to symptomatic onset of disease. Thus, we will identify potential avenues for future treatment and prevention interventions in the territory of Puerto Rico and beyond.

Percent Effort: 15%

2. Agency: NIH/NIGMS

Identifying Number: 1 R01 MD011393-01

Title of Project: **Randomized Trial of VIT-D Supplement to Reduce Hypertension in Pregnancy of African Americans**

Dates of Project Period: 2017-2022

Corresponding PI: Reeves Inze (Contact PI)

Total Direct Costs over all years of award: **\$3,451,553.00**

Role on Project: **Principal Investigator (MPI)**

Description: The overarching goal of our approach can be described as assessing the efficacy of VIT-D to reduce hypertension and possibly preeclampsia by directly measuring VIT-D status and its interplay with genetic and non-genetic factors from biological samples collected from pregnant African Americans in a randomized trial.

Percent Effort: 15%

3. Agency: **US-PAK Science and Technology Cooperation Program 2016 Application**

Identifying Number: **980-PHASE-7**

Title of Project: Phase 7- **International Collaboration Research Initiative on Molecular Epidemiology and Screening of Diabetes Type 2 in Pakistani patients**

Dates of Project Period: 2017-2020

Corresponding PI: Somiranj Ghosh

Total Direct Costs over all years of award: **\$500,000.00**

Role on Project: Principal Investigator (US Site PI)

Description: The overarching goal of the program involved towards the Identification of genetic risk factors that increase the risk of developing T2DM in population of different ethnic origin (Pak-USA). It will help to better understand the pathogenesis of the disease and ethnic variations that exist among various populations and their effect on the disease progression. This will also enable to translate the genetic data into clinical practice and improve prediction of susceptibility to disease.

Percent Effort: 10%

4. Agency: **Department of Science & Technology, Govt. of India**

Identifying Number: **VJR/2018/000018**

Title of Project: **Investigation on Metabolic Dysfunction Pathways as the Precursor of Alzheimer's Disease: A Pilot and Collaborative Approach in Strengthening the Biomedical Research in India.**

Dates of Project Period: 2018-2019

Corresponding PI: JANA SS.

Total Direct Costs over all years of award: **\$35,000.00**

Role on Project: **Vesting Faculty/Scientist**

Description: This collaborative research is developed for joint research involving Howard University, USA and Indian Association for Cultivation of Science (IACS), India to foster joint research to find the causative pathways in developing Alzheimer's. The research is, therefore, to shed new light and may contribute to the disease burden of patients with Alzheimer's, and identify avenues for treatment and prevention, for Indian Subcontinent, a major step forward in Indian S&T and biomedical science strengthen the research base (Alzheimer's) in interest to India including translation of science to practice.

Percent Effort: 10%

5. Agency: **NIH/NIEHS**

Identifying Number: 1 R21 ES027494-01

Title of Project: **Developing a gene expression signature for type 2 diabetes in relation to environmental exposures**

Dates of Project Period: 2017-2019

Corresponding PI: **Somiranj Ghosh**

Total Direct Costs over all years of award: \$275,000

Role on Project: Principal Investigator (Lead/Contact PI)

Description: This proposal is to generate hypotheses about the gene expression pathways associated with the development of diabetes in an African-American population, in order to more fully understand possible causes and avenues for prevention, and to address longstanding disparities.

Percent Effort: **10%**

6. Agency: **JHU-UMD**

Identifying Number: PILOT GRANT

Title of Project: **JHU-UMD Diabetes Research Center Grant- Genetic Susceptibility to Organochlorine Exposure and Diabetes Risk in Children**

Dates of Project Period: 2016-2017

Corresponding PI: **Somiranj Ghosh**

Total Direct Costs over all years of award: **\$ 75,500.00**

Role on Project: **Principal Investigator** (Lead/Contact PI)

Description: The Specific Aim of this pilot proposal is to determine the genotypes of a panel of candidate genes associated with specific molecular pathways, i.e., metabolic disorders, in relation to health outcomes (obesity and diabetes) of the children in this cohort, and to evaluate gene-environment interactions.

Percent Effort: **10%**

7. Agency: **GHUCCTS-ICPP Project** (CTSA Program)

Identifying Number: NA

Title of Project: **Collaborative Study to Identify Molecular Signatures of the Effects of Environmental Exposures on Type 2 Diabetes Miletus (T2DM) in African Americans.**

Dates of Project Period: 2019-2020

Corresponding PI: **Somiranj Ghosh**

Total Direct Costs over all years of award: **\$100,000.00**

Role on Project: **Principal Investigator**

Description: This proposal is a pilot study designed to support and address an important health disparities problem, our specific aim and the goal of our collaboration is to delineate the specificity of molecular biomarkers of exposure that would indicate increased susceptibility type 2 diabetes in a particular ethnic group.

Percent Effort: 10%

8. Agency: **NIH (NIEHS)**

Identifying Number: 1 R21 ES027494-01

Title of Project: **Developing a gene expression signature for type 2 diabetes in relation to environmental exposures**

Dates of Project Period: 2016-2018

Corresponding PI: **GHOSH S.**

Total Direct and Indirect Cost over all years of award: **\$173887.00**

Role on Project: **Principal Investigator**

Description: The goals of this project was to directly assess their interplay with genetic and non-genetic factors and examine the risks for diabetes in a low environmentally exposed population setting. We will thereby shed new light on possible mechanisms and to fully understand possible causes and avenues for prevention, and to address longstanding disparities.

Percent Effort: **10%**

C. Invited Lectures:

1. *Grantee Participants*, Transdisciplinary Collaborations, *Evolving Dimensions of US and Global Health Equity*, 2014 Minority Health and Health Disparity Grantees, NIMHD National Harbor, Maryland, USA, December 2014
2. *Session Chair*, International Society of Environmental Epidemiology (ISEE), Dublin, Ireland, 2009

D. Editorships, Editorial Boards, and Reviewing Activities

Name of Editorial Board/Study Section/Community Organization, Role/Status, Date(s) of Service

1. Scientific Peer Advisory and Review Services (SPARS), American Institute of Biological Sciences (AIBS) Grant Reviewer. 2022-23
2. New Jersey Department of Health (NJDOH) FY23 Cancer Program Reviewer, 2022.
3. NIH Early Career Review Program, Grant Reviewer, 2010-2019
4. Pesticide Biochemistry and Physiology (Elsevier), Reviewer, 2008-Present
5. Environmental International (Elsevier), Reviewer, 2010 - Present
6. Indian Journal of Microbiology (SpringerLink), Reviewer, 2008-Present
7. World Applied Science Journal (WASJ.org), Reviewer, 2012-Present
8. International Journal of Molecular Science (MDPI, AG, Switzerland), Reviewer, 2012-Present
9. Indian Journal of Biochemistry & Biophysics (IJBB), Reviewer, 2010-Present
10. International Journal of Tropical Medicine and Public Health (Cross House, UK), 2014-Present
11. Chemical Research in Toxicology (ACS Paragon Plus Environment, USA), Reviewer, 2-14-Present
12. International Journal of Medical Science and Public Health (IJMSPH, IND), 2010-Present
13. Frontier Journal- Journal of Ethnopharmacology (Switzerland), Reviewer, 204-Present
14. Environmental Disease (Medknow Publication, USA), Reviewer 2016-Present
15. Environmental Toxicology (Wiley InterScience), Reviewer, 2016-Present
16. Hazardous Materials (Elsevier), Guest Reviewer, 2016-Present
17. Biodegradation (Springer), Guest Reviewer, 2010-Present
18. Tumor Biology (Springer), Guest Reviewer, 2018-Present
19. Protein Journal (Springer), Guest Reviewer, 2018-Present
20. 2014 Minority Health and Health Disparities (NIMHD) Grantees' Conference on Transdisciplinary Collaborations: Evolving Dimensions of US and Global Health Equity, Guest Scientific Reviewer, 2014.
21. Biomolecules, MDPI, Reviewer, 2021-Present
22. Cancer Informatics, Reviewer, SAGE Publication, 2022-Present.
23. Sustainability, Reviewer, MDPI Group of Publication, 2022- Present
24. Antioxidant, Reviewer, MDPI Group of Publication, 2022- Present

3. TEACHING, MENTORING, AND ADVISING

A. Teaching Activities

i. Undergraduate Courses

1. Name and Course Number: **BIO-101**

Role: Instructor

Number of Direct* Contact Hours: 20

Year(s) Taught: 2018-2019

Number of Students: 423 in each Semester

Overall Evaluation Score: N/A

2. Name and Course Number: **SEA-PHAGES (HHMI)-BIO-101**

Role: Instructor

Number of Direct Contact Hours*: 150 Hours/in Academic Calendar

Year(s) Taught: 2018-Present

Number of Students: 22 per batch

Overall Evaluation Score: N/A

Average number of Undergraduate students involved in your research program: **Approximately 10 Annually**

B. Major Advisor Graduate Students Research, Thesis, & Dissertation including Mentoring (Post-Doctoral) Training Experience of Mentor(s) - Dr. Somiranjan Ghosh, PhD; (Primary): Dr.

Ghosh received an extensive from NCI in the Department of Cancer Treatment and Diagnosis as a postdoctoral fellow, where he was involved in determining the molecular mechanisms involved in tumor progression (prostate and mammary tumorigenesis) and how this information helps target novel therapies to prevent cancer development or to inhibit tumor progression. The goal was to develop many new cancer drugs and bring new treatments and good ideas to clinical research. His research involvement included the study of the mechanistic basis of action of drugs on different cell lines, especially on prostate cancer (PC3), breast cancer (MCF7), and lung cancer (A549), the leading cause of cancer mortality in the United States. With these research activities, information flows from the patient to the lab and back to the patient again. This strong background knowledge led him to full-fledged clinical research, particularly with minority health and health and health disparity, in which he excelled others in his niches at Howard. Besides his stellar research background, his mentoring activities are exemplary. The details of his mentoring activities are below:

SI No.	Name (Year)	Role	Research Area	Present Status/Current Involvement
Postdoctoral				
1.	Dr. Shizhu Zhang, (2008-10)	Mentor/ Advisor	PCBs Exposure and health Effect	Professor, College of Life Science, Nanjing Normal University Nanjing, China
2.	Dr. Raghunath Chatterjee, (2009-10)	Mentor/ Advisor		Professor, ISI, Kolkata, India
3.	Dr. Jyothirmai Simhadri (2019-2022)	Mentor/PI	Heath Disparity in African Americans	Research Scientist, Howard University Sickle Cell Center, USA
4.	Dr. Tanmoy Mondal (2022-Current)	Mentor /PI	Liver Cancer / Health Disparity	Member Faculty, Howard University, USA.
Graduate Studies (PhD/MS)				
5.	Dr. Sharlein Cotin (2021-24)	Mentor/ Advisor	Metabolic Diseases/ Cancer	NA
6.	Dr. Zarish Noreen (2017-19)	Foreign Advisor	Metabolic Disease/ ALZ/AD	Lecturer; IIUI, Islamabad, Pakistan
7.	Dr. Maria Arif (2019-2020)	Foreign Advisor	Type 2 Diabetes/	Research Scientist, NUST/Pakistan.
8.	Dr. Thomas Nnanabu, 2018-20	Mentor/ Advisor (HU) Advisor (Harvard)	Molecular Mechansim of ALZ disease and Type 2 Diabetes	MD/MLA, Pediatrician in Seattle, WA. USA
9.	Ms. Joy Choku. MS (2018-19)	Advisor (ECSU)	Prostate Cancer in AA	Graduate Student, ECSU, NC. USA.
10.	Dr. Supriyo De, (2004-2009)	Mentor/ Advisor	Gene expression/ Disease & Disorders	Head, Computational Biology and Genomics Core, NIA, Baltimore, USA.
11.	Dr. Yongqing Chen, (2004-2009)	Mentor / Advisor	Exposure Biology Gene Expression	Regulatory Scientist, FDA, Silver Spring, MD. USA.

12.	Dr. Kriste Magie, (2004-2010)	Mentor Advisor	/	Environmental Chemical Exposure	Freelance Medical writer. NY
13.	Dr. Aisha Adam (2004-12)	Mentor Advisor	/	Environmental Chemical Exposure	Unknown
14.	Dr. Leisel Lashley (2004-2010)	Mentor Advisor	/	Environmental Chemical Exposure	Research Scientist, USDA, ARS. Beltsville, MD, USA
15.	Mr. Jermaine Barker, MS. (2008-10)	Mentor Advisor	/	Environmental Chemical Analytics	Director of Technology at BRMi, Chevy Chase, MD, USA

Note: During his tenure at Howard (20 Years and continuing), Dr. Ghosh has mentored/guided 50+ undergraduate students from various schools and colleges for their independent and summer research through his lab and acknowledged their contribution to the research. Due to space paucity, no individual names are mentioned here.

Professional responsibilities and Activities:

A. University Services:

i. Department (Role/Function, Committee Name, Dates (Years) of Service).

1. Member, HU-RCMI Center-Steering Committee, 2018-Present.
2. Member, Research Advisory Council (RAC), Community Outreach Program.

ii. School (Role/Function, Committee Name, Dates (Years) of Service)

1. Faculty Research Symposium Committee Member, HU-Graduate School, 2014-Present.

Medical School Courses

i) Name and Course Number: Molecules and cells, unit 2 / medicine & society, Unit 1

Role: Course Facilitator

Number of Direct* Contact Hours: 4 hour in two session each

Year(s) Taught: 2010-2018

Number of Students: 30

Overall Evaluation Score: N/A

ii. Graduate Biomedical Education Courses

Name and Course Number: Howard University MSSRP Summer Research

Role: Mentor/Advisor

Number of Direct* Contact Hours: 40 hrs./Week/Student

Year(s) Taught: 2017-2019

Number of Students: 4

Overall Evaluation Score: N/A

Average number of Postdoctoral Fellows you train per year = 4

4. SERVICE

A. University Service:

i. Department

Role/Function, Committee Name, Dates (Years) of Service

3. Member, HU-RCMI Center-Steering Committee, 2018-Present.

4. Member, Research Advisory Council (RAC), Community Outreach Program. HICN

ii. School

Role/Function, Committee Name, Dates (Years) of Service

2. Faculty Research Symposium Committee Member, HU-Graduate School, 2014-Present

B. Professional Volunteering Service:

1. Member MCSL (Montgomery County Swim League) Serving as Certified Referee in local swim league

2. Member USA Swimming (PVS Swimming)- Certified Official for USA Swim Competition.

5. HONORS AND AWARDS

1. Faculty Author Award, Howard University, 2005-2018

2. Visiting Postdoctoral Fellowship, National Institute of Health, 2003- 2004

3. Research Associate, Department of Ocean Development, Govt. of India, 2000-2003

4. Senior Research Fellowship, Department of Ocean Development, Govt. of India, 1993-2000

5. Junior Research Fellowship, Department of Ocean Development, Govt. of India, 1991-1993

6. PROFESSIONAL SOCIETY MEMBERSHIP

Dates (in Years) of Membership Society Name, Leadership Role (if appropriate)

1. 2007, The Indian Science Congress Association, Life member

2. 2004-2010 American Society of Microbiology

3. 2010-2018, Sigma XI, Professional Member

4. 2010-Present, American Association of Advancement of Science, Professional Member

5. 2010-Present Foundation for Advanced Education in the Sciences, Voting Member

I certify that this curriculum vitae is a current and accurate statement of my professional record.



Signature: _____

_____ Date: 08/01/2024