DR. DWAIPAYAN SAHA

Physician-Researcher | PhD Scholar – Interdisciplinary Health Sciences
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ABOUT ME

Responsible and experienced physician with a passionate commitment to exceptional patient care. Effective communicator with strong attention to detail and persistent in finding the best treatment options available. Now pursuing a PhD in Interdisciplinary Health Sciences at UTEP, with a strong motivation to leverage research for advancing healthcare quality.

RESEARCH INTERESTS

My research focuses on the molecular mechanisms underlying metabolic diseases particularly obesity and type 2 diabetes — and their links to cardiovascular complications such as Coronary Artery Disease (CAD). I explore the interplay between insulin signaling, lipid metabolism, and mitochondrial function to identify disease-driving factors. Additional interests include immune checkpoint biology, CAR-T therapy, HPV–cardiovascular links, and microRNA therapeutics (miR-33/miR-92a). With a clinical background in medicine, I emphasize prevention and precision medicine strategies to reduce the global burden of cardio-metabolic disease.

EDUCATION

PhD – Interdisciplinary Health Sciences *Aug 2024 – Present*
The University of Texas at El Paso (UTEP), El Paso, TX

- Metabolic, Nutrition and Exercise Research (MiNER) Laboratory
- Focus: molecular mechanisms linking metabolic stress, insulin resistance, and cardiovascular disease

Bachelor of Homoeopathic Medicine and Surgery (Hons.) *2015 – 2022*
Pratap Chandra Memorial Homoeopathic Hospital and College, Kolkata, India

- GPA: 3.24/4 — World Education Services (WES) Approved Evaluation | Total Credits: 161.0
- Core coursework (5.5 years): Anatomy, Physiology & Biochemistry, Pathology & Microbiology, Forensic Medicine & Toxicology, Surgery (ENT, Ophthalmology), Obstetrics & Gynecology, Practice of Medicine, Community Medicine, Organon of Medicine, Homeopathic Materia Medica, Repertory

RESEARCH EXPERIENCE

Doctoral Scholar / Graduate Research Assistant *Aug 2024 – Present*
The University of Texas at El Paso (UTEP) — MiNER Laboratory

- Investigating molecular mechanisms linking metabolic stress, insulin resistance, and cardiovascular disease
- Conducting wet-lab experiments and clinical data analyses on biomarkers in atherosclerosis and cardiometabolic health

- Contributing to multiple peer-reviewed publications on HPV–CVD links, neuro-immune axis in cardiomyopathy, immune checkpoint biology, lipid metabolism, and microRNA therapeutics

Project Assistant *Aug 2023 – Aug 2024*
CSIR – Indian Institute of Chemical Biology (IICB), Kolkata, India

- Worked on 'Phenome India – CSIR Health Cohort Knowledgebase (PI-CHeCK)': developing personalized risk prediction scores for cardiometabolic disorders under Dr. Partha Chakrabarti (MD, PhD), Senior Principal Scientist
- Performed qPCR, SDS-PAGE, DNA/RNA isolation, Western blot, cell culture, transfection, and adenovirus purification for in vivo murine studies
- Co-authored multi-centric Phenome India consortium publications on MASLD burden and inter-platform variability of blood parameters

Research Trainee *May 2023 – Aug 2023*
Sengupta Lab, University of Calcutta, Kolkata, India

- Led systematic review and meta-epidemiological analysis of chromosomal disorder case reports across India for a national genetic database
- Designed data entry protocols, collected demographic data, and performed qPCR for lung cancer patient screening
- Applied bioinformatics tools including PolyPhen-2 and SNPs&GO for variant analysis

Life Science Research Associate (Internship) *Aug 2022 – Sep 2022*
BioLim Centre for Science and Technology

- Gained hands-on experience in biomedical research laboratory procedures

PROFESSIONAL EXPERIENCE

Physician (Private Practice) *Jan 2022 – Present*

- Providing 30+ consultations daily across five organizations
- Conducting on-site emergency calls and chronic care clinics; maintaining outstanding physician-patient relationships
- Performing physical examinations, diagnosing cases, and implementing therapeutic and dietary management plans
- Writing prescriptions with detailed counseling on side-effects and potential adverse reactions

Junior Doctor – Clinical Internship *Jan 2021 – Jan 2022*
Pratap Chandra Memorial Homoeopathic Hospital & College

- Trained in in-patient and out-patient care under specialized physician guidance
- Physical examination of 100+ patients with careful medical history documentation
- Prepared patients for X-rays, ECG, vaccinations, and dressing changes

Junior Doctor – Clinical Internship *Jul 2021 – Sep 2021*
Bidhannagar Subdivisional Hospital

- Assisted with pediatric immunizations and patient health monitoring
- Educated patients on infectious disease prevention and management

Junior Doctor – Clinical Internship *Nov 2021*

Beliaghata ID & BG Hospital

- Managed and examined case studies with emergency care procedures
- Measured patient vitals, prepared case papers, and assisted senior physicians in diagnosis

GRANTS & FUNDING

CHS Dodson Research Grant *2025*
College of Health Sciences, The University of Texas at El Paso

Dodson Research Grant *Fall 2025*
The University of Texas at El Paso

PEER-REVIEWED PUBLICATIONS

** Joint first authorship | † Corresponding author |*

1. Saha, D., Dutta, P., Chakraborty, A. Immune Checkpoint Restoration as a Therapeutic Strategy to Halt Diabetes-Driven Atherosclerosis. Biology, 14(12), 1731. *[*Joint first authorship]*
2. Arvind, M., Verma, A., Prakash, S., Kumar, V.S., Uddin, M.A., Narayan, A., ..., Saha, D., et al. Burden of MASLD and liver fibrosis: evidence from Phenome India cohort. The Lancet Regional Health – Southeast Asia, 45.
3. Ali, M.I., Rathore, M., Ujjainiya, R., Prakash, S., Sahu, A., Ray, S., Rawat, N., ..., Saha, D., et al. Assessing Inter-platform Variability of Blood Parameters across Three Automated Platforms: Report from Multi-centric Phenome India Study. medRxiv, 2026.01.24.26344729.
4. Dutta, P., Saha, D. Dysregulated Skeletal Muscle Lipid Handling Drives Myocardial Mitochondrial Dysfunction Through ASK-1 and PPARγ Signaling. Lipidology, 3(1), 5. *[*Joint first authorship]*
5. Aziz, F., Chakraborty, A., Saha, D., Dutta, P. Immune effector cell-associated neurotoxicity syndrome: integrative mechanisms, predictive biomarkers, and translational pathways for prevention in CAR T-cell therapy. Frontiers in Neurology, 17, 1739021.
6. Saha, D.*, Dutta, P.*, Rebello, K.R., Shankar, A., Chakraborty, A. Exploring the potential link between human papillomavirus infection and coronary artery disease: a review of shared pathways and mechanisms. Molecular and Cellular Biochemistry, 480(7), 3971–3994.
   *[*Joint first authorship| † Corresponding author]*
7. Saha, D., Dutta, P., Chakraborty, A. The Neuro-Immune Axis in Cardiomyopathy: Molecular Mechanisms, Clinical Phenotypes, and Therapeutic Frontiers. Immuno, 5(4), 45. *[*Joint first authorship]*
8. Dutta, P., Saha, D., Giri, A., Bhatnagar, A.R., Chakraborty, A. Decoding the CD36-centric axis in gastric cancer: insights into lipid metabolism, obesity, and hypercholesterolemia. International Journal of Translational Medicine, 5(3), 26. *[*Joint first authorship]*
9. Saha, D., Dutta, P., Hussain, T., Chakraborty, A. Dual targeting of miR-33 and miR-92a in atherosclerosis: mechanistic insights, therapeutic potential, and translational challenges. ExRNA, 7(2). *[*Joint first authorship]*
10. Sengupta, S., Phenome India Consortium (incl. Saha, D.). Study research protocol for Phenome India-CSIR Health Cohort Knowledgebase: A prospective multi-modal follow-up study on a nationwide employee cohort. Biology Methods and Protocols, 10(1), bpaf061.
11. Arvind, M., Verma, A., Sreeshma Raj, K., Prakash, S., Kumar, V.S., Uddin, M.A., ..., Saha, D., et al. Unveiling the burden of MASLD and liver fibrosis in India: Novel insights from the Phenome India study into fibrosis without MASLD. medRxiv, 2025.10.11.25337761.
12. Phenome India Consortium, Sengupta, S. (incl. Saha, D.). Study Research Protocol for Phenome India-CSIR Health Cohort Knowledgebase (PI-CHeCK): A Prospective multi-modal follow-up study on a nationwide employee cohort. medRxiv, 2024.10.17.24315252.

13. Saha, D., Dutta, P., Sengupta, S., Shahid, S., Sengupta, M. Deciphering the burden of chromosomal disorders in India, bridging the gap between clinical reality and documented evidence: a systematic review and meta-epidemiological analysis. The Nucleus, 1–58. *[*Joint first authorship]*

14. Dutta, P.*, Saha, D.*, Earle, M., Prasad, C.P., Singh, M., Darswal, M., Aggarwal, V., Naik, N., Yadav, R., Shankar, A., Chakraborty, A. Unveiling HPV's hidden link: Cardiovascular diseases and the viral intrigue. Indian Heart Journal, 76(1), 1–5. *[*Joint first authorship]*

15. Mishra, A.K., Gupta, A., Dagar, G., Das, D., Chakraborty, A., Haque, S., ..., Saha, D., Dutta, P., et al. CAR-T-Cell Therapy in Multiple Myeloma: B-Cell Maturation Antigen (BCMA) and Beyond. Vaccines, 11(11), 1721. MDPI.

16. Chakraborty, A., Dutta, P., Saha, D., Singh, M., Prasad, C.P., Pushpam, D., et al. Chimeric antigen receptor CAR-T therapy on the move: current applications and future possibilities. Current Tissue Microenvironment Reports, 4(3), 29–40.

CONFERENCE PROCEEDINGS & ABSTRACTS

1. Saha, D., Dutta, P., Apaflo, J.N., Labadah, J., Fatahimeiabadi, Z., Villalobos, U., John Tomy, I., & Bajpeyi, S. (2025). Unveiling the Limitations of Continuous Glucose Monitoring: Insights from Fasting and OGTT with Advanced Clustering Analyses. International Journal of Exercise Science: Conference Proceedings, 2(17), Art. 110.

2. Apaflo, J.N., Fatahimeiabadi, Z., John Tomy, I., Villalobos, U., Labadah, J., Saha, D., Dutta, P., & Bajpeyi, S. (2025). Neuromuscular Electrical Stimulation Improved Glycemic Control in Population with Hyperglycemia and Overweight/Obesity. International Journal of Exercise Science: Conference Proceedings, 2(17), Art. 121.

3. Villalobos, U., Apaflo, J., Fatahimeiabadi, Z., Labadah, J., John Tomy, I., Saha, D., Dutta, P., & Bajpeyi, S. (2025). Glucose Peak Time During OGTT: A Marker for Metabolic Health and Insulin Resistance. International Journal of Exercise Science: Conference Proceedings, 2(17), Art. 116.

4. John Tomy, I., Apaflo, J., Fatahimeiabadi, Z., Villalobos, U., Labadah, J., Dutta, P., et al. Effect of Neuromuscular Electrical Stimulation on Glycemic Control in a Population with Hyperglycemia. Physiology, 40(S1), 0975.

HONORS & AWARDS

- Finalist – Poster Presentation, PhD Category | Texas American College of Sports Medicine (TACSM) Annual Meeting, 2025

CERTIFICATIONS & CONTINUING EDUCATION

- Managing Atrial Fibrillation in Primary Care — British Heart Foundation
- Type 2 Diabetes Management — Stanford University School of Medicine
- Managing Atrial Fibrillation — Stanford online | edX
- COVID-19 Training for Healthcare Workers — Stanford University School of Medicine
- Introduction to Food and Health — Stanford University School of Medicine
- Hypertension in Primary Care: Improving Control and Reducing Risk — Stanford University School of Medicine
- 2021 Physician Leadership Virtual Journal Club — Ministry of Health and Family Welfare, Government of India
- International Conference on Tobacco Control and Smoking Cessation
- Congenital Hypothyroidism: What Every Primary Care Provider Needs to Know — Stanford University School of Medicine

- Assessment and Diagnosis of Severe AS: The Basics and Evolving Nuances — American College of Cardiology
- Antithrombotic Management of Elderly Patients with Coronary Artery Disease — American College of Cardiology

LANGUAGES

- English — Professional Working Proficiency (TOEFL iBT: 96 | Reading: 23, Listening: 25, Speaking: 22, Writing: 26)
- Bengali — Native Proficiency
- Hindi — Elementary Proficiency

CREATIVE INTERESTS

- Music: Proficiency in guitar and tabla
- Martial Arts: Green Belt in Karate
- Sports: High school football team
- Literature & Writing: Passionate for the written word
- Visual Arts: 3 years of painting training under expert mentorship