UNT COLLEGE OF SCIENCE Department of Biological Sciences

BIOsphere

September 2023 Volume 10 Issue 3

Awards and Recognitions


Dr. Richard Dixon


Dr. Lee Hughes

Dr. Richard Dixon was ranked 148 in the world in the fields of Biology and Biochemistry by Research.com. Read more on the ranking: https://research.com/scientists-rankings/biology-and-biochemistry?page=2

Dr. Lee Hughes is the recipient of the American Society of Microbiology's "2024 Carski Award for Undergraduate Education". This award recognizes an educator for outstanding microbiology teaching to undergraduate students and for encouraging them to subsequent achievement. It is given in memory of Theodore Carski (1903-2003).
Read more on the award: https://asm.org/Academy/ASM-Carski-Award


Martha Frantz and Luis Revilla Mata with Dean Dr. John Quintanilla

Martha Frantz, Sr. Research Analyst in the BioDiscovery Institute and **Luis Revilla Mata**, Student & Program Coordinator in the Department of Biological Sciences were recipients of the July and September 2023 respectively, the COS Excellence in Mastering Challenges Continuously (E=mc²) Staff Award. The E=MC² award was established by Dean Quintanilla to recognize outstanding efforts among full-time staff members within the College of Science and its departments.
More on Martha's award can be found at: https://cos.unt.edu/news/martha-frantz-receives-july-cos-emc%C2%B2-award and Luis's award can be found at: https://cos.unt.edu/news/luis-revilla-mata-receives-september-cos-emc2-award.

Faculty Promotions


Dr. Rajeev Azad


Dr. Edward Mager


Dr. Roisin McGarry

Congratulations to our faculty for their promotion, **Dr. Rajeev Azad** was promoted to the rank of Professor, **Dr. Edward Mager** was promoted to Associate Professor with Tenure, and **Dr. Roisin McGarry** was promoted to Research Associate Professor.

Dr. Rajeev Azad's research program spans the broad area of bioinformatics and computational biology and is focused on solving complex biological problems through integrative interdisciplinary approaches. Research in his laboratory is focused on development and application of mathematical and computational methods to understand how organisms, specifically microbes, innovate to adapt to changes in the environment, study of large omics datasets to determine how organisms respond to stress at the molecular and physiological levels, and development of novel approaches to decipher the structural and functional features in genomes and elucidate their relationships in the context of evolution. Dr. Azad's research group has also recently leveraged new developments in the field of machine learning or artificial intelligence to address a host of biological/biomedical problems, such as phenotype prediction based on omics data. The Azad laboratory provides a rigorous training ground for next-generation bioinformaticians, readying them to join a growing workforce of interdisciplinary researchers for addressing current and emerging problems in the fields of biology and medicine.

Dr. Edward Mager studies the ecotoxicology and ecophysiology of aquatic organisms to better understand the effects of anthropogenic and natural stressors, both alone and in combination. He teaches Biology for Majors II and Physiological Ecology. Current research projects include using novel real-time physiological assessments to optimize prawn aquaculture and determining the swimming performance of imperiled TX fishes to aid in construction of eco-friendly culverts. Dr. Mager looks forward to branching out into new areas of aquaculture research and continuing to form new collaborations at UNT and elsewhere to aid in research aimed at protecting our natural environment. More on Dr. Mager's research can be found at http://biology.unt.edu/~mager/ and https://scholar.google.com/citations?hl=en&user=DR5bKb4AAAAJ

Róisín McGarry has a BSc from the University of Lethbridge, Canada, MSc from the University of Alberta, Canada, and PhD from Cornell University. Her doctoral research was awarded a national scholarship from the Natural Sciences and Engineering Research Council of Canada. She conducted post-doctoral research at the University of North Texas, and was a visiting scholar at the Max Planck Institute of Molecular Plant Physiology, Germany, and the University of Georgia. McGarry's research in plant development focuses on understanding patterns of growth and how signals underlying those patterns can be leveraged to benefit crop productivity. Using non-model, woody perennials, her research aims to develop tools to elucidate and manipulate architecture regulation; investigate meristematic signals regulating patterns of indeterminate and determinate growth; and explore the genetic networks regulating meristem size and fate.

Department News

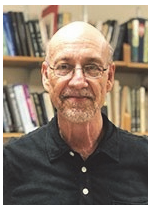

Dr. Jyoti Shah

Dr. Jyoti Shah was reappointed to a four-year term as Chair of the Department of Biological Sciences by Dean Dr. John Quintanilla.

Faculty Retirement


Dr. Sam Atkinson


Dr. Rebecca Dickstein


Dr. Daniel Kunz

The service and presence of recently retired faculty from the Department of Biological Sciences, **Dr. Sam Atkinson**, **Dr. Rebecca Dickstein** and **Dr. Daniel Kunz** will be missed by their colleagues and students. We wish them all the best. In their own words they have shared with us when they began their UNT career, how they want to be remembered, and plans after retirement.

Dr. Sam Atkinson

My faculty line started in August of 1986 (back when we were still NTSU!). There are two things for which I would like to be remembered: First, in 1991, I was the primary author of the proposal to the Texas Higher Education Coordinating Board for the creation of our Graduate Program in Environmental Science. That proposal was approved and the Environmental Science M.S. and Ph.D. programs began in 1992. We have graduated many hundreds of environmental science students that have taken important jobs in municipal, state, and federal agencies, as well as many private sector and not-for-profit jobs, and of course faculty positions in higher education. I truly believe that our efforts have had, and continue to manifest untold improvements to and protections of our planet.

Second, when I joined the faculty in 1986, research funding was not as all-important to the university as it is now, but it was always important to the scholars in the Institute of Applied Science (now the Advanced Environmental Research Institute). Subsequently, in my 37 years at UNT, I never had a year without external funding to pursue my research interests. I was the principle or co-principle investigator of numerous exceptionally talented teams that were funded 116 times by Federal, State, local and private sector interests totaling nearly $8.5 million, and resulted in hundreds and hundreds of publications, of which I was author or co-author on more than 130.

Dr. Rebecca Dickstein

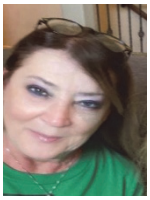
I got into this area (part of my DNA is nodulation, symbiotic nitrogen fixation in legumes and biochemistry) of research for environmental reasons - I thought and still think about the importance of growing food for people without destroying this beautiful planet we call earth. I would want to be remembered as playing a part in creating a knowledge base for sustainable agriculture. Equally important to me are the people I worked with, the ideas we exchanged and the knowledge we created and passed on, within our groups here at UNT and with other scientists in the world. The people include our students, not only the grad students and postdocs in our labs but also the undergraduates - those who became interested in science and those who used what they learned in labs and our classes to make the world a better place in many ways. There's a lot of good people at UNT doing significant work who I've learned from and am glad I had the opportunities to know in the ways I did. The students we train here go out into the world and do great things. I'm so grateful to have been able to contribute to a small part of their growth and development as scientists, doctors, pharmacists, allied health personnel and all the myriad occupations our student go into. For some, even academics. I am also grateful to many staff members who make it possible for me to do my job and keep me smiling. You interact with the students, keep our lab finances straight, keep us interacting with the many UNT computer systems that keep track of everything that we do, and generally keep us sane.

Early last Spring 2022 semester Lon and I realized I would have to retire to take care of myself. I retired in October 2022 and we moved to Philadelphia where I'm now on the University of Pennsylvania kidney transplant list. If you are willing to be consider being a living kidney donor, please contact me. Thanks to my husband Lon Turnbull for his constant support. Thanks to all of you for the journey and for your trust in me to do the right thing.

Dr. Daniel Kunz

I started working for UNT in the Fall of 1986. Prior to coming to UNT I was employed by the DuPont Company in Wilmington Delaware. The one thing that I would like to be remembered for is the breadth of knowledge I was able to bring to my students given my broad experience in industry and academia. I enjoyed my time as a mentor and working closely with students. I plan to spend much of my time on my second love which is music. I often reminded students of the fun and growth that can come from learning, and in this capacity, I continue to be a student of the guitar and mandolin. At the same time, science will never be too far from my heart and so I plan to apply my knowledge wherever I can. Aside from this, I enjoy applying mechanical skills (be they ever so rudimentary) to fixing things in and around the house, and in my free time, plan to do some traveling and spend time with the family.

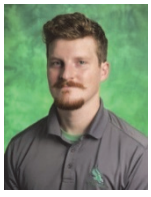
Staff Appointments


Deb Douglas


Heidi Spann

Deborah (Deb) Douglas has rejoined the Biological Sciences Department to her previous position as an Office Support Associate in the Chair's Office. She is happy to be back in Texas and at UNT. Deb has worked in the university setting for the State of Texas for over 10 years.

Heidi O. Spann has joined the Biological Sciences Department as a Student & Program Coordinator and Life Sciences Resource Center Coordinator. She is managing Biology's Life Science Resource Center, an academic support space for Life Sciences majors. Her background is in the field of Biomedical Science with experiences in student engagement, and undergraduate research in United States and abroad.


Jack Bolerjack

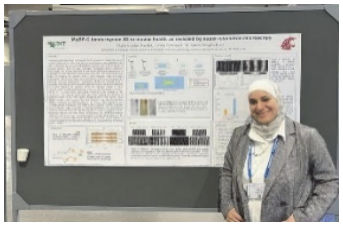

Sophie Enslein

Jack Bolerjack has joined the Biological Sciences Department as a Scientific Instrument Technician in the Biology Instrument Workshop.

Sophie Enslein has joined the Biological Sciences Department as an Inventory Specialist. She recently received her undergraduate degree in Biology with a minor in Chemistry from TWU in May of this year. Heidi previously worked for the Department of Housing and Dinning at TWU, taking on many different roles there while pursuing her undergraduate degree. She is very excited to work in the department of Biological Sciences and to be a part of the UNT Biology Stockroom Team.

Biology Research Spotlight

Dr. Duaa Quedan recently wrapped up her doctoral research in the laboratory of Dr. Douglas Root, where she worked to develop synthetic peptides designed to bind to molecules in cardiac muscles. Their hope is that the eventual applications of this research can be used to help treat certain heart disorders. Dr. Quedan realized she was interested in pursuing this research for its relevance in the dental field after receiving her DDS (Doctor of Dental Surgery) degree from the University of Jordan in 2009. More on Duaa's research can be found at: https://cos.unt.edu/news/phd-research-spotlight-dr-duaa-quedan



Dr. Duaa Quedan

Amaya Green

Biochemistry undergrad **Amaya Green** spent ten weeks this summer conducting research at The University of North Texas Health Science Center studying cancerous brain cells. She enjoyed presenting her findings at the end of her UNTHSC experience and is now looking forward to a new semester and new opportunities ahead. More on Amaya's summer research can be found at: https://cos.unt.edu/news/biochemistry-undergraduate-spotlight-amaya-green

Student and Staff News

Four UNT undergraduate interns **Nathaniel Almaguer, Karla Montanez, Kiwii Lawton, and Jonothon Cantu** worked to convert sections of a 19.5-acre median on Garden Ridge Blvd. in Lewisville into a Texas native wildflower and grass habitat. The project is part of the City of Lewisville's Parks and Recreation 'Extending the Green' initiative. Our UNT interns planted nursery grown plants, conducted assessments, created educational material, solarized one plot, and were invited to present their project to the City of Lewisville Parks Board.

Emma Land, recipient of the UNT Undergraduate Research Fellowship, conducted a plant assessment at LLELA to complement MS student Haley Daniels thesis project. The plant assessment will be used to understand resources available to Painted Buntings. Emma is mentored by Jaime Baxter-Slye and Zacchaeus Compson.

Texas native wildflower and grass habitat

Left to right: Nathaniel Almaguer, Karla Montanez, Kiwii Lawton, and Jonothon Cantu

The UNT Society for Ecological Restoration and the Pollinative Prairie Committee hosted a Welcome Back bioblitz and workday at the new Diamond Eagles Community Learning Area in early September. UNT Bird Campus also kicked off the semester with a workday at the Parking Lot Preserve.

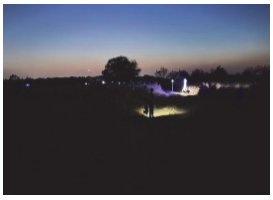
The UNT Society for Ecological Restoration hosted a blacklighting event at LLELA in September, featuring Sam Kieschnick from TPWD. The event will be used to create a documentary about the use of iNaturalist. A rare insect called 'Belfrage's Cricket' (*Trigonidomimus belfragei*) was observed. Students are going to attempt to study the cricket as the life-history is not known (we don't even know if there are males!)

Left to right: Haley Daniels, Emma Land, Sarah Paroski, and Janet Martinez

Pollinative Prairie workday at the Diamond Eagles Community Learning Area

Bird Campus Committee workday at the Parking Lot Preserve

'Belfrage's Cricket' observed at LLELA. Photo by Sam Kieschnick.



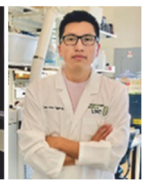
'Barn Owl Ridge at LLELA shining with blacklight set-ups

Thesis and Dissertation

Congratulations to our graduate students who successfully defended their thesis/dissertation.

Harmanpreet Kaur

Marcel Prokai



Omar Arias Gaguancela

Harmanpreet Kaur successfully defended her thesis titled "Investigating the molecular frameworks of phloem-cap fiber development in cotton (*Gossypium hisrsutum*)" on September 25th, 2023. Harmanpreet will be using her biochemistry and molecular biology expertise to start new adventures in Canada. She is actively applying for Research technician positions in the fields of Drug discovery and Pharmaceuticals within various companies. Her major advisor was Dr. Brian Ayre.

Marcel Prokai successfully defended his M.S. thesis titled, "Proteomic-based assessment of estrogenic endocrine disruption in *Hyalella Azteca*" on July 26th, 2023. His major advisor was Dr. Vladimir Shulaev. Marcel is continuing with his Ph.D. in the same lab this Fall.

Rachel Leads

Tessa Boucher

Omar Arias Gaguancela successfully defended his dissertation titled "Fatty Acid Amide Hydrolases in Upland Cotton (*Gossypium hirsutum L.*) and the Legume Model *Medicago truncatula*". He currently working as a Postdoctoral Research Associate at the Institute for Systems Biology in Seattle, WA. Omar's major advisor was Dr. Kent Chapman.

Rachel Leads successfully defended their dissertation titled "Acute and Sublethal Impacts of Crude Oil Photo-Induced Toxicity in an Early Life Stage Marine Fish (*Sciaenops ocellatus*) and Invertebrate (*Americamysis bahia*)" on July 25th, 2023. Their major advisor was Dr. Aaron Roberts. Rachel accepted a Postdoctoral Research Associate position in the Department of Fisheries and Wildlife at Michigan State University.

Tessa Boucher successfully defended her M.S. thesis titled, "Avian Community Response to Riverby Ranch Restoration Reconstruction" on July 27th, 2023. She won second place in the graduate student oral presentation at the 2022 Texas SER (Society for Ecological Restoration) conference. Her major professor was Dr. Andrew Gregory and she was co-advised by Dr. James Bednarz. She is excited for what the future may hold.

Extramural Grants and Contracts

A Laser Microdissection System to Enhance Agricultural and Food Research in the North Texas and Southern Oklahoma Region. United States Department of Agriculture, National Institute for Food and Agriculture, Equipment Grants Program (USDA NIFA EGP). Brian G. Ayre (PI), Roisin C. McGarry, Vanessa M. Macias, Patrick J. Horn, and Jyoti Shah. $341,019.

Developing New Technologies for Improving Resistance to Fusarium Head Blight. US Department of Agriculture Research Service. August 1, 2023 - July 31, 2024. PI: Jyoti Shah; Co-PI: Brian Meckes. $128,575.

Elucidating the Cellular Machinery for Lipid Storage in Plants. US Department of Energy, Basic Energy Sciences- Physical Biochemistry Program (DE-SC0016536). Co-PIs -- Kent Chapman (UNT) and Yingqi Cai (UNT), $635,000

NSF-BSF: Mechanism of Cuticle Remodeling by Hypoxia. National Science Foundation. Total Intended Award Amount: $999,798. PI: Pamela Padilla.

Publications

Aaskov ML, Nelson D, Lauridsen H, Huong DTT, Ishimatsu A, Crossley DA 2nd, Malte H, Bayley M. Do air-breathing fish suffer branchial oxygen loss in hypoxic water? Proc Biol Sci. 2023 Sep 13;290(2006):20231353. doi: 10.1098/rspb.2023.1353. Epub 2023 Sep 13. PMID: 37700647

Amir R, Martínez-Force Enrique, Shi Jianxin, Alonso A.P (2023) Editorial: Metabolic architecture of developing seeds and grains. Front. Plant Sci., 14:1258353 (doi: 10.3389/fpls.2023.1258353). https://doi.org/10.3389/fpls.2023.1258353

Archer L, Mondal HA, Behera S, Twayana M, Patel M, Louis J, Nalam VJ, Keereetaweep J, Chowdhury Z, Shah J. 2023. Interplay between *MYZUS PERSICAE-INDUCED LIPASE 1* and OPDA signaling in limiting green peach aphid infestation on *Arabidopsis thaliana*. Journal of Experimental Botany, erad355, https://doi.org/10.1093/jxb/erad355

Bednarz JC, and Therrien JF. 2023. The full annual cycle of the American Kestrel: state of the knowledge, information gaps, and conservation needs. Journal of Raptor Research 57:125-130.

Biles KS, Bednarz JC, Schulwitz SE, Johnson JA 2023. Tracking Device Attachment Methods for American Kestrels: Backpack Versus Leg-Loop Harnesses. Journal of Raptor Research 57:304-313.

Bullock, H.E., Biles, K.S., Bednarz, J.C. 2023. Female-female spring fling in American Kestrels: an observation of a female-female pair and copulation behavior. Journal of Raptor Research 57:314-319.

Bush A, Compson Z, Rideout NK, Levenstein B, Kattilakoski M, Hajibabaei M, Monk WA, Wright MTG, Baird DJ. 2023. Replicate DNA metabarcoding can discriminate seasonal and spatial abundance shifts in river macroinvertebrate assemblages. Mol Ecol Resour. 23(6):1275-1287. doi: 10.1111/1755-0998.13794.

Cocuron JC, Alonso AP. 2023. ^{13}C-labeling reveals non-conventional pathways providing carbon for hydroxy fatty acid synthesis in *Physaria fendleri*. J Experimental Botany. 2023. Sep 5:erad343 https://doi.org/10.1093/jxb/erad343

Crossley JL, Smith B, Tull M, Elsey RM, Wang T, Crossley DA 2nd. 2023. Hypoxic incubation at 50% of atmospheric levels shifts the cardiovascular response to acute hypoxia in American alligators, *Alligator mississippiensis*. J Comp Physiol B. doi: 10.1007/s00360-023-01510-8.

Guo Y, Wang S, Yu K, Xu H, Song C, Zhao Y, Wen J, Fu C, Li Y, Zhang X, Zhang Y, Cao Y, Shao F, Wang X, Deng X, Zhao, Q, Wang, G, Dixon RA, Lin, J. 2022. MicroRNA408 enhances growth and saccharification efficiency in hybrid poplar. Nature Communications 14:4285.

Lichtenberg EM, Pearson AE. 2023. Pollinators & Pollination: Nature and Society. Jeff Ollerton. 2021. Pelagic Publishing, Exeter, United Kingdom. 286 pp. $32.00 paperback. ISBN: 978-1-78427-228-9. The Journal of Wildlife Management 87: e22416. (book review)

Liu X, Tang X, Compson ZG, Huang D, Zou G, Luan F, Song Q, Fang X, Yang Q, Liu J. Silicon supply promotes differences in growth and C:N:P stoichiometry between bamboo and tree saplings. 2023. BMC Plant Biol. 23(1):443. doi: 10.1186/s12870-023-04443-0.

Lu N, Jun JH, Li Y, Dixon RA. 2023. An unconventional proanthocyanidin pathway in maize. Nature Communications 14: 4349.

Miller SJ, Dykstra CR, Rolland V, Simon MM, Hays JL, Bednarz JC. 2023. Sibling Aggression, Feeding Rates, and Hatch Rank of Nestling Red-shouldered Hawks (*Buteo lineatus*). Journal of Raptor Research 57:419-433. DOI: 10.3356/JRR-22-76

Pires Da Silva J, Padilla PA, Garcia AM. 2023. Editorial: The intersection of gene regulation and metabolism in cardiovascular disease. Front Genet. 14:1253690. doi: 10.3389/fgene.2023.1253690. eCollection 2023.

Quedan D, Singh R, Akel A, Bernardino AL, Thang C, Bhaskaruni M, Haldankar A, Tanner BCW, Root DD. 2023. Cooperative & competitive binding of anti-myosin tail antibodies revealed by super-resolution microscopy. Arch Biochem Biophys. 747:109753. doi: 10.1016/j.abb.2023.109753. PMID: 37714251

Scholz P, Chapman KD, Ischebeck T, Guzha A. 2023. Analysis of Pectin-derived Monosaccharides from Arabidopsis Using GC–MS. Bio-protocol 13 (16):e4746. Published online doi: 10.21769/BioProtoc.4746

Scholz P, Chapman KD, Ischebeck T, Guzha A. 2023. Quantification of *Botrytis cinerea* Growth in *Arabidopsis thaliana*. Bio-protocol 13 (16): e4740. Published online doi: 10.21769/BioProtoc.4740.

Sundaramoorthi H, Fallatah W, Mary J, Jagadeeswaran P. Discovery of seven hox genes in zebrafish thrombopoiesis. 2023. Blood Cells Mol Dis. 104:102796. doi: 10.1016/j.bcmd.2023.102796. PMID: 37717409

Oral Presentations

A Lipid Transfer Protein Isoform Impacts Lipid Droplet Morphology in Seeds and Wax Deposition on Aerial Organs. A Guzha, J Ver Sagun, T.G. Navarrete, C Arias, P Whitehead, AP Alonso, E Grotewold, KD Chapman, invited presentation given by Kent Chapman, 10th European Symposium on Plant Lipids (ESPL), Amsterdam, Netherlands, July 10, 2023.

Advancing Pennycress as Alternative Renewable Energy. CoverCress Inc, virtual, July 31, 2023. Oral Presentation by Dr. Ana Paula Alonso.

City of Lewisville's Big Move Extending the Green: Phase I Garden Ridge Native Median Conversion. University of North Texas Undergraduate Internship with City of Lewisville Parks and Recreation. Invited talk at the City of Lewisville Parks Board meeting. Almaguer N., Cantu J., Lawton C., Montanez K., Baxter-Slye JL., Chastain C., Gallegos M., and Anaya S.

HOMOLOG OF RPW8 4 (HR4) in defense against a phloem sap-feeding pest. Invited talk by Dr. Jyoti Shah at the 2023 International Society of Molecular Plant-Microbe Interaction conference, Providence, Rhode Island, United States of America, July 2023. Co-authors: Moon Twayana, Anil Girija, Shreya Nair, Siddhartha Shah, Beatriz Alapatt.

Mapping the Pathways Leading to Industrially Relevant Fatty Acid Synthesis in *Physaria fendleri*. USDA-NIFA Project Director annual meeting, virtual, July 18, 2023. Oral Presentation by Dr. Ana Paula Alonso.

Monogamy Mythology: Painted Bunting (*Passerina ciris*) Breeding Ecology at an Urban Prairie. Elm Fork Chapter of the Texas Master Naturalists, Denton, TX, September 22, 2023. Invited presentation by Alejandra Gage. Co-authors, Katie Ceynar, J.C. Bednarz, and A. Gregory.

Solving the mysteries of the migration and wintering biology of the American Kestrel (*Falco sparverius*). Fort Worth Audubon Society, Fort Worth, TX, September 14, 2023. Invited joint presentation by Maddy Kaleta and J.C Bednarz.

Spatial use of breeding female Painted Buntings (*Passerine ciris*): documentation of the use of multiple male territories. Annual Meeting of the American Ornithologists' Society, August 11, 2023 by Katie Ceynar. Coauthors, J. Bednarz and A. Gregory.

Structure and mechanisms of metacommunity assembly among medium- and large-bodied mammals in a north Texas countryside ecosystem. Oral presented at the 19th Annual Biology Graduate Students Association Research Symposium, University of North Texas, Denton. McCain, C., D. Hoeinghaus, I. Castro-Arellano & J.E. Jiménez. 2023.

The group composition and dynamics of a cooperatively breeding population of Harris's Hawks in south Texas, Annual Meeting of the American Ornithologists' Society, August 11, 2023 by Brooke Poplin. Coauthors, J. Bednarz, A. Gibbons, and W. Clark.

The Storied Evolution of Primary Cilia in the Brain. Texas Woman's University Biology Dept. seminar series. September 15th, 2023. Invited talk by Dr. Jannon Fuchs.

Three-toed Box Turtle (*Terrapene carolina*) Spatial Ecology at Multiple Scales in North Texas. Oral presented at the 19th Annual Biology Graduate Students Association Research Symposium, University of North Texas, Denton. Joseph, S., A. Gregory & J.E. Jiménez. 2023.

Two might really be better than one: paired wintering American Kestrels have greater foraging success than singles. Annual Meeting of the American Ornithologists' Society, August 9, 2023 by Kelsey Biles. Coauthors, J. Bednarz

Poster Presentations

Anderson, C.E., Ferreira, S.S., and Antunes, M.S. (2023) Synthetic Boolean logic operations to rewire plant specialized metabolism. Gordon Research Conference – Plant Metabolic Engineering, Barcelona, Spain.

Chanal, S. & J.E. Jiménez. 2023. Species observed in Tres Puentes, southern Chile, using camera traps: data analysis and implications to biodiversity. Poster presented at the Reedy High School Scientific Fair, Frisco, Texas.

Collins SM, Ferring R, Lichtenberg EM. Bottom-up impacts of rotational grazing disturbance on ground-nesting bee assemblages: do they dig it? Ecological Society of America Annual Meeting (Portland, OR). Poster. Aug. 2023

Eze, F. (2023) Unusual Polyketide Synthases in *Colletotrichum Spinosum* 2023, BioDiscovery Institute Seminar Series, Denton TX.

Girija, A., Nair, S., Alapatt, B. Shah, S. Twayana, M., Shah, J. Resistance to the green peach aphid: HR4 and its interaction with VST1, CRK45, and FIB4. International Society of Molecular Plant-Microbe Interaction conference, Providence, Rhode Island, United States of America. July 2023.

Gonzalez-Villarreal, C. and Thompson, R. Measuring the Effect of the Graduate Student Teaching Excellence Program for Scientific Teaching (GSTEP-ST) on Retention of Biology Undergraduate Students in STEM. Society for the Advancement of Biology Education Research (SABER) 2023 annual meeting, Minneapolis, MN.

Jarral, R., Ferreira, S.S., and Antunes, M.S. (2023) CRISPR/Cas9-induced mutation of the *microRNA171b* gene in *Arabidopsis thaliana* plants. Poster presentation – UNT Scholars Day, Denton, TX

Lee, S. (2023) Room to breathe: carbon dioxide availability alters key aspects of *Methylococcus capsulatus* physiology 2023, BioDiscovery Institute Seminar Series, Denton TX.

Mahawaththa, I. & J.E. Jiménez. 2023. Small-scale tardigrade distribution: implications for sampling and biodiversity studies. Poster presented at the 19th Annual Biology Graduate Students Association Research Symposium, University of North Texas, Denton.

Muñiz ML, Gage A, Linogao J, Lopez PA, Meadows BT, Neathery A, Vohs M, Lichtenberg EM. Can Bumble Bees Learn from Lady Beetles? Animal Behavior Society Annual Meeting (Portland, OR). Poster. Jul. 2023

Neupane, S. (2023) Expression of Chimeric Polyketide Synthase (PKS) to *Aspergillus oryzae* and analysis of the secondary metabolites 2023, BioDiscovery Institute Seminar Series, Denton TX

Pham, D., Yadav, U., Cintia, C., Alonso, A., McHale, L., Cahoon, E., Clemente, T., Quach, T., Kim, H., Park, K. (2023). Metabolomic Study of Aquatic-Feed Transgenic Soybean to Enhance Sustainability and Nutritional Value for Aquaculture Feedstock. Biennial Cellular & Molecular Biology of the Soybean Conference 2023, Lincoln, NE.

Tahmina, M., Bozdag, S. (2023) Disease Risk Prediction Based on Graph Attention Networks 2023, BioDiscovery Institute Seminar Series, Denton TX.

Yadav, U.P., Duyen, P., Aris, C.L., Cocuron, J. C., Alonso, A.P. (2023). Mapping Active Pathways in Developing Soybean Thorne Embryos Using 13C-Labeling. Biennial Cellular & Molecular Biology of the Soybean Conference, Lincoln, NE.

Wheeler, D. & J.E. Jiménez. 2023. Challenges to protect birds in an urban wetland in southern Chile. Poster presented at the II Ornithological Congress of the Americas, Gramado, Brazil.

Whyle RL, Lichtenberg EM. Behavioral and Ecological Drivers of Insect Cuticular Hydrocarbon Profiles. Animal Behavior Society Annual Meeting (Portland, OR). Poster. Jul. 2023

BIOsphere is a quarterly newsletter of the Department of Biological Sciences, University of North Texas

Physical Location
1511 West Sycamore
Life Sciences Complex
Denton, TX 76203-5017, USA

Phone (940) 565-3591
Web: https://biology.unt.edu/

Mailing Address
University of North Texas, Department of Biological Sciences
1155 Union Circle # 305220
Denton, TX 76203-5017, USA

Fax: (940) 565-3821
Facebook: https://www.facebook.com/untbiology