

# 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.

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## 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.

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## 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.) Pratap

2015 – 2022

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

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## 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 0 cardiomyopathy, immune checkpoint biology, lipid metabolism, and microRNA therapeutics 0

### **Project Assistant**

CSIR – Indian Institute of Chemical Biology (IICB), Kolkata, India

Aug 2023 – Aug 2024

- 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 0 adenovirus purification for in vivo murine studies 0
- Co-authored multi-centric Phenome India consortium publications on MASLD burden and inter-platform variability of blood parameters

### **Research Trainee**

Sengupta Lab, University of Calcutta, Kolkata, India

May 2023 – Aug 2023

- 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)**

BioLim Centre for Science and Technology

Aug 2022 – Sep 2022

- Gained hands-on experience in biomedical research laboratory procedures

## **PROFESSIONAL EXPERIENCE**

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### **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**

Pratap Chandra Memorial Homoeopathic Hospital & College

Jan 2021 – Jan 2022

- 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**

Bidhannagar Subdivisional Hospital

Jul 2021 – Sep 2021

- 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

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### **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

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\* *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 PPAR $\gamma$  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

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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 0 Hyperglycemia and Overweight/Obesity. International Journal of Exercise Science: Conference 0 Proceedings, 2(17), Art. 121. 0
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

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

## CERTIFICATIONS & CONTINUING EDUCATION

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- 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**

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

## **CREATIVE INTERESTS**

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- 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
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