

Senior Research

Symposium

2026

Student research project locations and presentation schedule.

Index of categories begins on the final page.

Behavioral and Social Sciences (BEHA)

Bo1	Janat Ahmad	Analysing Efficiency of Lavandula Angustifolia Anxiolytic Effects/Activity using Drosophila Melanogaster
Bo2	Ahyan Baqar & Sai Narayana	A Meta-Analysis Between Humans' Biofactors and Circadian Rhythms
Bo3	Sebastian Barratt & Jason Zacharatos	Effects of PLA and ABS Microplastics on The Heart Rate, Reproduction, and Growth of Daphnia Magna
Bo4	Shirin Bonthala	Testing Moringa oleifera as a Potential Treatment in Combatting the Negative Effect of Zinc in Soil on the Mobility of Lumbricus terrestris
Bo5	Anna Chinnam	The Effect of Epicatechin on Long Term Memory in Drosophila melanogaster Expressing the HTT Exon 1-Q93 gene
Bo6	Becca Cornell & Zahra Rasuli	The Effect of Alpha Lipoic Acid on Memory and Interpersonal Space in Drosophila melanogaster Models of Chronic Schizophrenia
Bo7	Avaline Czeszewski	Observing the Attraction Effect of Vibrational Frequencies between 2700-2900 Hz on the Eastern Subterranean Termite for Better Capture and Control
Bo8	Jacob Hoppa	Metacognitive Decision-making and Uncertainty Monitoring in Drosophila melanogaster
Bo9	Solenna Hye	Death By Doomscrolling: Researching if our Unhealthy Screen-time Habits Affect Future Generations
B10	Sanjitha James	The Effects of Santalum album and Cedrus atlantica Essential Oils on Stress Behavior in Drosophila melanogaster
B11	Yesheshwani Kandi	Determining if Epigallocatechin Gallate or Theaflavin Works Better to Reduce Paralysis in Caenorhabditis elegans With Alzheimer's
B12	Nandini Kosoor	Flora vs. Flame Retardant: Mitigating the Impact of TBBPA on Associative Memory Using Bacopa Monnieri
B13	Naomi Kwarteng	The Comparative Analysis of Compounds Found in a Lavandula angustifolia Essential Oil on the Anxiety of Caenorhabditis elegans
B14	Daniel Li	Effects of Blue Light on the Growth Progression of Drosophila melanogaster
B15	Miguel Lopes Piedade	The Effect of Propionic Acid (PPA) against Genetically-Induced Oxidative Stress via a Mutation Model in Drosophila melanogaster
B16	Jacob Lynn	The Lasting Effect of Loneliness: Early Social Isolation Disrupts Stress Recovery
B17	Andrea Moolamkuzhi & Josie Peterson	The Effect of Demethoxycurcumin Supplementation on Motor Function and Memory in Drosophila melanogaster Overexpressing ALS-Linked TDP-43 Q331K Mutation
B18	Jayathi Mukkamalla & Jazel Oblepias	The Effect of Curcumin on Filamentous actin Levels and Memory on Aging Drosophila melanogaster
B19	Likhitha Musunuru	The Effect of Exposure to Bisphenol A on the Learning and Memory in Male and Female Drosophila melanogaster of the Fragile X Syndrome Model
B20	Siddharth Nara	The Effect of Zingiber Officinale on Oxidative Damage through Malondialdehyde Expression and Aggression in Drosophila melanogaster
B21	Siri Pamidimukkula	The Effect of Cholecalciferol on Aggression in an Ethanol-Exposed Drosophila melanogaster modeling schizophrenia with an Overexpression of Metalloproteinase 2 in the Mushroom Body

B22	Jahnavi Parikh & Saanvi Suriya	The Effect of the Common Food Preservatives Citric and Benzoic Acid on the Social Impairment Exhibited by a Lead-Induced <i>Drosophila</i> Model of Autism Spectrum Disorder
B23	Deepti Patil	Effects of Oral Exposure to PET Microplastics on Short-Term Memory and Motor Function in <i>Drosophila melanogaster</i>
B24	Tanush Prattipati & Devon Brown	Combined effect of serotonin and dopamine receptor-targeting drugs on hyperactivity in <i>Drosophila melanogaster</i> model of ADHD
B25	Sriya Rangu & Isabelle Ventura	The Effect of Cinnamaldehyde on FoxO Expression and Muscle Wasting in a <i>Drosophila melanogaster</i> Model of Muscle Atrophy
B26	Tyler Shih	Music Visualizer
B27	Jahnavi Singh	Analyzing and Mitigating Bias in AI-Based Resume Screening Systems for Fair Hiring Outcomes
B28	Kyle Vasallo	Investigation of the Learning Process Through Game Development
B29	Akshaj Vishnubhatla & Scarlett Wyatt	Determining the Effect of the Antioxidant Geraniol on the Motor Dysfunction and Oxidative Stress in the <i>Drosophila melanogaster</i> Model of Huntington's Disease
B30	Michael Wang	Simulating Urban Evacuation Traffic Under Authoritative Hurricane Forecasting with Agent-Based Modeling

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AUDITORIUM

2

Biomedical and Health Sciences (BMED)

Do1	Jasmine Arisandy & Sarayu Kadasani	The Effects of Taxifolin on Intestinal Permeability and Gut Derived α -Synuclein Aggregation in <i>Drosophila melanogaster</i> model of Parkinson's Disease
Do2	Rohan Arun	Testing the Combined Effects of Berberine and Cynadin-3-glucoside Chloride on Insulin Regulation in <i>Drosophila Melanogaster</i>
Do3	Addison Barraco	Examining the effects of food dyes on chromosomal aberrations and survival rate in <i>Lymnaea stagnalis</i>
Do3	Gavin Carey	The Effect of Creatine on the Memory of <i>Drosophila melanogaster</i> Exhibiting Alzheimer's Disease
Do4	Niva Bhaktha	The Effect of Natural Antiandrogens on <i>Drosophila melanogaster</i> Induced with Polycystic Ovary Syndrome (PCOS)-like Symptoms
Do6	Quinn Daignault & Grant Alred	Effects of <i>Ganoderma lucidum</i> on Cognitive Dysfunction and Neuropeptide F Expression in <i>Drosophila melanogaster</i> Models of Neurodegenerative Disease
Do7	Yareli Flores	Comparing the Role of Vitamin B7 and Vitamin B12: Impact on IL-6 Cytokine Expression by 4T1 Breast Cancer Cells Inflamed by Lipopolysaccharides
Do8	Mallika Gandhi	Rebuild, Renew, Recover: Testing the Overexpression of RAC1 in Wound Regeneration of <i>Drosophila Melanogaster</i>
Do9	Mahi Garg & Aishu Varanasi	Effect of Varying Concentrations of Blueberry Anthocyanin Extract, Malvidin Chloride, on Mitochondrial Health in <i>C. elegans</i>
D10	Cadence Holman & Arshiya Sharma	Testing the Effects of Rosmarinic Acid from Rosemary Herb on the Visual and Neural Impairment of <i>Drosophila Melanogaster</i> Induced by a High Sucrose Diet
D11	Loyd Jacoby	Investigating the Effect of the Inhibition of Type III Glutamatergic Neurons on the Duration of Learning-Dependent Sleep in <i>Drosophila melanogaster</i>

D12	Samhitha Kolapalli	Evaluating the Effectiveness of Strigolactone and Comfrey on the Growth of Pleurotus ostreatus mycelium to Simulate Stereocilia to Reverse Hearing Loss
D13	Sahana Kulkarni	The Effect of Medioresinol on the Induction of Cell Death of Breast Cancer Cells Through the Activation of the p53 Protein.
D14	Tanvi Kusumba	Assessing the effectiveness of combined treatment of Gold Nanoparticles (AuNPs) and Fucoidan on induction of apoptosis in A549 lung cancer cells
D15	Anthonya Lassissi	Determining the Effect of the Combined Treatment of Sulforaphane and Luteolin on Cell Viability and Apoptosis in 4T1 Cells
D16	Sophie Leftwich	Transformation of Group B Blood to Group O Blood Through the Use of Plasma Transfers and Enzymatic Processes
D17	Hailey Lienau	The Effect of Alternating High and Low Electrical Charges on 4T1 Breast Cancer Cells
D18	Kashish Lotlikar	Dose-Dependent Effects of Origanum vulgare Oil on Glycogen Accumulation in Saccharomyces cerevisiae
D19	Tanvi Madavarapu & Shreya Rajaraman	Determining the Effect of Herbal Melanin Extract from Nigella sativa on Barrier Integrity and Inflammation in a Caco-2 Cell Model of Lichen Planus
D20	Harshita Mondreti & Meghna Yanamala	Investigating the Combination Therapy of 20(S)-protopanaxadiol and Withaferin A on A549 Cells
D21	Reginald Parker II	The Effects of Prolotherapy on the Regenerative Process of Lumbriculus variegatus
D22	Lexi Perry & Sharvi Gandhi	Comparing Efficacy of Bromelain in Electrospun Fibers and Hydrogels for Burn Wound Treatment in the Invertebrate Burn Wound Model of Galleria mellonella Larvae
D23	Ruhani Sujlana & Siri Kalidindi	Comparing Treatments of Selenium and Levothyroxine on a Hypothyroidism Model Through Cell Inflammation in Vitro
D24	Aaron Thomas	An Investigation of the Effect of siRNA on BRAF expression and cell viability using and Modifying B16-F10 cells
D25	Myra Verma	Apigenin Adjunct: A Means for Neuronic Recovery Following Traumatic Brain Injury
D26	Jack Wilson	Getting A grip; Magnesium Carbonate on Galleria Mellonella For Wound Healing

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A U D I T O R I U M

3

Cellular and Molecular Biology (CELL)

E01	Swarnim Bhattarai	siRNA Mediated Knockdown of FUT7 to Attenuate Sialyl Lewis X Driven Triple-Negative Breast Cancer Metastasis
E02	Elliot Breen	Decreasing IL-6 Secretion in Human Leukemia Cell Line THP-1 by Reduction of Inflammation through Inhibition of the JAK/STAT Pathway Using Napabucasin
E03	Benjamin Cai	Analyzing the Efficacy of Electricity in Improving the Penetration of Germicidal Material into Antibiotic Resistant Bacteria
E04	Anuj Duraiswamy	The Effect of Apigenin on the Production of IL-2 Via NFAT Signaling
E05	Ridhi Gutta	Combatting Lassa Fever: Investigating Pathogenesis and Constructing a Preliminary Vaccine Candidate

E06	Srihan Hanumansetty	Analyzing the effect of Eucalyptol on a skeletal muscle atrophy model of C2C12 myotubes by measuring the expression of atrophy indicators FBXO32 and TRIM63
E07	Hisham Kamal	Breakthroughs in antibiotic resistance: How capped silver nanoparticles provide an intriguing alternative to antibiotics
E08	Sharathmika Kilnagar	Investigating the Effect of Natural Treatments Quercetin and Resveratrol on Cell Viability in BxPC-3 Pancreatic Cancer Cells
E09	Hannah Lee & Ria Garlapadu	The Investigation of Dietary Modulation of PI3K-Driven Overgrowth Phenotypes in Drosophila melanogaster
E10	Anirudh Madala	Investigating the Effect of an AMPK Activator and HuR Inhibitor on Cell Viability using CMLD-2 and IM-156 on RIN-5F Cells.
E11	Laila Mogassbi	Determining Whether Bilobalide Can Enhance Curcumin's Ability to Induce p53-dependent Cell Death in Non-small Cell Lung Adenocarcinoma
E12	Ridhi Mudumba & Alyssa Stanford	The effects of Glutamic-Pyruvic Transaminase-targeting siRNA on Hepatocellular Carcinoma as modeled in HepG2 cells
E13	Shreshta Parthaje & Rishan Singh	Effect of Dietary Glucose Concentration on the Transcriptome of a Type 2 Diabetes Model of Drosophila melanogaster
E14	Maya Pathipaka	Investigating Human Leukemia when Exposed to Nrf2-siRNA and ZnPP Treatments to Increase Oxidative Stress
E15	Savni Patil	The Effect of Linalool Concentrations on the Calcium Levels of NaV1.2 in Transfected SH-SY5Y Cells to Provide Management for Epileptic Seizures
E16	Raaghav Perumal	Determining if curcumin and nimbolide express a synergistic decrease in cell viability through a synergistic increase in p53 protein expression
E17	Adithi Pillai	Investigating the expression of DEAD-box helicase 6 as a Therapeutic Target in Acute Lymphoblastic Leukemia Cells
E18	JD Queen	Investigating the Effect of Valerenic Acid on Inhibiting Calcium Deposition in Vascular Smooth Muscle Cells
E19	Manishka Sharma	MT1 Melatonin Receptor Signaling and ERK-Mediated Stress Responses in MCF-7 Cells
E20	Liam Sharma	Determining the effect of trypsin treatment on ovalbumin-induced allergic reaction in RBL-2H3 basophil cell line
E21	Riya Singh	The Effect of Ascorbyl Palmitate on PI3K-AKT Pathway Activity in Burkitt's Lymphoma Cells
E22	Siona Srivastava & Victoria Fleenor	The Effect of Silk Fibroin and Lipopolysaccharides on Wound Healing in Keratinocytes
E23	Nihila Umasankar & Hannah Mottaghi	Investigating the Effect of Modulating the Hsp90-Aha1 Chaperone System with siRNA by Studying Chloride Ion Flux of Cystic Fibrosis Class II (Δ BF508) and III (G551D) CFTR Mutations
E24	Aakansha Vittal	Comparative Analysis of the IL-6 Cytokine Protein Expression through Protein-Corona Modified vs. Pristine Microplastics in SHSY-5Y Cells.
E25	Saanvi Yerram	Assessing the Impact of the Dual-inhibition of DDR1 and FYN on Cell Viability in Human Chronic Myelogenous Leukemia
E26	Yannis Yitbarek	The Effect of Epigallocatechin-3-Gallate (EGCG) on the Expression of RNA-Binding Protein SERBP1 in the Gastric Cancer Cell Line KATO-III

Materials Science (MATS)

M01	Ali Anbar	Evaluation of Carbon Fiber and Aerogel for Increased Dexterity in Firefighter Turnout Gloves
M02	Samyuta Bochetty	Evaluating YOLOv11m for microplastic detection and classification using a custom dataset via F1 score, and developing a web application for morphology detection and polymer type identification
M03	Ryan Bui	Determining the Optimal Concentrations of Supplemental Acids When Anodizing Aluminum Alloy 2024 to Maximize Corrosive Resistance
M04	Aryan Dhami & Gavin Davis	Reducing Nail Waste: Evaluating the Applicability of Treated Wood and Polymer in Fastener Free Joints
M05	Haani Ghafoor	Design and Evaluation of a Custom Fused Granular Fabrication Extruder for Recycling 3D Printing Thermoplastics
M06	Aneesh Kandimalla	Optimizing Metal-Organic Framework Monoliths for Carbon Dioxide Adsorption Using Computer-Aided Design and Finite Element Analysis
M07	Sreesha Kunthsam	Engineering roofing granules with reactive mineral coatings to capture atmospheric CO ₂
M08	Michelle Lee	The Effect of Differing Levels of Copper and Aluminum in a CuAlSn Alloy on the Strength-to-Weight Ratio of the Alloy
M09	Neha Muralitharan	Developing Hydrophobic Coatings to Prevent Water-Induced Degradation on Stainless Steel Bridges
M10	Aditya Nair	Biodegradable PVA-Gelatin Films Coated with Reduced Graphene Oxide: Effects on Electrical Conductivity and Mechanical Durability
M11	Drew Olivieri	Improving the Flame-Retardant Qualities of a Glove Through Nanotech Enhancements for Upper Extremity Personal Protective Equipment
M12	Isaac Pingry	Optimizing Composite 3D Printed Running Shoe Plates as a Replacement to Expensive Carbon Fiber Standards
M13	Eli Popp	Optimizing Layer Adhesion Strength for Fused Deposition Modeling using Acetone and Cyanoacrylate
M14	Vishnu Pullela & Vishnu Pullela	Detecting Lung Cancer Vocs Using a Diverse E-nose Array
M15	Nakul Shashidhar & Ameya Darade	Applying Pre-Stretching to Conductive Electrode Layer in DEAs for Better Anisotropic Dielectric Elastomers
M16	Annabelle Tjahya	Comparing the Effect of Sodium Alginate-Gelatin Hydrogel Dressings on the Wound Closure of Burned <i>G. mellonella</i> Larvae to that of Liquid Bandages
M17	Jayden Tong	Studying the Effects of Modifying Zeolite with Cationic Surfactant on the Removal of Acid Blue 25 Using Spectrophotometric Measurements
M18	Jordan Turnquist	The Effect of Iron-doping TiO ₂ , ZnO, and SnO ₂ on their Band-Gap Energies
M19	Ishaan Vairagiwala	Revolutionizing low orbital rockets: understanding if fiberglass is more efficient than carbon fiber for rocket fins to yield higher acceleration.
M20	Aashka Vaja	Self-powered textiles: enhancements to the piezoelectric properties of polyvinylidene fluoride and quartz on fabric using copper nanoparticles
M21	Risha Varma & Sarah Hossain	Investigating The Viability of In Situ Resource Utilization for Moon Habitation Construction
M22	Qichen Wang	Developing a Method of Upcycling Waste Polylactic Acid Into Thermoplastic Adhesives With Citric Acid, Polyethylene Glycol, and Monobutyltin oxide

- M23** **Danielle Yemo** Determining the Ideal Substrate Composition of Cassava Peelings, Coconut Coir, and Rice Husks in Substrates to Increase Yield Strength and Mechanical Properties of Ganoderma Lucidum Mycelium Bricks
- M24** **Timothy Yoo** Machine Learning Driven Inverse Design of Photonic Metamaterials

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R O O M

304

Energy: Sustainable Materials and Design (EGSD)

- Jo1** **Jacob Camp** Implementing a Digital Design Framework to Reduce the Embodied Carbon of Transitional Humanitarian Shelters
- Jo2** **Abeku Darko** Modeling the use of battery energy storage systems(BESS) for net-load ramp reduction in renewable power systems
- Jo3** **Emma Edwards** Extraction and Comparison of Anthocyanin Rich Plant Dyes as Cleaner Solar Cell Photosynthesizers
- Jo4** **Benjamin Gore** Utilizing Temperature Induced Flow and In-Pipe Turbines to Harness Energy from Data Center Cooling
- Jo5** **Jackson Kelly & Aditya Sharma** Evaluating The Cost-Effectiveness Of Chlorella vulgaris Biodiesel Cultivation Methods
- Jo6** **Vladyslav Kryvyi** Studying the Effects of Operating Temperatures of a Zinc Ion Battery on the Dendrite Mitigating Capabilities of Electrolyte Additives as Measured by Scanning Electron Microscopy
- Jo7** **Arnav Patil** Multi-Objective Optimization of Sustainable Aviation Fuel Blends Using a Physics- and Kinetics-Informed Turbofan Simulation
- Jo8** **Sophie Reinhardt** Investigation of Tungsten Thermophotovoltaic Cells in a Geothermal Setting
- Jo9** **Logan Taylor** Converting Mechanical Energy to Electrical Energy via Piezoelectric/Electromagnetic Panels
- Jo10** **Sarina Virmani** Examining the Effects of Salt Type, Supporting Material, and Salt Loading on Thermochemical Reaction Efficiency for Renewable Energy Storage
- Jo11** **Luke Weller** Limiting Battery Production by Storage of Variable Energy via Capillary-Fed Electrolysis
- Jo12** **Sreekesh Yadlapalli** Exploring Innovative Solutions For Reliable Energy Storage to Empower Communities in Nigeria Through Sustainable External Energy Sources.
- Jo13** **Ayden Yester & Evan Pauley** Investigating Bacteria Incorporation into Concrete as a Potential Self-Healing Mechanism for Crack Restoration

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R O O M

1202

Embedded Systems (EBED)

R01	Atharv Bapuram	Updated Design and Implementation of a High-Performance Handheld Gaming Device Based on Xbox Series S Architecture
R02	Dresden Cook	Smart Puck
R03	Brennan Hudock	Solar Project
R04	Hassan Joumaa	Finding Optimal Coil Shape for Use in Wireless Resonant Inductive Power Transfer EV Charging Systems
R05	Connor Mraw	Evaluating the Effect of Temperature, Current, and Voltage on EV Battery Sensor Performance
R06	Aryan Patel	SafeSight

Robotics and Intelligent Machines (ROBO)

R07	Graisen Edwards	Traffic Forecasting via the Addition of External Features
R08	Rhea Nirmal	Wildfire Risk Prediction Using Vegetation Stress in Australia
R09	Joey Noble	Detection of Heart Murmurs with Machine Learning
R10	Rohit Rajakumar	Improving the Efficacy of VSLAM in Dynamic Environments
R11	Aiden Wang	Enhancing Multi-Robot Motion Planning with Diffusion Models for Multi-Objective Environments

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R O O M

1203

Software Design (SFTD)

S01	Elijah Banta	Tennis Form Analysis Algorithm
S02	Arush Bodla & Anik Bakshi	RegiMon: Monitoring the Windows Registry in Real-Time
S03	Ethan Llontop	AI-Driven Browser Extension to Reduce Content Scrolling
S04	Luke Ma	Design and Implementation of a Library-based Game Engine using C++
S05	Arpit Pareek	Early Warning Prediction of Zooxanthellae Expulsion From Coral Systems Using Multimodal Deep Learning
S06	Benjamin Shaffrey	Multithreading and Memory Optimization for Multi-Agent Pathfinding
S07	Aarav Shetty	Fit-Net
S08	Sanjana Tanguturi	Language Learning Browser Extension
S09	Ranson Thayambath	Pest Repulsion through Native Predator Auditory Signaling
S10	Muhammad Yasin & Bhavya Annamreddy	Assessing Cambodian-Trained Machine Learning Models for Predicting Childhood Malnutrition in Myanmar

Technology Enhances the Arts (TEHA)

S11	Alexandra Baranov	Computer Critic
S12	Hadassah Dakin-Davis	Housing Access Equity: Digital Solutions for Affordable Housing
S13	Alexander Fleenor	AI Closet
S14	Om Karle	Food Allergy Finder
S15	Sean Morrison	Killing Time: Creation of a Turn-Based 2-D RPG Video Game Within the Godot Engine
S16	Aarav Vangipuram & Aarish Bharatam	FragrAI : AI Fragrance Recommendation Engine
S17	Anna Wardin	Pulse + Petals
S18	Nathaniel White	Blender Animation Add-On

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R O O M

1303

Microbiology (MCRO)

No1	Durga Jyotsna Ghanta	Evaluating the Antibacterial Efficacy of Streptomyces Extracts Against Antibiotic-Resistant Bacteria
No2	Jon Jesuraj	The Effect of Temperature on the Enzymatic Activity of Saccharomyces cerevisiae During Glucose Fermentation
No3	Hasini Kurmala	Reducing Biofilms on Surgical Mesh Through Controlled Electrochemical Current Treatment as an Alternative Approach to Combating Antimicrobial Resistance
No4	Aneesh Merupula & Jack Mills	The Effect of Multispecies Biofilms on Rust Prevention on Mild Steel in a Simulated Maritime Environment
No5	Jack Mills & Aneesh Merupula	The Effect of Multispecies Biofilms on Rust Prevention in a Maritime Environment.
No6	Kashifa Mirza	Investigating the Effect of Manuka Honey Components Methylglyoxal (MGO) and Methyl Syringate on Bacillus Subtilis Biofilm Inhibition
No7	Roman Tikoyan	Utilizing a Titanium Dioxide and Zinc Oxide Nanoparticle Coating to Reduce Biofilm Formation on Urinary Catheters
No8	Felix Zhao	Formation of Dual-Species Biofilms of Pseudomonas fluorescens and Listeria innocua

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R O O M

1307

Computational Biology and Bioinformatics (CBIO)

Go1	Krish Behera	EpiSight: A Graph Convolutional Network for Epileptogenic Zone Localization in Drug-Resistant Epilepsy Using Phase-Amplitude Coupling
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Go2	Pranav Divichenchu	SPECTRA: De Novo Broad-Spectrum Sepsis Inhibitor Design Across 27 Protease Targets via a Multi-Architecture Generative Adversarial Pipeline
Go3	Alexis MacKay	Using SAMSON molecular docking to identify novel FGFR1 inhibitors from Human Endogenous Metabolites in-silico
Go4	Prahas Nallani & Bovli Tawfik	Novel Neuroevolution to Train Neuromorphic AI using Co-Adversarial RL, P-bits, and Optimizations
Go5	Rithvik Pathuri	Computational Design of Protein Inhibitors Targeting A β 42 Aggregation in Alzheimer's Disease Using Molecular Docking
Go6	Emily Pisarev	Determining the Favorability of Intraspecific Cooperation over Interspecific Cooperation by Darwinian Evolution Using a Genetic Algorithm
Go7	Sharat Sakamuri	GMVAE-4P: an explainable GMVAE-based neural network for patient classification using single-cell and bulk RNA-seq
Go8	Kyle Zheng & Brandon Zhang	Emotion Aware Music Therapy

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R O O M

1311

Plant Sciences (PLNT)

Qo1	Dean Kaelber & Seth Magutu	Does Fertilizer Reduce Stress-Related Pigments in Plants Exposed to Air Pollution
Qo2	Abinaya Shri Mareeswaran & Suri Thakore	Use of L-Ascorbic Acid to Mitigate Effect of Polystyrene Microplastics on Growth of Brassica rapa
Qo4	Nadia Rifai	The Heart of Emissions: Decaying Heartwood as a Suitable Peat Moss Alternative when Growing Plants
Qo5	Bahar Shirzay	Observing the Effect on Plant Growth of Spinach with the Inoculation of Priestia Megaterium under Abiotic Stressors
Qo6	Supraj Velaga & Shourish Sarker	The Investigation of a Novel Plant Based Solution's Concentration on Drosophila melanogaster Reproduction
Qo7	Warren Zhang	Pain to Positivity; Post-Injury Healing and Cell Wall Strength of Sunflower (Helianthus annuus) Wounds from Indole 3-Butyric Acid and Snail Mucin Application
Qo8	Anisha Sarkar	

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R O O M

1314

Mathematics (MATH)

Po1	Brian Tay	Nutsolver: Computing Optimal Poker Strategies
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Physics and Astronomy (PHYS)

Po3	Ananya Ananth	Advanced Orbit Calculator: Non-Uniform Density of Asteroids and their Satellite Parameters
Po4	Sofia Bouselhami	Combating Space Debris: Modeling Laser Ablation to Minimize Plasma Shielding through Changing the Pulse Shape of a High-Power High-Frequency Laser
Po5	Daksh Challa	Optimization of Nose Cones for Atmospheric Reentry of SmallSATS
Po6	Sidharth Chukka	Validating the Existence of Quasi-Periodic Oscillations in Astronomical Objects Using Synthetic Waveforms
Po7	Nishi Chute	Multimodal machine learning for solar energetic particle forecasting using HOPE signals and EUV images
Po8	Manan Jayani	Investigating the Effects of Satellites' Eccentricity, Inclination, and Mass Ratios on Their Orbits with Applications to Uranus' Moons
Po9	Matthew Kicingor	Determining the Influence of Black Hole Merging Events on Local Space-Time Fabric Through the usage of Lagrange Point Stability
P10	Vibhun Naredla	Revealing how dust grain properties and temperature distributions in high redshift galaxies correlate with star formation activity using Machine Learning
P11	Malika Niyazova	Predicting X-Class Solar Flares Using Hourly Sunspot Area Changes
P12	Nathan Pattet	Determining the periodic variability of classical Cepheids, T Tauris, and suspected variable stars using SKYNET
P13	Aditya Shah	Surviving Stellar Fury: A Million Year Analysis of Atmospheric Escape of Exoplanets caused by Interplanetary Shocks
P14	Prachi Thakkar	Analyzing Solar Modulation of Galactic Cosmic Rays Using Fermi-LAT Observations
P15	Kevin Zhang	Uncovering the Secrets of the Universe: Hubble Constant Found from High-Redshift Baryon Acoustic Oscillations

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R O O M

1316

Engineering Technology: Statics and Dynamics (ETSD)

Ko1	Cas Balderramma-Iriarte	Collecting Nest Data with Sensor-Equipped Pods to Support East Coast Bird Conservation
Ko2	Judah Abram	Developing a Morphing Aerofoil to Optimize the Lift to Drag Ratio of an Aircraft During Flight
Ko3	Jessica Awuah	Maze Runners: Analyzing efficiency of slime mold Physarum polycephalum as a model for generating evacuation routes in the Academies of Loudoun building
Ko4	Dane Bowen	Generating Electricity From The Passive Movement of a Tuned Mass Damper to Improve Skyscraper Energy Efficiency
Ko5	David Cassidy	Optimizing the Structure of Synthetically Replicated Shark Denticles to Reduce Drag on High Speed Aircraft
Ko6	Sai Cherukuri & Ananya Thodupunuri	Utilizing Acoustic Vibrations To Non-Invasively Analyze Structural Deformation In Buildings
Ko7	Luke Ducich	Investigating the Effects of Wing Angles on Downforce and Drag Generation in Formula Racecars

Ko8	Nathaniel Hempson	Optimizing Aero-Acoustic and Aerodynamic Characteristics of Toroidal Drone Propellers
Ko9	Astrid Novakovitch	Designing and Optimizing Aerospike Nozzle Propulsion Models Using ANSYS Fluent
K10	Charlene Pagano	Development of a Self-Leveling Patient Transport System Using Inclinometer-Based Feedback Control
K11	Dhruva Repala	Implementing Adaptive Winglets Utilizing Shape Memory Alloys
K12	Ryan Stultz & Dheenav Rallabandi	Utilizing a Peltier Module in a Portable Refrigeration Unit for Off Grid Vaccine Transport and Last Mile Cold Chain Sustainability

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R O O M

1401

Biomedical Engineering (ENBM)

Co1	Anthony Adjei	Modeling the Migration of Dictyostelium Discoideum Cells in Gelatin Methacrylate Hydrogels In Order to Replicate Extracellular Matrix Properties
Co2	Adeel Ahmed	Generalizability and Calibration of Deep Learning Models for PDAC Detection on Contrast-Enhanced CT
Co3	Rayan Ali	Utilizing a Zinc Oxide and Lactic Acid Coating to Reduce Mold and Bacterial Growth on PLA Food Storage Containers
Co4	Grayson Bradley	Detection of Diabetic Foot Ulceration via Plantar Pressure Sensors in Soles
Co5	Nandan Dammalapati	Vocalize
Co6	Matthew Feldmann	Investigating Cryogenic Cupping and Its Effect on Cooling Depth in Simulated Human Tissue
Co7	Pranika Gaddam	Seizure Sense
Co8	Arnav Gupta & Ashmith Yaramada	Neuroquest
Co9	Tarushv Kosgi & Julien Le Teigner	Developing an App to Investigate Whether an Automatically Adjusting Active Filter can Mitigate CVD
C10	Angelina Le-Hoang	Developing a Plasmonically Enhanced Phone Microscope System and Deconvolution Model to Improve Blood Microscopy Diagnosis in Under-Resourced Areas
C11	Mihir Nimkar & Ronav Gopal	The Effect of an Ultrasound-Activated Electrospun Piezoelectric Hydrogel Scaffold on Post-Traumatic Brain Injury Motor Function in Drosophila melanogaster
C12	RJ Nosegbe	Effect of Oxidative Stress on Surface Degradation and Hydroxyapatite Coating Stability of 3D Printed PLA Bone Scaffolds
C13	Akhil Yalamanchili	CRYSTALCARE: Discovering Optimized Nanocrystal Framework Drug Delivery Systems For Universal Delivery Applications

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Animal Sciences (ANIM)

A01	Carly Adams	Evaluating the Impact of Chronic Juvenile Caffeine Exposure on Learning and Memory using RT-qPCR analysis of CREB1 and MAO Gene Expression in <i>Lymnaea stagnalis</i>
A02	Heela Afzal	Circadian Phase-Dependent Effects of Zeitgeber Time Disruption on Functional Mobility in <i>Drosophila melanogaster</i>
A03	Emma Clark	Reef Relief: The Effects of UV, Chemical, and Thermal Stressors on the Ability of the Antioxidant Mannitol to Mitigate Bleaching in the Sea Anemone <i>Exaiptasia pallida</i>
A04	Eve Clarke	The Comparative Effects of Ethyl Pyruvate on <i>Drosophila melanogaster</i> CO ₂ Levels
A05	Jayden Guy & Avnitha Ananthapur-Guggilla	The Effects of Microplastics Exposure from Nylon Tea Bags on the Regenerative Abilities of <i>Dugesia tigrina</i>
A06	Abhi Gyanwali	Does Low Sound Frequency Om Affect Stress Levels in <i>Daphnia magna</i>
A09	Juliana Harrington	Determining the Impact of Rising Water Temperatures on the Fecundity and Expression of the Caudodorsal Cell Hormone (CDCH-1) in <i>Lymnaea stagnalis</i>
A10	Sai Ibrahim	The Persistence of Conditioned Addiction Behaviors in Planarians After a Regeneration Period
A11	Asha Lam & Jasmine Abrantes	Investigating the Transgenerational Effects of Methyl 4-hydroxybenzoate exposure on the Water Flea, <i>Daphnia magna</i>
A12	Akshera Mukkamala	The Effects of Lavender Oil on Hyperactivity, Inattention, and Sleep Quality in <i>Drosophila melanogaster</i> models of ADHD
A13	Nathan Nocon	Snail Detox: Investigating how Green Tea affects the Reproductive Ability and Expression of the CDCH-I Reproductive Gene in Great Pond Snails exposed to either Zinc or Copper
A14	Alexandra Takach	The Effect of Proteasome Inhibitors on the HSF1 Stress Response of the Sea Anemone <i>Nematostella vectensis</i> when Introduced to Heat Shock
A15	Anna Welti & Alice Yudayeva	Determining the Impact of Freshwater Acidification on Long-Term Memory Retention in the Great Pond Snail, <i>Lymnaea stagnalis</i>

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Biochemistry (BCHM)

F01	Serene Abbadi	Investigating the Protective Effects of CAHS-Inspired Desiccation Methods on Enzyme Stability
F02	Preston Applegate	Finding a Binding Agent to Neutralize the Echicetin Protein in <i>Echis carinatus</i> Venom Using Molecular Docking

F03	Aarav Chhappgar	Using BL21 (DE ₃) Escherichia coli Transformed with IsPETase, Hot-PETase, and FAST-PETase to Determine the Effect of Coexpression with N-terminal Leaderless DsbC on Expression Levels for the Degradation of Plastic Polymers
F04	Ayana Chowdhury	The Effects of a PFOB and Ringer's Solution Emulsion as an Artificial Blood Substitute in Lumbricus terrestris via Coelomic Injection
F05	Charlotte Gesell	Optimizing PHA Accumulation in Cupriavidus necator Using Enzyme-Assisted Extraction as a Solvent-Reduced Alternative
F06	Ashlyn Jungerman	The Effect of CHST8 Sulfotransferase Gene Expression on the Glycan Binding Affinity of IgG Fc Receptors to Effector Cells in Model Autoimmune Response
F07	Shree Nithya Mandadi	Inhibition of the Epithelial-Mesenchymal Transition of Human Prostate Cancer Cells using Ibuprofen
F08	Norah McCormick	Ipomone as a Senolytic in C2C12 Cells
F09	Varshita Miryala	Dose-Dependent Effects of Curcumin on Heat Shock Protein Function and Heat Stress Resistance on Caenorhabditis elegans
F10	Ananya Nadooli & Sri Hasini Naicker	Investigating the Effect of Different Quantum Dot Frequencies with Luciferin on Luciferase-Expressing Breast Cancer Cells
F11	Brian Rivera Cardoza	The Effects of The Aspirin-Cyclodextrin Complex On The Pharmacodynamics In The Protein Expression of COX-2 In The Cell Line A549

Chemistry (CHEM)

F12	Aditi Chalasani & Susmita Das	Creating Heterogeneous Enzyme-Metal Hybrid Catalysts (EMHCs) Using Candida Antarctica Lipase B (CALB) Enzymes and Ruthenium Nanoparticles to Improve the Synthesis of Enantiopure Chiral Amines
F13	Rylan Harris & Eshan Nayak	The Economic Viability of Selective Hydrodeoxygenation of Vanillin Using Various Palladium-based Catalysts
F14	Rosie Stubert	Targeting Lycorma delicatula Ootheca Using Candida rugosa and Goat Lipase Enzymes in Leesburg, Virginia
F15	Caleb Vasak	Determining the Effect of Dynamic Covalent Bonds on the Tensile Strength of Hardened Epoxy Resin
F16	Sydney Yerra & Saanvi Korem	Determining the Optimal Ratio of Fe ²⁺ :Fe ³⁺ For a Magnetically Responsive and Electroactive Hydrogel With ROS Scavenging Capabilities

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R O O M

1404

Translational Medical Science (TMED)

To1	Ishan Alla & Ryan Chung	Comparison of the effects of lithium carbonate, lithium citrate, and lithium orotate on memory in a Drosophila melanogaster model of Alzheimer's disease
To2	Soliyana Ashenafi	Investigating the Effects of Chinese Traditional Medicine (Xiao Yao San) on Generalized Anxiety Disorder in Drosophila melanogaster Through Wall-Following Assay and Gut Permeability
To3	Ryan Gallagher	The Effects of Low-Intensity Exercise on Drosophila melanogaster Induced with Cardiac Hypertrophy
To4	Brendan Heflin	Prescribing Pesto: Preventing Degenerative Motor Function in Parkinson's Patients with Basil

To5	Abhinav Karthikeyan	Evaluating the Effects of Nicotinamide Mononucleotide on the Memory Capabilities of Amnesiac <i>Drosophila melanogaster</i> .
To6	Yusuf Ozkan	Investigating the Effect of Ashwagandha on the Heat Shock Response of <i>Drosophila melanogaster</i>
To7	Sonali Sarma	Determining the Efficacy of A-803467 on Reducing the Sodium Quantity in F11 Cells Modeling Peripheral Neuropathy
To8	Pranav Swaminathan	Investigating if Resveratrol Can Reduce Seizure-like Activity in Shaker Mutant <i>Drosophila</i> by Reducing Oxidative Stress

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R O O M

1419

Environmental Engineering (ENEV)

Lo1	Sandra Gad	Mechanizing Automatic Spray Pollination in Vertical Farming Systems
Lo2	Zayan Hasan	A Graph Based Physics-Informed Neural Network for Real-Time Air Pollution Forecasting
Lo3	Dani Jensen	The Effect of Different Sodium Hydroxide Concentrations on Carbon Dioxide Absorption in a System with <i>Chlorella vulgaris</i> Encapsulated in Calcium Alginate Beads
Lo4	Darshini Kumar	Synthesizing an Enhanced <i>P. ostreatus</i> Biosorbent Utilizing Zinc Oxide Nanoparticles for Sustainable Wastewater Dye Degradation
Lo5	Connor Lee	Determining the Effective Temperature Range That <i>Pestalotiopsis Microspora</i> is Able to Degrade PET and Polyurethane For Bioremediation Purposes
Lo6	Ashka Makati	Evaluating the Impact Of Microplastic Ingestion and Hydrogel Treatment On the Growth and Regeneration In Blackworms (<i>Lumbriculus variegatus</i>)
Lo7	Matthew McKeon	Semi-Dynamic Leaching Assessment of Polyurethane Coatings on End-of-Life Tires for Sustainable Engineering Applications
Lo8	Arianna Melendez Morales	Eco-friendly Hydrogels: Comparing <i>Ailanthus altissima</i> Biochar Amounts for Copper Adsorption in Water
Lo9	Julia Miller	Cleaning our water: Filtering aqueous pet microplastics using hematite-based electrospun fibers
L10	Jiho Oh	Evaluating The Effects of Magnesium-Enriched Coral Plugs on Growth of Green Star Polyp and Hollywood Stunner Chalice
L11	Taha Rawjani & Matthew Li	Real-time Detection & Response system for <i>Oidium neolycopersici</i> and similar diseases using Electrochemical and VOC-based sensing.
L12	Darsh Shetty	Design and Implementation of a Residential Air Pollution Detector
L13	Debbie Varghese	Designing Urban Infrastructure that Combats Air and Sound Pollution using <i>Chlorella vulgaris</i> and Owl Biomimicry
L14	Mehul Varshney	Improving Plant Disease Detection with Multi-Modal Machine Learning, Combining Image and Numerical Data
L15	Ajay Vinjamuri	Tessera: A Scalable Digital Twin for Climate-Resilient Cities

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Earth and Environmental Sciences (EAEV)

H01	Caley Barone	Determining the Relationship Between Ingested Microplastic Particles in <i>Artemia salina</i> (Brine Shrimp) to Microplastic Concentration, Microplastic Exposure Duration, and the Point in Lifecycle when Exposed to Microplastics.
H02	Nikhil Chitturi	Predicting rapid intensification of tropical cyclones 1-2 days in advance in the Intra-Americas Sea using standard signals, diurnal warming, and loop current context
H03	Jocelyn Chung	Fashion to Fuel: Evaluating Different Cotton Blends as Viable Feedstocks in Bioethanol Production
H05	Tanvi Khanna & Nikith Kambam	Determining the Effect of Erythromycin and Ampicillin on <i>Chlorella pyrenoidosa</i> , and the Macroinvertebrate <i>Daphnia magna</i>
H06	Peter Koo & Chase Klein	Virtual Screening to Identify Allelochemicals that Inhibit Cyanobacterial Tubular Pili
H07	Hashim Mujtaba Mujtaba & Alexander Vasquez Tapia	Distribution and Habitat Associations of Asian Jumping Worms (<i>Amyntas agrestis</i>): A Soil-Sampling Survey
H08	Jillian Paglinawan & Lucy Guilfoyle	Microplastic Fragmentation by <i>Eisenia fetida</i> and Its Effect on Nitrite Content in Worm Castings
H09	Dharini Rachamalla	The Early Developmental Effects of <i>Daphnia magna</i> Fed Algae Grown in the Presence of Microplastics
H10	Ekya Tesfalem	Developing a Coating Created With Barium Sulfate and Titanium Dioxide to Create a Cool Coat Solution For Concrete Buildings
H11	Saahil Thakur & Suraj Togaru	Effects of pH and PET Microplastics on Growth of <i>Scenedesmus quadricauda</i>
H12	Kavin Wesley	Enhancing Debris Flow Warning with Deep Machine Learning
H13	Arwyn Wetzel	The Impact of an Alternative Cloud Seeding Chemical, Aluminum Oxide, on the Growth of and Health of Photosystem 2 in a <i>Brassica Rapa</i> Model

Index by Category

Animal Sciences (ANIM).....	Room 1402
Behavioral and Social Sciences (BEHA)	Auditorium 1
Biochemistry (BCHM)	Room 1403
Biomedical Engineering (ENBM).....	Room 1401
Biomedical and Health Sciences (BMED).....	Auditorium 2
Cellular and Molecular Biology (CELL).....	Auditorium 3
Chemistry (CHEM)	Room 1403
Computational Biology and Bioinformatics (CBIO).....	Room 1307
Earth and Environmental Sciences (EAEV)	Room 1421
Embedded Systems (EBED)	Room 1202
Energy: Sustainable Materials and Design (EGSD)	Room 304
Engineering Technology: Statics and Dynamics (ETSD)	Room 1316
Environmental Engineering (ENEV)	Room 1419
Materials Science (MATS)	Room 303
Mathematics (MATH)	Room 1314
Microbiology (MCRO)	Room 1303
Physics and Astronomy (PHYS).....	Room 1314
Plant Sciences (PLNT).....	Room 1311
Robotics and Intelligent Machines (ROBO)	Room 1202
Software Design (SFTD).....	Room 1203
Technology Enhances the Arts (TEHA).....	Room 1203
Translational Medical Science (TMED)	Room 1404