

S.N o.	MU Student ID	Name	Email ID	Supervisor	Research Area	Research Brief
1	se23plsc001	Adyasha Mishra	se23plsc001@mahindrauniversity.edu.in	Dr. Pijus Kanti Barman	Studying the mechanisms underlying cardiovascular disease risk during aging	Adyasha's PhD research work aims to define how aging associated dysfunction of monocytes, one subtype of the innate immune cells, renders increased risk of atherosclerosis during aging. Specifically, she is studying <u>molecular mechanisms underlying monocyte adhesion to</u>
2	se23plsc002	Anu Priya B	se23plsc002@mahindrauniversity.edu.in	Dr. Mrityika Sengupta	Bacteriophage-based antimicrobials development	Food spoilage is an important global concern. In developing nations reducing food spoilage is an important step towards providing food security. Packaged food that has been prepared hygienically can be an efficient means of providing nutrition in resource
3	se23plsc004	Deogaonkar Shreevatsa Umesh	se23plsc004@mahindrauniversity.edu.in	Dr. Runa Kuley	Neutrophils as drivers of inflammation in Autoimmune Diseases	Neutrophils are critical components of the immune system, playing a key role in defending against infections. However, excessive activation of neutrophils has been associated with inflammation and autoimmune diseases. <u>This study aims to investigate the contribution of</u>
4	se23plsc005	Pragyan Mohapatra	se23plsc005@mahindrauniversity.edu.in	Dr. Manu Smriti Singh	Nanomedicine based Photodynamic Theranostics	Photodynamic therapy (PDT) is a minimally invasive treatment for cancer that uses light-sensitive molecule-Photosensitizer and a specific wavelength of light to selectively destroy cancerous cells. Photosensitizers are <u>hydrophobic molecules with solubility issues.</u>
5	se23plsc006	Priya Bhatt	se23plsc006@mahindrauniversity.edu.in	Dr. Manu Smriti Singh	3D Tumoroid model development	The 3D cell culture model or tumoroid model mimics the in vivo tumor microenvironment more accurately than traditional 2D cultures. It enhances the evaluation of drug efficacy and toxicity by maintaining cell-cell and cell-matrix interactions akin to tumor extracellular matrix. In
6	se23plsc007	Saba Parveen	se23plsc007@mahindrauniversity.edu.in	Dr. Souradyuti Ghosh	DNA nanostructure based sensing and therapeutic applications	DNA nanostructures are malleable and programmable conformations made up of DNA. They can be integrated with multiple type of functional materials such as aptamers, loops, stems etc, and can be engineered to selectively display particular type of functional material

7	se23plsc009	Gaurav Birendra Singh	se23plsc009@mahindrauniversity.edu.in	Dr. Ravi Kiran Donthu	Population genomics	Research in population genomics of agriculturally important insects is economically vital due to its direct impact on crop production and food security. These insects, which include pests like thrips, brown planthoppers, and others, cause substantial yield losses
8	se23plsc010	Sourab Paul	se23plsc010@mahindrauniversity.edu.in	Dr. Jayato Nayak	Microbial production of Biotherapeutic materials with associated bioprocess optimization	Given the growing demand for biosurfactants, with the global market projected to reach USD 6.71 billion by 2032 at a CAGR of 5.4%, and the high associated production costs, the goal of this research is to develop a cost-effective and sustainable manufacturing process for
9	se23plsc013	Sapna Sharma	se23plsc013@mahindrauniversity.edu.in	Dr. Aruna Kumar Ch.	Targeted AAV Capsid Modification through Peptide Insertion for Retinoblastoma, Pancreatic Cancer, and	Our research focuses on the development and optimization of AAV vectors for gene therapy, aiming to correct or replace defective genes responsible for monogenic driven disorders. By leveraging the natural ability of AAVs to deliver genetic material into cells, we
10	se23plsc014	Rashi Satish Prasad	se23plsc014@mahindrauniversity.edu.in	Dr. Bipin Singh	Endolysins based Antimicrobial Peptides	The work aims to use molecular modeling, molecular dynamics simulations, and machine learning techniques to design and optimize potent antimicrobial peptides from endolysins. Machine learning algorithms will be employed to predict and refine peptide designs,
11	se23plsc015	Shrawan Kumar	se23plsc015@mahindrauniversity.edu.in	Dr. Souradyuti Ghosh	Development of aptamer integrated sensors for small molecules and pathogens	Electrochemical sensing has several advantages over optical sensing such as portability, fast response time, and relatively low cost, making them more suitable for limited resource biosensing. In my thesis work, I will explore several methods to integrate aptameric sensing
12	se23plsc016	Aayushi Gupta	se23plsc016@mahindrauniversity.edu.in	Dr. Bipin Singh	Development of Antivenom Peptides	The goal of this work is to develop highly effective, specific, and safe antivenom peptide candidates. This research focuses on developing antivenom peptides through molecular modeling, molecular dynamics (MD) simulations, and machine learning. Molecular modeling
13	se23plsc017	Tanya Verma	se23plsc017@mahindrauniversity.edu.in	Dr. Sanjeev K. Choudhry	Functional diversity of nuclear pore complexes	Nuclear pore complexes (NPCs) are large protein assemblies which control the import of essential proteins and the export of RNA molecules into and out of the nucleus, thereby influencing the synthesis and regulation of proteins necessary for various cellular processes. As

14	se24plsc001	Riya Akhil Jain	se24plsc001@mahindrauniversity.edu.in	Dr. Swarit Jasial	Computer-aided discovery and design of antifungal agents	This work aims to search for potential antifungal agents using computational techniques. Due to the increased rate of fungal infections worldwide and limitations of already existing drugs, such as drug resistance, new compounds are needed in limited time to combat these
15	se24plsc002	Rutvik Kulkarni	se24plsc002@mahindrauniversity.edu.in	Dr. Varun Kumar	Gene editing for low glycemic index in rice.	Rice is one of the most widely grown and consumed staple foods worldwide, providing a major source of energy for billions. Rich in starch (about 80% by weight), its high glycemic index makes it less suitable for people with diabetes. The aim of my study is to develop a rice
16	se24plsc003	Siddhant Dilip Mahabale	se24plsc003@mahindrauniversity.edu.in	Dr. Varun Kumar	Elucidating the Role of the Tomato Microbiome in Mitigating Biotic Stress and Enhancing Plant Growth-	Plant disease outbreaks present significant challenges to global food security by causing losses worldwide of up to 40% of crop yields. The current plant protection methods rely mainly on chemical pesticides which harm the environment by degrading soil health, pose risks to the
17	se24plsc004	B Dhruvi Suresh	se24plsc004@mahindrauniversity.edu.in	Dr. Akanksha Singh	Effect of gut microbiome in the neurodevelopment using Drosophila as a model organism	This work aims to investigate how the composition of gut microbes in fruit flies (<i>Drosophila</i>) influences neurodevelopment. By manipulating the gut microbiome and analyzing its impact on brain function, we hope to shed light on the potential role of gut bacteria in shaping
18	se24plsc005	Chandrika Sharma	se24plsc005@mahindrauniversity.edu.in	Dr. Souradyuti Ghosh	Bio-engineering novel chemoenzymatic modalities in oligonucleotide-based sensing and therapy	Current oligonucleotide therapeutics predominantly uses chemical modifications to improve in vivo stability and biodistribution efficacy. This project will look into novel bioengineering angles (those independent from chemical modifications) of therapeutic oligonucleotides and see
19	Se24plsc006	Mahendra Pratap Singh	se24plsc006@mahindrauniversity.edu.in	Dr. Sabeeha Hasnain	Computational Biology: Multi-Omics Data Analysis and AI for Disease Modeling & Drug Discovery.	<i>I am a Ph.D. scholar in Computational Biology at the Centre for Life Sciences, Mahindra University, working under the guidance of Prof. Sabeeha Hasnain. with a deep passion for addressing complex challenges in computational biology and healthcare through data-</i>
20	se24plsc007	Tanvi Belalekar	se24plsc007@mahindrauniversity.edu.in	Dr. Mrityika Sengupta	Development of Diagnostic and Therapeutic platforms for Tuberculosis	Our research focuses on combating growing resistance and virulence for Tuberculosis by identifying drug resistance mutations specific to Indian population, that can aid to develop a rapid and Lineage-targeted diagnostic panel. By characterizing these mutations, the

21	se24plsc008	R Subhiksha	se24plsc008@mahindrauniversity.edu.in	Dr. Aruna Kumar Ch.	CRISPR-Driven Discovery of Survival Genes in Pancreatic Cancer: Toward Precision Gene Therapy	Pancreatic cancer remains one of the deadliest malignancies, marked by late diagnosis, aggressive progression, and limited therapeutic options. Addressing this urgent clinical challenge, our study aims to identify key survival genes that sustain tumor persistence in
22	se24plsc009	Sreekutty A R	se24plsc009@mahindrauniversity.edu.in	Dr. Priyadarshini P	Identification and validation of biomarkers for the early diagnosis of urolithiasis	My research work is focused on the identification and validation of blood-based biomarker for the early diagnosis of urolithiasis in Indian population. Urolithiasis is one of the most predominant urinary tract ailment and health care burden across the globe. The successful
23	se24plsc010	Bhawna Kumari	se24plsc010@mahindrauniversity.edu.in	Prof. Rajinder Singh Chauhan	Deciphering Key Genes Controlling Nutritional & Antinutritional Factors in Nutraceutical Food Crop (Buckwheat) Through Co-	Buckwheat is a nutritious, gluten-free pseudocereal that has recently gained significant economic importance in several countries due to the growing interest in nutraceutical and functional foods. The two buckwheat species, <i>Fagopyrum esculentum</i> (Common Buckwheat)
24	se24plsc011	Korthiwada Pravalika	se24plsc011@mahindrauniversity.edu.in	Dr. Sarat Chandra Togarcheti	Bioactives from Microalgae, Life Cycle and Sustainability Assessment	Squalene (C ₃₀ H ₅₀), an unsaponifiable lipid, is a basic intermediary metabolite for the biosynthesis of sterols and triterpenes in plants and animals. Shark liver oils and olive oil are major sources for squalene. It is widely used as a dietary supplement, moisturizer, cardio protective
25	se24plsc013	Sneha Banerjee	se24plsc013@mahindrauniversity.edu.in	Dr. Bhaskar Paidimuddala	Protein Engineering and Structures	Inflammasome is a key immune sensor that is responsible for detecting infections and cellular stress, and elicits caspase activation, cytokine maturation and pyroptosis. Although it is essential for host defence, its dysregulation triggers uncontrolled inflammation leading
26	se24plsc016	Shalini Kumari	se24plsc016@mahindrauniversity.edu.in	Dr. Aruna Kumar Ch.	Discovery of Early detection Biomarkers in Lung Cancer	Lung cancer remains a significant cause of mortality worldwide. While advances in therapy continue to be made, the overall prognosis for patients diagnosed with lung cancer remains poor. Early diagnosis has been
27	se24plsc018	Kamalesh Swain	se24plsc018@mahindrauniversity.edu.in	Dr. Manish Kumar	Host transcriptional and post-transcriptional regulation of <i>Mycobacterium tuberculosis</i> infection in	<i>Mycobacterium tuberculosis</i> (Mtb) is the leading cause of infectious disease-related deaths globally. It thrives within macrophages, which hinders both innate and adaptive immune responses. My research aims to uncover the host factors that regulate the cellular and

28	se24plsc019	Bathula Ziona	se24plsc019@mahindrauniversity.edu.in	Dr. Sanjeev K. Choudhry	Investigating the Virulence Mechanisms of Candida Species	Candida species are opportunistic pathogens that are part of the normal human microbiota but can cause infections under conditions like immune suppression. Candida species are among the most prevalent fungal pathogens in humans, causing a wide range of infections
29	se24plsc020	Nakka Sharmila Roy	se24plsc020@mahindrauniversity.edu.in	Dr. Srishti Joshi	Understanding the aggregation pathways and formulation based mitigation strategies for IgG1 MAb therapeutics	Aggregation is Critical Quality Attribute (CQA) for MAb therapeutics and detrimentally impacts the safety, efficacy and immunogenicity of final drug product. Through this work, we aim to understand stress specific aggregation for IgG1 MAb therapeutics and explore