Research EXPO 2025 Program

8:00AM-5:30PM

EESAT Atrium

1704 W. Mulberry, Denton, TX 76201

Welcome to the BioDiscovery and Advanced Environmental Research Institute EXPO 2025

The **BioDiscovery Institute (BDI)** and **Advanced Environmental Research Institute (AERI)** are proud to host a joint Research EXPO 2025 on Wednesday, **May 14, 2025**. This all-day event will take place in the **Atrium of the ESAT Building** and will celebrate the groundbreaking work of our researchers through **poster presentations, short talks. While offering many collaborative networking opportunities**. So, get ready to immerse yourself in the captivating world of scientific exploration.

The Research Expo will feature an enlightening industry panel discussion, providing insights into the challenges and opportunities to transition from academia to a career. Our keynote speech by Dr. Richard A. Dixon, will shed light on pressing issues of our time-climate change and availability of resources. This talk will provide a broad overview of some areas where progress is being made, quite rapidly from the perspective of basic understanding but more slowly as regards translation. Please join us for poster presentations and short talks from all BDI and AERI researchers.

We are also excited to offer a **Career Development Workshop** on **Tuesday, May 13th, 2025, from 9:00 AM to 1:00 PM**, sponsored by COS Career Coaches. This workshop will provide valuable insights into professional development covering:

Resume and CV building, Personal branding strategies, and Interviewing skills.

Thank you for joining being a part of this vibrant and inspiring gathering that celebrates the spirit of exploration and the pursuit of knowledge. Thank you for joining us at the BDI & AERI Research Expo and being a part of a journey that ignites curiosity, fosters an inclusive and equitable scientific community, and honors the brilliance of UNT science.

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Tuesday, May 13th, 2025
9AM-1PM
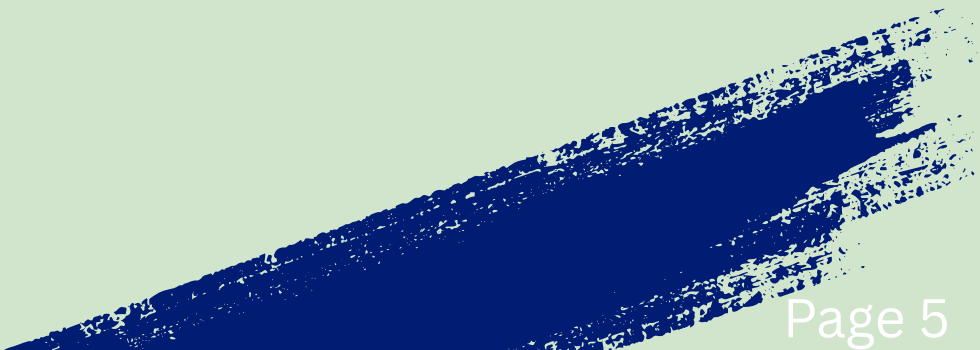
Career Development Workshop

Poster Setup	8:00 a.m. - 9:00 a.m.
Resume/CV Building	9:00 a.m. - 10:00 a.m.
Individual Branding	10:00 a.m. - 11:00 a.m.
Interview Skills	11:00 a.m. - 12:00 p.m.
Lunch and Career Coaches Q & A	12:00 p.m. - 1:30 p.m.

Career Coaches

Kate Summerhill is currently serving the College of Science as a Career Coach. She is a First Generation, University of North Texas Alumni who completed her Bachelor of Arts in Biology with Honors in the Spring of 2022. Kate has a strong desire to guide students in their professional and personal development. She excels in encouraging and motivating students to accept and love who they are due to her strong belief that success comes from being confident. Kate's mission is to be a resource to young professionals of UNT. due to her background of being a young professional herself. She aims to help them see that they are extraordinary just as they are by helping them eliminate comparison and overcome other mental barriers.

"Being a young professional is hard, especially if they are First Generation because you are essentially traveling into a deep dark unknown. I want to shed some light, and bring some guidance to those students and help them become their best selves.

Current students and recent graduates (graduated one year ago or more recently) can schedule an online or in-person appointment through Navigate. Experienced Alumni (graduated more than one year ago) can check out the options available to connect with a Career Coach on the Alumni page.

Nancy Sierra serves as a Career Coach for the College of Science
Nancy earned her M.Ed. in Higher Education Administration from North Carolina State University and her B.A. in Communications with minors in English and American Ethnic Studies from Hope College in Holland, Michigan. She comes to UNT with experience in residential life, career services, and college access programs. Her experiences as a first-generation Latina have been instrumental in her commitment to helping students succeed and thrive throughout their educational journey and beyond.
When she is not at UNT, Nancy enjoys hiking and photography.

Saydee Carrasco is a current student of Masters of Marriage and Family Therapy at Capella University. She earned her Bachelor of Arts in Psychology through Brandman University.

Prior to her career coaching position here at UNT, she was a high school teacher in Mason City, Iowa. Saydee taught an elective course called Iowa Job's for America's Graduates (NAG) where she was able to prepare high school students for life after graduation. This position with WAG she taught students career skills, soft skills, financial management, resume writing, interviewing skills, and counseled students using trauma informed care. Saydee worked as a social worker with the County of San Bernardina for over seven years, which included career counseling clients who were working with the welfare-to-work program and assessing clients with disabilities.

Saydee is passionate about helping those around her become the best versions of themselves. She thrives on curiosity and learning new things. When she is not working, she enjoys spending time with her family, their dachshund Waylon, and going on adventures with her teenager daughter. Saydee is excited for the opportunity to work with students and helping them find their passion and purpose in life beyond college!

Research EXPO
Wednesday, May 14th, 2025
9AM-5:30PM

Research EXPO 2025

PROGRAM SCHEDULE

Breakfast/Poster Preview	8:00 a.m. - 9:00 a.m.
Welcome Address	9:00 a.m. - 9:15 a.m.
BDI and AERI Member Research Talks	9:15 a.m. - 10:45 a.m.
Break	10:45 a.m. - 11:00 a.m.
Poster Sessions	11:00 a.m. - 12:30 p.m.
Lunch	12:30 p.m. - 1:15 p.m.
Career Panel Discussions	1:15 p.m. - 2:30 p.m.
Break	2:30 p.m. - 3:00 p.m.
Keynote Lecture	3:00 p.m. - 3:45 p.m.
Closing Comments/Awards	3:45 p.m. - 4:30 p.m.
Mixer	4:30 p.m. - 5:30 p.m.

Keynote Speaker:
Dr. Richard Dixon
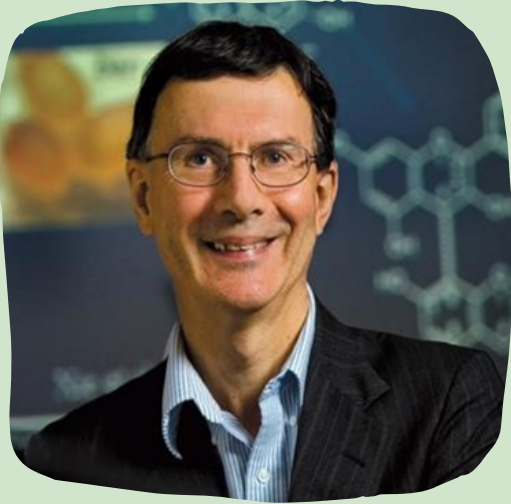
Next generation sustainability- solutions from biotechnology

In principle, biotechnology can contribute solutions to the most pressing issues of our time- climate change and availability of resources. This talk will provide a broad overview of some areas where progress is being made, quite rapidly from the perspective of basic understanding but more slowly as regards translation. Plants draw carbon from the air, and a number of projects are targeting carbon sequestration in below ground organs to help reduce atmospheric CO2. Plant roots are also essential for nutrient uptake, and root architecture and biochemistry are targets for engineering more sustainable use of major nutrients such as nitrogen and phosphate, as well as water. Improving digestibility of forages and crops for ruminant animals can significantly reduce methane emissions. The rush to develop first generation biofuels such as ethanol from corn has developed into a more realistic vision of bio-based sustainable aviation fuels. The longer-term issue of dwindling fossil fuel resources is being met by the development of processes for valorizing plant biomass to yield not only fuels but also materials and chemical precursors for industrial processes. All these developments also require that plants be more adapted to resist abiotic and biotic stresses. There is no one-size-fits-all solution, but advances in biotechnology, coupled with adoption of more ecologically sustainable agricultural practices, can make a difference. It is essential that we maintain a workforce of skilled individuals dedicated to making this difference.

Academia Panelists

Dr. Aaron Roberts was appointed as associate vice president of Research and Innovation on July 1, 2021. Prior to his appointment, he was a professor of environmental toxicology in the College of Science (COS) and spent the last two years as the director of the Advanced Environmental Research Institute (AERI). He is considered an expert on the fate and effects of chemical contaminants in freshwater and marine ecosystems. His research group has been funded by federal and state agencies as well as the private sector. Most recently, he secured a $300,000 award from Texas General Land Office (GLO) for toxicological studies that will inform oil spill response in the state. As associate vice president, his portfolio will include overseeing the management of UNT's shared instrumentation facilities across campus, working with advisory groups and directors of each facility, and assisting with the development, approval and implementation of partnership agreements with other universities, national labs and industry. Additionally, Roberts will be heavily involved in research development training and limited submissions, among other duties.

Dr. Joan W. Bennett received her PhD from the University of Chicago and then spent over thirty years on the faculty of Tulane University in New Orleans, Louisiana. Since 2006 she has been a Distinguished Professor at Rutgers University, New Brunswick, New Jersey, in the Department of Biochemistry & Microbiology, where she also served as an Associate Vice President for Women in Science, Engineering and Mathematics. Her research has focused on the toxicology of filamentous fungi. She also has a strong interest in bioethics and the history of microbiology. She is past vice president of the British Mycological Society and the International Union of Microbiological Sciences, as well as past-president of the American Society for Microbiology and the Society of Industrial Microbiology and Biotechnology. In 2005, Prof. Bennett was elected to the National Academy of Sciences, and in 2021, to the American Academy of Arts and Sciences.

Dr. Rebecca Cunningham's research is focused on the neurobiology of steroid hormones, neuropeptides, and oxidative stress mediated mechanisms in order to examine sex differences in neurodegenerative diseases (e.g., Alzheimer's disease). Her laboratory is one of the first laboratories to examine how oxidative stress alters the functiona outcomes of steroid hormones, such as androgens and estrogens. She found that androgens have both neuroprotective qualities and neurotoxic properties. Androgens can decrease oxidative stress if present prior to a stress. In contrast, once oxidative stress reaches a threshold, androgens can exacerbate oxidative stress generation and neurona vulnerability (e.g., inflammation, memory impairments, and motor dysfunction). Her laboratory was the first to discover the presence of a neuronal androgen receptor splice variant (AR45) complexed to NADPH oxidase (NOX), which is localized to lipid rafts in the plasma membrane and mediates androgen induced oxidative stress signaling pathways in the central nervous system. Her overall research goal has been centered on identification and knowledge of pathways modulated by sex chromosome or steroid hormones that can lead to improved health outcomes by providing a foundation for targeted therapeutic strategies and interventions.

Industry Panelists
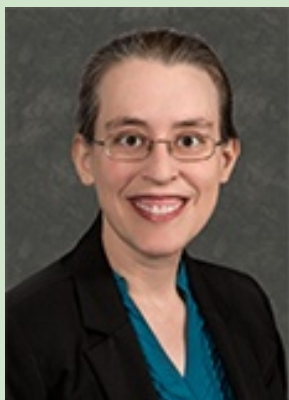
Dr. Allana Welsh is a molecular microbial ecologist with expertise in the diversity and functioning of bacterial communities in soil, particularly those involved in nitrogen cycling. As our lead microbiologist, she leads the use of both traditional and molecular techniques to characterize current and new biorational products, and co-leads development of new technologies aimed at manipulating microbial consortia to benefit plant health and nutrition.

Prior to joining Agricen Sciences, Dr. Welsh was a postdoctoral researcher at the University of Illinois, embedded within a USDA-ARS working group developing methods to explore the diversity and functioning of nitrogen cycling bacteria in agricultural soils. Before working as a researcher in Illinois, Dr. Welsh was a postdoctoral researcher at the Swedish University for Agricultural Sciences in Uppsala, Sweden. She developed and tested specific hypotheses related to microbial diversity and functioning using denitrifying bacteria as the model system.

Dr. Welsh has more than 20 academic publications in journals such as Applied and Environmental Microbiology, Systematic and Applied Microbiology, and Microbial Ecology.

Dr. Welsh graduated from Texas State University with a BS in microbiology, MS in biology and PhD in aquatic resources, with emphasis on symbiotic and free-living rhizosphere nitrogen-fixing bacteria.

Dr. Brenda Owens is a cotton breeder with BASF in the Southeastern United States, where she finds it exciting to work in a diverse team of people using genomic and remote sensing data, combined with modeling and field evaluations to bring improved varieties to farmers.

Dr. Owens completed B.S. degree in Agronomy at Texas Tech University. This was followed by a Fulbright Fellowship at the ETH in Zurich where she was a member of the group that worked on the Swiss FACE project. Dr. Owens then completed an M.S. degree at Texas Tech University studying the effect of fatty acids in cotton seedlings on cold tolerance. She completed a Ph.D. at Purdue University in Plant Breeding and Genetics where she did QTL mapping and genome-wide association mapping of carotenoids in maize. During this program, Dr. Owens obtained a Borlaug Fellowship and studied for a year in Colombia on the CIAT campus.

Dr. Owens' hobbies include making sourdough bread and travel.

Dr. Thomas D. Kiselak is a registered patent attorney with nearly five years of experience in the managing intellectual property related to chemistry and biochemical engineering. His expertise encompasses a wide range of areas including small-molecule pharmaceuticals, instrumentation, gene editing, peptide-tagged nanoparticles, drug delivery systems, and machine-learning software.

An accomplished chemist, Thomas earned his Ph.D. in Analytical Chemistry from the University of North Texas, where he conducted significant research on opioid analogs and transdermal drug delivery systems. His academic journey began with a B.S. in Neuroscience and a minor in Biochemistry from the University of Scranton, followed by his legal education at the University of New Hampshire Franklin Pierce School of Law, where he earned his J.D.

In his current role as Associate IP Counsel at Thermo Fisher Scientific, he manages global patent portfolios and strategically collaborates with R&D teams to align IP strategy with business goals. Prior to this, he was a Patent Attorney at Patterson+Sheridan, where he handled patent applications for a variety of industries, including mass spectrometry and biotech. His early career as a Patent Agent saw him prepare patents and support IP strategies for innovative biotech firms.

Beyond his expertise in patent law, Thomas has authored and presented several research articles and posters at notable conferences, contributing to the fields of forensic science and analytical chemistry. He is also active in professional organizations, including the American Chemistry Society, American Society for Mass Spectrometry, and even the American Society for Biochemistry and Molecular Biology where he serves as a committee member for the Education and Professional Development committee.

Through his unique blend of scientific and legal expertise, Dr. Kiselak remains dedicated to providing innovative solutions for intellectual property challenges in the rapidly evolving fields of chemistry and biotechnology.

Governmental Panelists

Rachel Richter is an Urban Wildlife Biologist for Texas Parks and Wildlife in DFW. She has a bachelor's degree in Wildlife and Fisheries Science from Texas A&M and a master's degree in Wildlife Ecology from Texas State. As an Urban Wildlife Biologist, she focuses on making our communities more wildlife-friendly through educational outreach and providing technical guidance.

Melissa Smith has been with EPA Region 6 for 28 years, joining EPA in 1996 as a graduate from the University of North Texas with a B.S. in Biology and a minor in Chemistry. She is currently serving as the Acting Deputy Director of the Mission Support Division which includes the Comptroller Branch, Information Technology and Operations Management Branch, Grants and Acquisitions Branch, and the Human Resources Branch. In her permanent position, she is a Branch Manager in the Land, Chemicals, and Redevelopment Division managing the RCRA Corrective Action, Underground Storage Tanks, Solid Waste, and Permits Branch. Melissa spent the first 16 years of her EPA career in the Enforcement Division conducting hazardous waste inspections, enforcement, and corrective action, and served as the Special Assistant to the Associate Director of the Hazardous Waste Enforcement Branch.

Talk Titles and Rooms

Room 110

Time	Title	Presenter
9:15AM	Feeding the yeast: insights into *Histoplasma capsulatum's* metabolism through 13C-metabolic flux analysis	Adrian Heckart
9:30AM	Nanoparticle screening in high-throughput hydrogel synthesis system with tunable stiffness	Afia Ibnat Kohon
9:45AM	Distance based alignment-free approach for prion discovery	Ambarish Kumar
10:00AM	The high affinity nitrate transporter NRT2.1 and its partner NAR2.1 from *M. truncatula* form a complex in *N. benthamiana* leaves	Antonella Longo
10:15AM	DYGSSM: multi-view dynamic graph embeddings with state space model gradient update	Bizhan Alipour Pijani

Room 115

Time	Title	Presenter
9:15AM	Exploring stomatal density and lignin content in *Physaria fendleri* for enhanced hydroxy fatty acid production	Brady Erlandsen
9:30AM	Characterizing biochemical pathways for producing cyclic fatty acids in cotton	Brandon Deeb
9:45AM	The use of Apple Airtags to track Harris's hawks	Brooke Poplin
10:00AM	Image recognition model for crustacean postlarvae counting and size estimation	Fabio Dos Santos Neto
10:15AM	Potential interdisciplinary research on birds	James Bednarz

Talk Titles and Rooms

Room 120

Time	Title	Presenter
9:15AM	Clustering SCRNA-seq data using graph debiased contrastive learning and self supervised clustering technique	Jubair Ibn Malik Rifat
9:30AM	Myocardial infarction, P38 inhibition, and its implications for behavior in the zebrafish larvae model	Karem Nathalie Vazquez Roman
9:45AM	Multifunctional hydrogels for precise cell microenvironments in 96-well plates	Katelyn Mathis
10:00AM	Unraveling the genetic networks of phloem-cap fiber development in cotton to improve crop value and sustainability	Matthew Feragne
10:15AM	Targeting susceptibility genes, NPR3 and NPR4 to mitigate fusarium head blight disease	Md Ashraful Islam

Room 125

Time	Title	Presenter
9:15AM	CAAT-EHR: cross attentional autoregressive transformer for multimodel electronic health record embeddings	Mohammad Al Olaimat
9:30AM	TOP-DTI: integrating topological deep learning and large languarge models for drug target interaction prediction	Muhammed Talo
9:45AM	Mitigating bias in clinical diagnosis of alzheimers disease: pre-processing methods for fairness in graoh neural networks: using habs-HD data	Neha Goud Baddam
10:00AM	Unraveling the molecular basis of cotton bast fiber formation: integrating morphological, transcriptomic, and metabolomic insights for sustainable fiber development	Reena Sharma
10:15AM	Introducing the 'mean green tree team': how student-led data collection and outreach efforts can improve tree preservation at the University of North Texas and beyond	Savannah Thomas
10:30AM	Effects of flow cessation on terrestrial-aquatic linkages in drought prone watersheds	Sophia Davis

Talk Titles and Rooms

Room 130

Time	Title	Presenter
9:15AM	Discovery of a novel carbonic anhydrase in *Methylococcus capsulatus*	Spencer Lee
9:30AM	Graph neural network-based drug repurposing for Alzheimer's disease and related dementias	Suman Pandey
9:45AM	Structral elucidation and natural product biosynthesis in the potential biocontrol agent *Sarocladium zeae*	Sydney Schoellhorn
10:00AM	ESM-AMR: leveraging protein alnguarge models for structural prediction and functional classification of antiobiotic resistance genes	Tallon Coxe
10:15AM	Inhalation exposure to traffic-generated air pollution results in renin-angiotensin system dysregulation and increased factors associated with Alzheimer's disease in APOE -/- mice	Tyler Armstrong
10:30AM	Stage and cell-type specific TE activation during zebrafish embryogenesis	Xiaolu Wei

Notes

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Posters

| | Undergrad Student | Graduate Student | Post-Doc | Faculty |

Poster Num.	Presenter	Title
1	Abdul Rawoof	TOWARDS SUSTAINABLE PRODUCTION OF FUNGAL METABOLITES IN *NICOTIANA BENTHAMIANA*
2	Afia Ibnat Kohon	NANOPARTICLE SCREENING IN HIGH-THROUGHPUT HYDROGEL SYNTHESIS SYSTEM WITH TUNABLE STIFFNESS
3	Ahmad Bereimipour	ANALYSIS OF THE UDP-GLYCOSYLTRANSFERASE GENE FAMILY OF *MEDICAGO TRUNCATULA*
4	Amira Rasoul:	13C METABOLIC FLUX ANALYSIS UNCOVERS MAJOR CARBON ALLOCATION SHIFTS IN PENNYCRESS FATTY ACID ELONGATIONI EMBRYOS
5	Antonella Longo	THE HIGH AFFINITY NITRATE TRANSPORTER NRT2.1 AND ITS PARTNER NAR2.1 FROM *M. TRUNCATULA* FORM A COMPLEX IN *N. BENTHAMIANA* LEAVES.
6	Antonella Longo	EXPLORING THE ROLE OF THE N- TERMINAL REGION IN THE *MEDICAGO TRUNCATULA* IRON TRANSPORTERS VITIA AND VTL8.
7	Arya Mohanan	TRACING CHANGE: METAL CONTAMINATION, NUTRIENT DYNAMICS, AND RESTORATION IN THE UPPER CLARK FORK RIVER, MONTANA
8	Bizhan Alipour Pijani	DYGSSM: MULTI-VIEW DYNAMIC GRAPH EMBEDDINGS WITH STATE SPACE MODEL GRADIENT UPDATE
9	Brandon Deeb	CHARACTERIZING BIOCHEMICAL PATHWAYS FOR PRODUCING CYCLIC FATTY ACIDS IN COTTON.
10	Brooke Poplin	HARRIS'S HAWK SOCIAL BEHAVIOR IS INFLUENCED BY URBANIZATION IN SOUTHERN TEXAS
11	Cagri Ozdemir	A DYNAMIC MODEL FOR EARLY PREDICTION OF ALZHEIMER'S DISEASE BY LEVERAGING GRAPH CONVOLUTIONAL NETWORKS AND TENSOR ALGEBRA
12	Calvin Nering	CITY OF CORINTH COMMUNITY PARK PROJECT IN COLLABORATION WITH THE CITY OF CORINTH AND THE UNIVERSITY OF NORTH TEXAS

Posters

Poster Num.	Presenter	Title
13	Camrie Johnson	LIPID NANOPARTICLE PERMEABILITY IN HIGH-THROUGHPUT BIOMIMETIC LUNG ALVEOLAR SYSTEM
14	Axel Herrera	BIOCHEMICAL AND STRUCTURAL STUDIES OF TWO KEY ENZYMES INVOLVED IN OXALATE CATABOLISM PATHWAY IN *ARABIDOPSIS THALIANA*
15	Clarissa Molina	EVALUATING THE EFFECTS OF ORIGIN AND SUPER-STOCKING METHODS ON THE GENETICS OF EASTERN WILD TURKEY
16	Jordan King	INVESTIGATIONS OF REDOX-BASED POST-TRANSLATIONAL MODIFICATIONS ON *ARABIDOPSIS THALIANA* STEAROYL-ACP-DESATURASE
17	Daniel Grinffiel	SERINE-INTEGRASE MEDIATED GENETIC ENGINEERING ENABLES HIGH-EFFICIENCY GENETIC TRANSFORMATION IN *METHYLOCOCCUS CAPSULATUS*
18	Danielle Herubin	LIGHT DIRECTED DNA-MEDIATED MULTILAYER CELL PRINTING
19	Danyang Shao	RARENET: A DEEP LEARNING MODEL FOR RARE CANCER DIAGNOSIS USING ARBUSCULAR MYCORRHIZAL FUNGI (AMF) TO IMPROVE
20	Dylan Reinart	USING ARBUSCULAR MYCORRHIZAL FUNGI (AMF) TO IMPROVE ESTABLISHMENT OF PRAIRIE GRASSES IN URBAN RECONSTRUCTED PRAIRIE
21	Emily Herrell	STRUCTURAL AND FUNCTIONAL CHARACTERISTICS OF FATTY ACID AMIDE HYDRLOASE 2A IN THE LEGUME MODEL, *MEDICAGO TRUNCATULA*
22	Ethan Phillips	HOW IS NATIVE, CAVITY-NESTING BEE COLONIZATION DRIVEN BY RESOURCE AVAILABILITY & HABITAT COVERAGE WITHIN AN URBAN COLLEGE CAMPUS?
23	Fabio Dos Santos	IMAGE RECOGNITION MODEL FOR CRUSTACEAN POSTLARVAE COUNTING AND SIZE ESTIMATION
24	Guillermo Contreras Rello	ROLE OF TET ENZYMES IN THE EPIGENETIC REGULATION OF HIF-1a
25	Haley Huse	DEVELOPING LARVAL *DANIO RERIO* AS A MODEL FOR POLYCYCLIC AROMATIC HYDROCARBON TOXICITY TESTING

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26	Hunter Messick	A COMPARISON OF GRASSLAND MONITORING PROTOCOLS BETWEEN RANGELAND MANAGEMENT AND POLLINATION ECOLOGY DISCIPLINES
27	Imogen Brown	INVESTIGATING THE IMPACT OF MICROPLASTICS ON ELASMOBRANCHS DEVELOPMENT: A RESEARCH FRAMEWORK
28	Isha Mittal	CHARACTERIZING THE CONTRIBUTION OF PLANT 9-LIPOXYGENASE IN SUSCEPTIBILITY TO THE FUSARIUM HEAD BLIGHT FUNGUS, *FUSARIUM GRAMINEARUM*
29	Ishani Mahawaththa	HYDROLOGIC, METABOLIC, AND HUMAN EFFECTS ON STREAM DISSOLVED ORGANIC MATTER COMPOSITION IN A RAPIDLY URBANIZING ALPINE
30	Jack Eudy	INCREMENTAL Q10 OF HEART RATE DURING EARLY DEVELOPMENT IN ZEBRAFISH (Danio rerio)
31	James Junker	MACROECOLOGICAL PATTERNS OF BIODIVERSITY, ALLOMETRY, AND COMMUNITY BIOMASS IN STREAMS OF NEON
32	Jamie Kimbrell	LIPID REMODELING IN COTTON (*GOSSYPIUM HIRSUTUM* UNDER ABIOTIC STRESS: INSIGHTS FROM COLD STRESS METABOLOMICS AND TRANSCRIPTOMICS
33	Jesseca Hemminger	INVESTIGATING THE REGULATORY ROLE OF MIRNA-ENCODED PEPTIDES IN NUTRIENT DEFICIENCY RESPONSES IN ARABIDOPSIS
34	Jessenia Shiguango Holtz	EXTRACTING FIBER FROM COTTON STEMS USING ENZYME BACPELA THROUGH PLANT TRANSFORMATION
35	Jessica Rippamonti	CHRONIC DEVELOPMENTAL IN OVO HYPOXIC EXPOSURE ALTERS FEMORAL ARTERY AND VEIN CONTRACTILITY IN JUVENILE ALLIGATORS
36	Jose Robledo	IDENTIFYING METABOLIC PATHWAYS IMPORTANT FOR ANOXIA TOLERANCE IN/ INSULIN SIGNALING MUTANTS: A MULTI-OMICS STUDY IN *C. ELEGANS*
37	Jubair Ibn Malik Rifat	CLUSTERING SCRNA-SEQ DATA USING GRAPH DEBIASED CONTRASTIVE LEARNING AND SELF SUPERVISED CLUSTERING TECHNIQUE

Posters

Undergrad Student | Graduate Student | Post-Doc | Faculty

Poster Num.	Presenter	Title
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39	Katelyn Mathis	MULTIFUNCTIONAL HYDROGELS FOR PRECISE CELL MICROENVIRONMENTS IN 96-WELL PLATES
40	Katherine Burbules	RESPIRATORY RESPONSE TO OXYGEN AND TEMPERATURE CHANGE IN THE AIRBREATHING WEATHER LOACH (*MISGURNUS ANGUILLICAUDATUS*)
41	Kayla Nguyen-Alley	INVESTIGATING THE EFFECTS OF DIESEL EXHAUST PARTICLE INHALATION, PROBIOTIC SUPPLEMENTATION, AND GLP-1 AGONIST INJECTION ON THE GUT MICROBIOME PROFILE OF FEMALE C57/BL6 MICE.
42	Khalaya Jackson	METAMORPHOSIS AND HEAT WAVE EFFECTS IN *DRYOPHYTES CINEREUS*
43	Lani Archer	CHARACTERIZATION OF ACTIN DEPOLYMERIZING FACTOR, ADF3 IN THE ARABIOPSIS THALIANA DEFENCE RESPONSE TO GREEN PEACH APHID, *MYZUS PERSICAE*
44	Mani Dhakal	A DUAL-DISEASE MODEL FRAMEWORK: ANALYZING INFLUENZA AND COVID- 19 CO-INFECTION DYNAMICS
45	Marjorie Mendoza	DYNAMIC 13C-LABELING REVEALS NUTRIENT FLOW TO PENNYCRESS EMBRYOS
46	Matthew Feragne	UNRAVELING THE GENETIC NETWORKS OF PHLOEM-CAP FIBER DEVELOPMENT IN COTTON TO IMPROVE CROP VALUE AND SUSTAINABILITY
47	Mohammad Al Olaimat	CAAT-EHR: CROSS-ATTENTIONAL AUTOREGRESSIVE TRANSFORMER FOR MULTIMODAL ELECTRONIC HEALTH RECORD EMBEDDINGS
48	Mohammad Alatoum	MODULATION OF PLANT IMMUNITY THROUGH ABIETANE DITERPENOID ENGINEERING IN *ARABIDOPSIS THALIANA*

Posters

Poster Num.	Presenter	Title
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50	Neha Goud Baddam	MITIGRATING BIAS IN CLINICAL DIAGNOSIS OF ALZHEIMER'S DISEASE: PRE-PROCESSING METHPDS FOR FAIRNESS IN GRAPH NEURAL NETWORKS USING HABS-HD-DATA
51	Rocio Alcantar	TRACING THE FATE OF CARBON AND NITROGEN THROUGH DETRITAL FOOD WEBS
52	Salim Makni	INVESTIAGTING SILICLE CONTRIBUTIONS TO PENNYCRESS SEED BIOMASS AND OIL PRODUCTIONS
53	Shanmukh Salimath	*GOSSYPIUM HIRSUTUM* L. VAR COKER 312 GENETIC TRANSFORMATION SERVICES TO THE COTTON RESEARCH COMMUNITY
54	Shivani Dave	DEVELOPMENT AND VALIDATION OF A BASE EDITING SYSTEM IN *AEDES AEGYPTI* MOSQUITOES
55	Siyear D. Redd	HOW DOES TEMPERATURE AND O2 SATURATION AFFECT AERIAL RESPIRATION IN CORYDORAS AENEUS
56	Sujan Shrestha	CHALLENGES IN PREDICTING ZONAL TRENDS USING A MODEL PARAMETRIZED WITH NATIONAL-LEVEL COVID-19 DATA
57	Suman Pandey	GRAPH NEURAL NETWORK-BASED DRUG REPURPOSING FOR ALZHEIMER'S DISEASE AND RELATED DEMENTIAS
58	Swapna Bodampati	MODULATING THE PHENYLPROPANOID PATHWAY FOR ENHANCED SPCEICLIASED METABOLITE PRODUCTION IN PLANTS
59	Sydney Schoellhorn	STRUCTURAL ELUCIDATION AND ANTURAL PRODUCT BIOSYNTHESIS IN THE POTENIAL BIOCONTROL AGENT *SAROCLADIUM ZEAZ*

Posters

| Undergrad Student | Graduate Student | Post-Doc | Faculty |

Poster Num.	Presenter	Title
60	Tyler Armstrong	INHALATION EXPOSURE TO TRAFFICE-GENERATED AIR POLLUTION RESULTS IN RENIN-ANGIOTENSIN SYSTEM DYSREGULATION AND INCREASED FACTORS ASSOCIATED WITH ALZHEIMER'S DISEASE IN APOE -/- MICE
61	Victoria Youngblood	PROBIOTIC AND LIRAGLUTIDE TREATMENT IMPROVE METABOLIC OUTCOMES IN C57BL/6 WILD-TYPE MICR EXPOSED TO INHALED DIESEL EXHAUST PARTICULATES
62	Yusuf Ayobami Mustapha	INVESTIGATING THE ROLES OF WOX GENE OVEREXPRESSION IN *GOSSYPIUM HIRSUTUM* STEM SECONDARY GROWTH
63	Zachary VanSaders	INVESTIGATING PROTEINS INVOLVED IN PLANT LIPID METABOLISM

Notes

Special Thanks to the BDI & AERI Research EXPO Organizing Committee

Yashu Vashishath - Advisor (Chair)
Sanjeevan Rajendran (Chair)
Shelley Schaffer
Sam Cahill
Reena Sharma
Neha Goud Baddam
Sameera Jayasundara

Jordan King
Ishani Mahawaththa
Imogen Brown
Steven Williams
Jessica Rippamonti
Tara Principato

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