CURRICULUM VITAE

TANMOY MONDAL, PhD

Post-Doctoral Fellow; Adjunct Lecturer Department of Biology, Howard University

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ACADEMIC QUALIFICATION

Degree	Board/University	Percentage	Year
Ph.D. Biotechnology	Maulana Abul Kalam Azad University of Technology	-	2022
M.Sc. Microbiology	West Bengal University of Technology	7.08/10	2013
B.Sc. Biotechnology	Berhampur University	63.10	2010

HONORS

2018 - 2020	Senior Research Fellowship from Council of Scientific & Industrial Research (CSIR), India
2013 – 2015	Junior Research Fellowship from Inter-University Accelerator Centre (IUAC), India
2012, 2013	Graduate Aptitude Test in Engineering (GATE), Department of Higher Education, India.

PROFESSIONAL EXPERIENCE

RESEARCH

2022-Present	Post-Doctoral Fellow	Howard University, Washington, DC, USA- Dr. Somiranjan Ghosh's Laboratory. "Molecular and Genetic Signatures of Perturbed Diabetic Pathways with Hepatitis C Virus infection and Co-morbidity Risks in African American Population."
2020–2022	Molecular Biologist	Murshidabad Medical Collage and Hospital, India
2018–2020	Senior Research Fellow	Maulana Abul Kalam University of Technology, India at <i>Prof. Subrata Kumar Dey</i> 's lab - " Study of Risk Factors associated in medical diagnosis Using Radionuclide. "
2016–2018	Graduate Research Assistant	Maulana Abul Kalam University of Technology, India at <i>Prof. Subrata Kumar Dey</i> 's lab - "Study of Radiation induced genomic instability on mammalian cells <i>in-vitro</i> ".
2015–2016	Graduate Research Assistant	Dr. Biswajit Audddy's lab - Chigurupati Technologies Private Limited — "Studies on evaluation of hepatoprotective and antioxidant effect of processed Glycyrrhiza glabra fortified ethanol formulation (NTX) in alcoholic subjects"
2013–2015	Junior Research Fellow	Maulana Abul Kalam University of Technology, India at <i>Prof. Subrata Kumar Dey</i> 's lab - "Effects of Heavy Ion Radiation on Human Cord Blood Hematopoietic Stem Cells".

TEACHING EXPERIENCE

- 2023–**Present Adjunct Lecturer**: Department of Biology, Howard University, Washington DC. Subject Biology.
- 2021–2022 **Guest/Visiting Faculty:** Department of Environmental Sciences, Maulana Abul Kalam Azad University of Technology, WB, India. Subject Compulsory Environmental Biology.
 - **Dissertation Work:** 1. Biology major undergraduate student (Total no. 6), Howard University, USA (2022-2023). 2. M.Sc. (Total no. 4) and M.Tech. (Total no. 3) Students for their independent research dissertation work (2017-2019) at Maulana Abul Kalam Azad University of Technology, WB.
 - **Practical class**: Taken M.Sc. and MTech. Students (batch of 2017-2019) at Maulana Abul Kalam Azad University of Technology, WB.

PUBLICATIONS

PATENT

Subrata Kumar Dey, **Tanmoy Mondal**, Gourkanti Chandra, Sandip Pal (2019). **A Synergistic Herbal Composition from Fermented Black Tea Having Radioprotection and Process of Preparing the Same.** (Indian Patent No. 365840).

PEER REVIEWED

Year 2024

- 1. Tanmoy Mondal, 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. Transcriptomic Analysis of Alzheimer's Disease Pathways in a Pakistani Population. *J Alzheimers Dis Rep.* 2024 Mar 19;8(1):479-493. IF-3.2
- 2. Tapas K. Sur, Tanmoy Mondal, Jheannelle Johnson, Sharleine T. Cotin, Abisha Neupane, Gail Nunlee-Bland, Christopher A. Loffredo, Zarish Noreen, Brent E. Korba, Vijay Chandra, Siddhartha S. Jana, Bernard Kwabi-Addo, Sumit Sarkar, Somiranjan Ghosh. Developing Non-Invasive Molecular Markers for Early Risk Assessment of Alzheimer's Disease. The Journal of Prevention of Alzheimer's Disease. (Under Review).

Year 2023

3. Tanmoy Mondal, Smith CI, Loffredo CA, Quartey R, Moses G, Howell CD, Korba B, Kwabi-Addo B, Nunlee-Bland G, R. Rucker L, et al. Transcriptomics of MASLD Pathobiology in African American Patients in the Washington DC Area†. International Journal of Molecular Sciences. 2023; 24(23):16654. IF-5.6

- 4. Noreen Z, Tanmoy Mondal, Loffredo CA, Nunlee-Blnad G, et al. Similarities in Pathobiology of Alzheimer's Disease and Type 2 Diabetes Mellitus: A Proof of Concept by a Case Study. *Alzheimers Dement*. 2023; 19(Suppl.1): e062039. IF-14.0
- 5. Cagle, E., Lake, B., Banerjee, A., Cuffee, J., Banerjee, N., Gilmartin, D., Liverman, M., Brown, S., Armstrong, E., Bhattacharya, S., Ghosh, S., Tanmoy Mondal. and Banerjee, H. (2023) 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. Computational Molecular Bioscience, 13, 21-34. IF-1.76

Year 2022

- 6. Tanmoy Mondal, Loffredo CA, Simhadri J, Nunlee-Bland G, et al. 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. IF-8.0
- 7. Simhadri, J., Loffredo, C., Tanmoy Mondal, Noreen, Z., Nnanabu, T., et al. (2022) Correlates and Covariates of Type 2 Diabetes in an African American Population in the Washington DC Area. *Open Journal of Epidemiology*, 12, 431-448. doi: 10.4236/ojepi.2022.124035. IF-0.53
- 8. Arif, M.; Tanmoy Mondal; Majeed, A.; Loffredo, C.A.; et al. Peroxisome Proliferator-Activated Receptor-α (PPARα) Expression in a Clinical Population of Pakistani Patients with Type 2 Diabetes and Dyslipidemia. *Int. J. Mol. Sci.* 2022, 23, 10847. IF-5.6
- **9.** Tanmoy Mondal, Loffredo CA, Trnovec T, Palkovicova Murinova L, et al. Gene expression signatures in PCB-exposed Slovak children in relation to their environmental exposures and socio-physical characteristics. *Environ Sci Pollut Res Int.* 2022 Aug;29(40):60531-60541. **IF-5.8**

Year 2021

- **10. Tanmoy Mondal**, Nautiyal A, Ghosh S, Loffredo CA, Saha C, Mitra D, Dey SK. (2021) **An evaluation of DNA double strand break formation and excreted guanine species post whole-body PET/CT procedure.** *J Radiat Res*; 62(4): 590–599. doi: 10.1093/jrr/rrab025. **IF-2.0**
- 11. Nautiyal A, Tanmoy Mondal, Goel A, Dey SK, Mitra D. (2021) Biological Effects Associated with Internal and External Contamination of Diagnostic Nuclear Medicine Sources: An *In vitro* Study. *Indian J Nucl Med*; 36(3): 288–292. IF-0.5
- 12. Nautiyal A, Tanmoy Mondal, Manu, Kaushik A, Goel A, Dey SK, Mitra D (2021). Significant reduction of radiation dose and DNA damage in Whole-Body PET/CT study without compromising diagnostic image quality. Journal of Radiation Research and Applied Sciences. 14(1):358-368. IF-1.7
- 13. Nautiyal A, Tanmoy Mondal, Mitra D, Goel A, Dey SK, Kaushik A (2021). A simple and novel approach to estimate organ cumulative activities and internal absorbed doses using external measurement for ¹⁸F-FDG positron emission tomography. *Radiat Prot Dosimetry.* 196(3-4):141-152. IF-1.0

Year 2020

- 14. Seal T, Chaudhuri K, Pillai B, Chakrabarti S, Auddy B, Tanmoy Mondal (2020). Wild edible plants of Meghalaya State in India: Nutritional, minerals, anti-nutritional, vitamin content and toxicity studies. *Pheog Mag.* 16:S142-51. IF-0.7
- 15. Seal T, Chaudhuri K, Pillai B, Chakrabarti S, Tanmoy Mondal, Auddy B (2020). Evaluation of antioxidant activities of various solvent extracts of Litsea cubeba fruits, toxicity studies and its DNA damage protective effects. *Heliyon*. 6 e03637. IF-4.0

Year 2019

- **16. Tanmoy Mondal**, Nautiyal A, Agrawal M, Mitra D, Goel A, Dey SK. (2019) ¹⁸**F-FDG induced DNA damage, chromosomal aberration, and toxicity in V79 lung fibroblast cells.** *Mutat Res Gen Tox En* 847 503105. **IF-1.9**
- 17. Nautiyal A, Tanmoy Mondal, Mukherjee A, Mitra D, Kaushik A, Goel HC, Goel A, Dey SK. (2019) Quantification of DNA damage in patients undergoing non-contrast & contrast enhanced whole body PET/CT investigations using comet assay and micronucleus assay. *Int J Radiat Biol*; 95(6):710-719. IF-2.6

Year 2018

18. Tanmoy Mondal, Nautiya A, Patwari A, Amenti, Mitra D, Goel A, Dey SK. (2018) **DNA double** strand breaks, repair and apoptosis following 511 keV γ -rays exposure using 18 Fluorine positron emitter: An *in-vitro* study. *Biomed. Phys. Eng. Express* 4 065023. **IF-1.4**

Year 2017

- 19. Tanmoy Mondal, Pal S, Dey SK. (2017) Quercetin Mediated Inhibition of Hydrogen Peroxide-induced Genomic DNA Damage and Toxicity. Journal of Biologically Active Products from Nature. 7:3, 200-213.
 IF-2.1
- 20. Chigurupati H, Auddy B, Biyani M, Chakrabarti S, Pandit S, Biswas TK, Tanmoy Mondal, Sidney J. Stohs. (2017) Antioxidant and DNA protective effects of NTX, a proprietary glycyrrhizin/D-mannitol product, in association with alcohol consumption: A randomized, placebo-controlled, double-blind, crossover study. *Journal of Functional Foods* 34 28-35. IF-5.6

Year 2015

21. Tanmoy Mondal, Pal S, Dey SK. (2015) Fermented black tea ameliorates gamma radiation induced cellular and DNA damage in human blood lymphocytes. *International Journal of Biotechnology Research*. 3(4), 055-064. **IF-0.76**

BOOK CHAPTER

22. Biswas TK, Chakrabarti S, Auddy B, **Tanmoy Mondal**, Pandit S, Seal T (2021.) **Pterocarpus santalinus: A Wonder Gift of Nature.** In: Mandal S.C., Chakraborty R., Sen S. (eds) Evidence Based Validation of Traditional Medicines. Springer, Singapore. https://doi.org/10.1007/978-981-15-8127-4_44

ABSTRACTS AND PRESENTATION

- 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
- 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
- Tanmoy Mondal, Christopher A. Loffredo, Coleman I Smith, Ruth Quartey. et al. **Key Biological Pathways of Non-Alcoholic Fatty Liver Disease in African Americans.** CUHDRI Inaugural Conference April 3 4, 2023 Morgan State University, Baltimore, MD
- Tanmoy Mondal, CD Howell, B Korba, G Nunlee-Bland, et al. TGF-β1 Signaling Pathways in Progression Non-Alcoholic Fatty Liver Disease in African Americans. RCMI Consortium National Conference 2023. Bethesda MD, US.
- Tanmoy Mondal, CI Smith, C A Loffredo, B Korba, CD Howell, G Nunlee-Bland, J Johnson, J Sahota, G Moses, S Ghosh. TGF-β1 & E2F1 Signaling Pathways in MASLD African Americans. XULA Health Disparities Conference 2024. New Orleans, Louisiana.
- 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
- Tanmoy Mondal, Nautiyal A, Kaushik A, Mitra D, Goel A, Dey SK. Repeated irradiation of Fluorine-18 enhances biological and biochemical changes in cells: an *in-vitro* prospect study. SNMICON 2018. Indian Journal of Nuclear Medicine. Volume 33. Abstract Supplement Issue. December 2018. ESCI indexed.
- Tanmoy Mondal, Nautiyal A, Kaushik A, Mitra D, Goel HC, Goel A, Dey SK. (2018). Comparative study of DNA damage in V79 cell line after prolong Fluorine-18 exposure with comet assay and γH2AX assay. ICRB 2018. NUJHS vol. 8, Special Issue, October 2018, ISSN 2249-7110.
- Tanmoy Mondal, Nautiyal A, Mitra D, Dey SK. Influence of non-ionic Computed Tomography (CT) contrast agent in DNA double strand breaks (DSBs) formation using Fluorine-18 (¹⁸F) gamma ray exposure on V79 cancer cell line. (February 2018) Conference: 2nd Annual Conference of Nuclear Medicine Physicists Association of India. At: Mumbai.
- Tanmoy Mondal. Nautiyal A, Saha C and Dey SK Study of DNA Damage and Cellular Toxicity at Diagnostic Level of Radiation by ¹⁸F-FDG 4th Regional Science & Technology Congress, 2019 Medical Science 282.
- Tanmoy Mondal, Nautiyal A, Patwari A, Amenti, Dey SK, Mitra D. (February 2017). Study of genotoxicity factors associated with ¹⁸F mediated diagnosis, an *in-vitro* approach. Conference: 1st Annual Conference of Nuclear Medicine Physicists Association of India (NMPAICON 2017). Kolkata.

- Tanmoy Mondal, Dey SK (2016). Green tea kombucha, a good source of natural antioxidant and a probable radioprotector. Conference: 1st International Conference on Nano Technology and Biotechnology (Nano Bio Con 2016), Kolkata.
- 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.
- 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.
- 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.
- 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. RCMI Coordinating Center Conference 2024. Bethesda MD, US.
- Jasneet Sahota, Miracle S Gabriels, **Tanmoy Mondal**¹, Coleman I. Smith², Christopher A. Loffredo³, Brent Korba⁵, Charles D. Howell⁴, Gail Nunlee-Bland⁶, Leanna R. Rucker², Gemeyel Moses¹, 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.
- S. HAIDER; T. Mondal; CA Loffredo; B Korba; M. Azam; S. Ghosh. Transcriptomes of Pakistani Children with Dyslexia And ADHD. RCMI Coordinating Center Conference 2024. Bethesda MD, US.
- 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.** RCMI Coordinating Center Conference 2024. Bethesda MD, US.

SKILLS

Laboratory Skills

- Ability to critically analyze transcriptomic gene expression (microarray) data in a multi-ethnic population cohort.
- Worked on development of early disease biomarkers in a using TaqManTM Low Density Array (TLDA) data, through a population-based studies.
- Hands-on experience on viral load quantification (COVID-19), viral sample collection, patient sample management in a large scale.
- Conduct training and supervising laboratory persons involved in COVID-19 testing.
- Collection, Isolation, and culture mononuclear cells from blood. Laboratory handling of various cell lines (suspended and adherent) that is K562, V79, HeLa, HepG2.
- Handling radioisotopes like Fluorine-18, Technetium 99m, Iodine 131 and conducting experiments at low dose radiation.

- Chromosome preparation, staining, counting and detection of abnormal chromosome from karyogram. Handling of human patient sample (Blood, Urine etc.) and flexible to perform different type of assay techniques cell viability (MTT), genotoxicity (micronuclei assay), DNA double strand breaks (Comet assay, Gamma H2AX assay).
- Checking of low dose radiation induced toxicity by analyzing Cell cycle, DNA index, frequency of polyploidy, Cell apoptosis and necrosis. Immunofluorescence staining with Gamma H2AX, DAPI for nucleus, JC1 for mitochondria and other florescent stain like EtBr, PI, Hoechst 33342.
- Working with polyphenols, tea extract and measuring antioxidant, radio-protective property.
- Experienced various techniques e.g., Isolation of DNA, RNA, Protein, Gel Electrophoresis (SDS-PAGE), RFLP, RAPD, Western blotting, PCR, RT-PCR, FACS analysis.

Software Skills

• Ikaros[™] Karyotyping Platform for chromosome analysis, CaspLab & Opencomet for DNA damage quantification, ImageJ for image processing and analyzing. SPSS, Patients based case control study, Cross- Sectional and Cohort analysis. Significance of randomized Samples and power analysis.

RESEARCH EXPERIENCE

- 2 years CSIR Senior Research fellow "Study of Risk Factors associated in medical diagnosis Using Radionuclide".
- 1-year TEQIP Sponsored Research Assistants "Study of Radiation induced genomic instability on mammalian cell *in-vitro*".
- **2 years Junior Research fellow** (IUAC sponsored project) "Effects of Heavy Ion Radiation on Human Cord Blood Hematopoietic Stem Cells".
- **6-month project** (Chigurupati Technologies Private Limited Sponsored Research Fellow) "Studies on evaluation of hepatoprotective and antioxidant effect of processed Glycyrrhiza glabra fortified ethanol formulation (NTX) in alcoholic subjects".
- **6-month project** -"Investigation of physiochemical and radioprotective property of Fermented Black Tea extract and Evaluate a way to diminish the non-targeted cell injury and to enhance the therapeutic ratio during chemo and radiotherapy by the help of natural available antioxidant."

CONFERENCE / SEMINAR / WORKSHOPS ATTENDED

Sl. No.	Conference / Seminar / Workshops	Date
01.	Trends in Electron Microscopy in Frontier Science	March 24, 2011
02.	Workshop on Intellectual Property Rights. Organized by: Patent Information Centre, West Bengal State Council of Science & Technology (WBSCST), Technology Information, Forecasting and Assessment Council (TIFAC) and Ekta Incubation Centre, WBUT	August 17-18, 2010
03.	"ANVESHAN"-Student Research Convention 2012-2013	January 28- 30, 2013
04.	3 rd National School on Radiation Biology, Venue: Inter-University Accelerator Centre (IUAC), New Delhi	November 25-29, 2013
05.	2 Day Workshop on Corporate Communication. Organized by: MAKAUT, Sponsored by: TEQIP-II	May 30-31, 2016
06.	Sumer workshop n Bioprocess Engineering Lectures and Laboratory 2016, Organized by: Department of Biotechnology (IIT Madras)	June 27, 2016
07.	National level workshop on "STATISTICS IN BIOLOGY", Organized by: Department of Biotechnology (MAKAUT AND TEQIP II)	September 29, 2016

08.	NANOBIOCON, TEQIP II WBUT SPONSORED 1 ST International Conference on Nanocomputing and Nanobiotechnology, Organized by: MAKAUT, WB	October 3-5, 2016
09.	Short course on Writing Academic Publication, Organized by: (IIT Gandhinagar)	March 16-18, 2017
10.	2 Day Seminar on Cancer Diagnosis and Therapy, organized by: MAKAUT, WB, Sponsored by: TEQIP II	March 30-31, 2017
11	AASLD The Liver Meeting, Washington, DC, USA	Nov 04-08, 2022
12	2023 RCMI Consortium National Conference, Bethesda, MD	April 12-14, 2023

AWARDS

- Best Paper award in 50th Annual Conference of The Society of Nuclear Medicine (SNMICON 2018), India.
- Best Paper award in 2nd Annual Conference of Nuclear Medicine Physicists Association of India. (NMPAICON 2018).
- Best Poster award in 1st International Conference on Nano Technology and Biotechnology (Nano Bio Con 2016), Kolkata. Organized by West Bengal University of Technology, Kolkata.

SCIENTIFIC APPOINTMENTS AND PROFESSIONAL SOCIETY MEMBERSHIP:

2020 - 2022	Molecular Biologist, Murshidabad	Medical College and Hospital, India

2016 – 2018 TEQIP Research Assistant, Maulana Abul Kalam Azad University of Technology, India

2020 - Present Member, State Molecular Biologist Association, India

2023 – Present Member, American Association for the Study of Liver Diseases

2023 – Present Member, Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART)

INVITED GUEST SPEAKER:

Diversity In Cancer Research Seminar: **NONALCOHOLIC FATTY LIVER DISEASE (NAFLD) IN AFRICAN AMERICAN: A QUICK LOOK.** May 17, 2023. Organized by: American Cancer Society and Howard University. Washington DC, USA

JOURNAL REVIEWER:

- 1. *Diabetology* Publisher MDPI
- 2. Healthcare Ocular Wellness & Nutrition Society (OWNS) affiliated Journal, Published by MDPI
- **3.** *International Journal of Molecular Sciences* Australian Society of Plant Scientists (ASPS), Epigenetics Society, European Calcium Society (ECS), European Chitin Society (EUCHIS), Spanish Society for Cell Biology (SEBC) affiliated Journal, Published by MDPI

Complete List of Published Work in My Bibliography:

https://www.ncbi.nlm.nih.gov/myncbi/dr.%20tanmoy.mondal.1/bibliography/public/