



Faculty and Staff Awards and Recognitions

Congratulations to **Dr. Kent Chapman** for being elected as a 2024 Fellow of the American Association for the Advancement of Sciences (AAAS) section of Biological Sciences. In 2024, the AAAS Council elected 471 members as Fellows of AAAS. Election as a Fellow honors members whose efforts on behalf of the advancement of science or its applications in service to society have distinguished them among their peers and colleagues. More details on the 2024 AAAS Fellows can be found at:

<https://www.aaas.org/programs/fellows/2024-aaas-fellows>



Dr. Kent Chapman



Dr. Jyoti Shah

Congratulations to **Dr. Jyoti Shah** for being reappointed as University Distinguished Research Professor. The purpose of this award is to recognize tenured faculty at the rank of professor who have achieved a truly exceptional record of creative activities or research productivity and who demonstrate a record of continued extraordinary productivity. This prestigious designation comes with the expectation of ongoing exceptional research performance and the commitment to further develop and promote excellent research among graduate students, colleagues, and broader professional communities. Dr. Shah's research in plant science concerns the molecular and physiological underpinnings of plant defense and susceptibility to pathogens and insects, and developing novel strategies for mitigating diseases and insect infestation of plants.

Shirley 'Shirl' Richardson, Senior Administrative Specialist, Department of Biological Sciences is named one of the [UNT Integrity Champions for Spring 2025](#) by University Integrity and Compliance. The recipients of this award are faculty and staff who consistently exemplify Courageous Integrity, including ensuring compliance with university policies, completing training, and encouraging their peers to make ethical decisions. Shirl provides a welcoming environment in the Department of Biological Sciences' Chair's Office and ensures that the large number of faculty, staff, and students in the department receive the assistance they need to complete their tasks. If needed, she directs them to those who can help. She organizes departmental events and steps in without any hesitation to help other colleagues. Most recently she took on responsibilities outside her expertise to prevent process disruptions and worked with other staff to identify and solve issues along the way to help our graduate students. For our students facing personal challenges, Shirl provides compassionate support and guides them to appropriate resources to ensure their safety and well-being. Her dedication and integrity make her a true champion for the department and the university.



Shirl Richardson

Student Awards

Adrian Heckart, MS student in Dr. Ana Alonso's Lab, received the Carl Storm Underrepresented Minority Fellowship (\$1,000), UNT Graduate Student Travel Awards from the College of Science (\$500) and the BioDiscovery Institute (\$500) to attend and present a poster at the Gordon Research Conference in Immunology of Fungal Infections in January 2025 in Ventura, CA.



Adrian Heckart

Brady Erlandsen, undergraduate research assistant in the Alonso Lab, received a UNT Undergraduate Research Travel Award from the College of Science (\$750), to attend and give an oral presentation at the Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting in March 2025 in Raleigh, NC.



From left to right: Majorie Mendoza, Brady Erlandsen, Julia Moreira, and Cindy Alonso-Cocuron) attending the SS-ASPB in March 2025 in Raleigh, NC.

Cindy Alonso-Cocuron, undergraduate research assistant in the BioAnalytical Facility, received UNT Undergraduate Travel Awards from the College of Science (\$750) and from the College of Engineering (\$350) to attend and present a poster at the Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting in March 2025 in Raleigh, NC.

Julia Moreira, undergraduate research assistant in the BioAnalytical Facility, received awards from the UNT College of Science (\$750) and the American Society of Plant Biology Plant Scholar Program Grant (\$200) to attend and present a poster at the Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting in March 2025 in Raleigh, NC.

Marjorie Mendoza, undergraduate research assistant in the Alonso Lab, received a UNT Undergraduate Travel Award from the College of Engineering (\$350) to attend and present a poster at the Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting in March 2025 in Raleigh, NC.

Salim Makni, postdoctoral researcher in the Alonso Lab, received UNT Postdoctoral Travel Awards from the BioDiscovery Institute (\$1,000) and from the College of Science (\$1,000) to attend and present a poster at the Gordon Research Conference in Immunology of Fungal Infections in January 2025 in Ventura, CA.

Other recipients of the College of Science Travel Awards for spring include **Maryam Arabi** (major professor: Dr. Douglas Root), **Brandon Deeb** (major professor: Dr. Patrick Horn), **Arya Mohanan** and **Ishani Mahawaththa** (major professor: Dr. Juliana D'Andrilli), **Brooke Poplin** (major professor: Dr. Andrew Gregory), **Jessica Rippamonti** (major professor: Dr. Ed Dzialowski), **Vaibhavi Srinivasan** (major professor: Dr. Aaron Roberts), and **Kayla Nguyen-Alley**, **Victoria Youngblood**, and **Tyler Armstrong** (major professor: Dr. Ame Lund).

Service Awards

The following Department of Biological Sciences faculty and staff were recognized for their combined 260 years of service with the University of North Texas during the annual Service Awards event on March 18, 2025. CONGRATULATIONS to all our Service Award honorees!

Celebrating 5 years

Athanas Guzha
Dr. Mary Ladage
Dr. Calvin Henard
William Charles Terry

Celebrating 10 years

Dr. James Bednarz
Carey Earthman
Christina Latimer (EESAT/IAS)
Dr. Nan Lu
Dr. Neal Smatresk
Wendy Pace
Dr. Xiaoqiang "XQ" Wang

Celebrating 15 years

Dr. David Hoeinghaus

Celebrating 20 years

Dr. Arland Alberts
Dr. Mark Burieson
Richard Freiheit
(EESAT/IAS)
Dr. Rudi Thompson

Celebrating 25 years

Brian Wheeler (EESAT/IAS)
Dr. Ed Dzialowski
Kimberly Piccolo

Biology Research News

Lessons From the Heart: UNT researchers are exploring one of the body's most vital organs, the heart, to help develop better, more effective treatments in the future. It is work that's been more than a decade in the making for UNT biochemist **Dr. Douglas Root**, associate professor of biological sciences who specializes in the molecular structure of muscles and proteins. **Dr. Amie Lund**, associate professor of environmental toxicology, is hoping her research can help prevent heart problems for people down the road as well. More on the article and Research at UNT can be found at: https://research.unt.edu/news/lessons_from_the_heart.html



Associate Professor Dr. Douglas Root (fourth from left) in his lab with his students.



Associate Professor Dr. Amie Lund in her lab with her students.

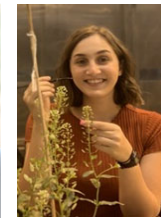
Thesis and Dissertation

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

Adrian Heckart successfully defended his MS thesis titled, "Metabolic Characterization of *Histoplasma capsulatum* Utilizing a Multi-Omics Approach." His major advisor was Dr. Ana Paula Alonso. Adrian will be entering a Medical Scientist Training Program (MSTP) this Summer to attain an MD/PhD and will continue researching into human fungal pathogens and their metabolism.



Adrian Heckart



Amira Rasoul

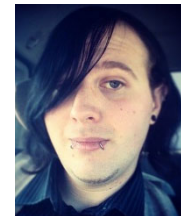


Derek Nelson

Amira Rasoul has successfully defended her Dissertation titled, "Characterization of FATTY ACID ELONGATION1 (FAE1) in *Thlaspi arvense*." Her Major Professor was Dr. Ana Alonso.

Derek Nelson successfully defended his PhD dissertation titled, "Cardiovascular Responses to Crude Oil and Hypoxia in Pelagic and Coastal Teleosts: A Study of Hemodynamic Mechanisms." His major professor was Dr. Dane Crossley. Currently, Derek is a faculty member at Austin College in Sherman, TX, and is pursuing tenure.

Evan Brothers successfully defended his Thesis titled, "Holobiont genomics for exploring the roles of small RNAs in mosquito-microbe communications". His major advisor was Dr. Vanessa Macias. Evan plans to continue his education in the form of a PhD in Nurturing and further increasing his knowledge of Entomology & Arachnology to ultimately become a Professor of Entomology.



Evan Brothers



Rachel Valentine

Rachel Valentine successfully defended her MS thesis titled, "Developing black planaria (*Dugesia dorocephala*) as model organisms for Nutri omics studies." Her major professor was Dr. Vladimir Shulaev. She plans to pursue a career in research and development, focusing on analytical chemistry and related fields.

Vaibhavi Srinivasan successfully defended her dissertation titled, "Effects of Methylmercury Exposure on Complex Behaviors in Fathead minnows (*Pimephales promelas*)". Her major advisor was Dr. Aaron Roberts. Vaibhavi is looking for opportunities in both academia and industry.



Vaibhavi Srinivasan



Wenasa Frifer

Wenasa Frifer successfully defended her PhD dissertation titled, "Crude oil and temperature effects on behavior, regeneration, and oxygen consumption in the planarians *Schmiditea mediterranean* and *Girardia dorocephala*." Her major advisor was Dr. Warren Burggren. Wenasa's goal is to continue teaching biology and inspire students to love the subject as much as she does. In the long term, she wants to return to the lab to conduct more research in her areas of interest.

Student Activities

UNT representation at the 86th Annual Southern Section ASPB Meeting: Four undergraduate research assistants, two graduate students, and three faculty members represented UNT at the 86th Annual Southern Section ASPB Meeting in March 2025 in Raleigh, NC. The meeting provides early career researchers, including undergraduate and graduate students and postdoctoral associates, the opportunity to present their plant-related research.

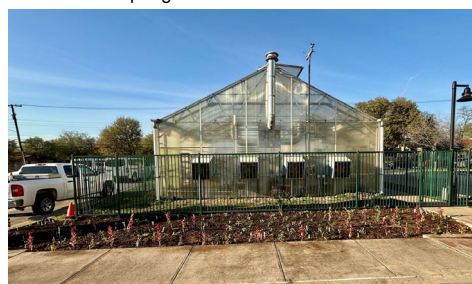


UNT Society for Ecological Restoration: Volunteers from the Spring 2025 Tour of LLELA gathered to hear the activities happening at LLELA and saw prairie restoration techniques. Students volunteered with Richard Freiheit and the Friends of LLELA as well as Ms. Angela Lewallen and the Natural Pathways program. UNT students help mentor high school students while learning restoration techniques.

The UNT Ecology Greenhouse: The UNT Ecology Greenhouse Crew led by senior Ecology major Chione (Kiwii) Lawton partnered with UNT Grounds and UNT Bee Campus to grow and install Texas native wildflowers in front of the ENV greenhouse. This native bed, along with others, will be maintained by the UNT Greenhouse Crew, Bee Campus Committee, and the Native Plant Action Team to sow seeds for future greenhouse growth and plantings around campus.



Spring 2025 Tour of LLELA



The UNT Ecology Greenhouse and the crew



UNT Bee Campus educational outreach

UNT Bee Campus, and Drs. Elinor Lichtenberg and Jaime Baxter-Slye helped provide educational outreach about all things bugs at the grand opening of the Heard Natural Science Museum and Wildlife Sanctuary's Bugs LIVE exhibit in McKinney. Running through June 29, the exhibit features giant animatronic bugs along a scenic nature trail, offering an up-close look at the insect world.

Alumni News

Congratulations to **Dr. Vamsi Nalam** on his promotion to Associate Professor with tenure in the Department of Agricultural Biology in the College of Agricultural Sciences at Colorado State University, Fort Collins. Dr. Nalam whose research is focused on the molecular mechanisms underlying plant-insect interaction and the vectoring of pathogens by insects, received his PhD in Molecular Biology from UNT in 2012. You can find out more about Dr. Nalam and his research at <https://www.nalamlab.com/> and <https://scholar.google.com/citations?user=CyVu3-sAAAAJ&hl=en>



Dr. Vamsi Nalam



Dr. Monika Patel

Congratulations to UNT alumna **Dr. Monika Patel** on her being licensed as a Registered Patent Agent by the United States Patent and Trademark Office. As a Registered Patent Agent with Baker McKenzie in Dallas, Dr. Patel is authorized to practice before the United States Patent and Trademark Office in all patent matters. Dr. Patel received her PhD in Biochemistry and Molecular Biology from UNT in 2020.

Extramural Grants and Contracts

NSF CAREER: Organic and inorganic carbon metabolism in methanotrophic bacteria. National Science Foundation. PI: Calvin A. Henard, \$819,654

Development and validation of CRISPR interference genome-wide libraries to enable high-throughput single-carbon biocatalyst optimization. Department of Energy via MSI STEM Research & Development Consortium. PI: Calvin A. Henard. \$76,702.

Publications

- Burggren, W.W., Dzialowski, E.M., and Tzschentke, B. (2025) The avian embryo as a time-honored animal model in developmental, biomedical and agricultural research. *Philosophical Transactions of the Royal Society B*. 380: 20230438. Doi: 10.1098/rstb.2023.0438
- Clews, A.C., Whitehead, P.S., Zhang, L., Lü, S., Shockey, J.M., Chapman, K.D., Dyer, J.M., Xu, Y., Mullen, R.T. Identification and Characterization of Lipid Droplet-Associated Protein (LDAP) Isoforms from Tung Tree (*Vernicia fordii*). *Plants* (Basel). 2025 Mar 5;14(5):814. doi: 10.3390/plants14050814. PMID: 40094817
- Deegala, S., Rathnapala, H.C., Rajendran, S. and Hettiarachchi, C., 2025. Transgenic Innovation: Harnessing Cyclotides as Next Generation Pesticides. *ACS omega*. <https://pubs.acs.org/doi/full/10.1021/acsomega.4c09668>
- Dixon R, Eaton H. Celebrating 360 years of Philosophical Transactions. *Philos Trans R Soc Lond B Biol Sci*. 2025 Jan 9;380(1917):20240492. doi: 10.1098/rstb.2024.0492. Epub 2025 Jan 9. PMID: 39780593
- Dixon, J.D., Azad, R.K. Physicochemical Evaluation of Remote Homology in the Twilight Zone. *Proteins*. 2025 Feb;93(2):452-464. doi: 10.1002/prot.26742. Epub 2024 Sep 1. PMID: 39219099
- Ferreira, S.S., Pandey, S., Hemminger, J., Bozdog, S., Antunes, M.S. Early changes in microRNA expression in Arabidopsis plants infected with the fungal pathogen *Fusarium graminearum*. *PLoS One*. 2025 Feb 6;20(2):e0318532. doi: 10.1371/journal.pone.0318532. eCollection 2025. PMID: 39913369
- Green, C.S., Morris, J.M., Magnuson, J.T., Leads, R.R., Lay, C.R., Gielazyn, M., Rosman, L., Schlenk, D., Roberts, A.P. Exposure to the Polychlorinated biphenyl mixture Aroclor 1254 elicits neurological and cardiac developmental effects in early life stage zebrafish (*Danio rerio*). *Chemosphere*. 2025 Feb;371:144023. doi: 10.1016/j.chemosphere.2024.144023. Epub 2025 Jan 3. PMID: 39724984
- Heckart, A., Cocuron, J.C., Ray, S., Rappleye, C., Alonso, A.P. (2025) Revealing pathogenesis-associated metabolites in *Histoplasma capsulatum* through comprehensive metabolic profiling. *mSystems* 10(3), e00186-25. <https://doi.org/10.1128/msystems.00186-25>
- Maneekul, J., Chiaha, A., Hughes, R., Labry, F., Saito, J., Almendares, M., Banda, B.N., Lopez, L., McGaskey, N., Miranda, M., Rana, J., Zadeh, B.R., Hughes, L.E. Investigating novel Streptomyces bacteriophage endolysins as potential antimicrobial agents. *Microbiol Spectr*. 2025 Jan 7;13(1):e0117024. doi: 10.1128/spectrum.01170-24. Epub 2024 Nov 21. PMID: 39570052
- Rasoul, A., Johnston, C.R., LaChance, J., Sedbrook, J.C., Alonso, A.P. Propelling sustainable energy: Multi-omics analysis of pennycress FATTY ACID ELONGATION1 knockout for biofuel production. *Plant Physiol*. 2025 Feb 7;197(2):kia650. doi: 10.1093/plphys/kiae650. PMID: 39657724
- You, J., Fuchs, J., Wang, M., Hu, Q., Tao, X., Krolczyk, E., Tirumala, T., Bragin, A., Liu, H., Engel, J. Jr, Li, L. (2025). Preventive effects of transcranial photobiomodulation on epileptogenesis in a kainic acid-induced rat epilepsy model. *Experimental Neurology* 383:1-12. <https://doi.org/10.1016/j.expneurol.2024.115005>

Oral Presentations

- A putative sulfate transporter is essential for nodule development and symbiotic nitrogen fixation in *Medicago truncatula* Denton, Texas March 24, 2025, Invited Seminar, BioDiscovery Institute by Rebecca Dickstein.
- AI Tools and the Potential Impact on Teaching. Lee Hughes. Presentation. Texas Branch - American Society for Microbiology Spring Meeting, Cedar Hill, TX. March 2025.
- Exploring Carbon Metabolism to Boost Specialty Oil Production in Alternative Crops. Institute of Plant Breeding Genetics and Genomics Annual Retreat, Macon, GA. Invited talk by Dr. Ana Paula Alonso.
- Exploring Stomatal Density and Lignin Content in *Physaria fendleri* for Enhanced Hydroxy Fatty Acid Production. Southern Section of the American Society of Plant Biologists (SS-ASPB) annual meeting in Raleigh, NC, March 29, 2025. Invited talk by Brady Erlandsen. Co-authors: J. Sagun, J.C. Cocuron, S. Bodampati, and A.P. Alonso.
- Genome mining -guided discovery of Thielavin Z8, a new tridepside, and other metabolites from the potential bioherbicide *Colletotrichum spinosum* Denton, Texas February 17, 2025, Invited Seminar, BioDiscovery Institute by Sanjeevan Rajendran.
- How does grazing management affect plant communities on North Texas Rangelands? UNT Scholars Day oral presentation by Jada Martinez (undergraduate). Co-author: Dr. Elinor M. Lichtenberg.
- Investigating a Terpene synthase cluster of *Sarocladium zeae* by heterologous expression in *Aspergillus oryzae* NSAR1 Denton, Texas February 17, 2025, Invited Seminar, BioDiscovery Institute by Sameera Jayasundara.
- Light dependent dephosphorylation of Rubisco activase in Arabidopsis is catalyzed by *SHEWENELLA-LIKE PROTEIN PHOSPHATASE 1*. Denton, Texas. February 10th 2025. Invited talk by BioDiscovery Institute Seminar series. Dr. Nikita Bhatnagar.
- Over-fertilized: Rethinking gardening practices for sustainability, a discussion about farming. Village on the Ridge, Philadelphia PA, USA. Invited oral presentation, October 10, 2024. (The Villages movement is an organization for senior citizens to help them thrive in their homes and communities. <https://www.helpfulvillage.com/the-village-movement>) Rebecca Dickstein. 2024.
- Packaging vegetable oils: Lipid droplet biogenesis in plant cells. Plant Physiology Webinar - Plant Lipids: Signaling and Metabolism. February 13, 2025. Invited webinar by Yingqi Cai.
- Public outreach talk: Managing grasslands for pollinator conservation. Heard Natural Science Museum Bugs LIVE Opening Day Celebration, McKinney, TX. Invited talk by Dr. Elinor M. Lichtenberg.

Social information used by bumble bees across trophic guilds. Entomological Society of America Southwest Branch Annual Meeting (Round Rock, TX). Invited talk by Dr. Elinor M. Lichtenberg. Co-authors, Marie Muñiz (undergraduate), Brandon Meadows (undergraduate), Pablo Lopez (undergraduate).

Undergraduate Research IS the Future. The Keynote address by Jannon Fuchs for the Great Plains Honors Council Annual Meeting. March 7, 2025.

Understanding the relationship between protein production and turnover in bacteria Denton, Texas March 17, 2025, Invited Seminar, BioDiscovery Institute by Rohan Balakrishnan.

Conference Presentations

Alonso-Cocuron, C., Moreira, J., Cocuron, J.C., Elharis, Y., and Alonso, A.P. (2025). Development and Optimization of an In-House Untargeted Mass Spectrometry Database for Comprehensive Metabolomic Profiling. Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting, Raleigh, NC.

Anne Le, Rebecca Dickstein and Vijaykumar Veerappan. 2024. Characterization of mutants defective in symbiotic nitrogen fixation in the model legume plant *Medicago truncatula*. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS) 2024. Pittsburgh, PA, USA. Poster Presentation. November 13-16, 2024.

Burdette-Lapuz, A., Hubbard, M., Emadi, C., Bean, P., and Mager, E. (2025) Aiding Imperiled Fish and Mussel Conservation Using Swimming Performance Metrics to Inform the Design or Modification of Road Stream Crossings. Texas Chapter of the American Fisheries Society Annual Meeting, College Station, TX.

Bryant, S., Pereira, S., Mattox, A., Bereimipour, A., Sulaiman, A., and Hughes, L.E. Isolation and Annotation of *Streptomyces antibioticus* Bacteriophage Greenbelt. Poster. Texas Branch - American Society for Microbiology Spring Meeting, Cedar Hill, TX. March, 2025.

Bucio, C.R., Horn, P. (2025). Enhancing Understanding of Polyunsaturated Fatty Acid Biosynthesis through Mutagenesis Studies. American Society of Plant Biologists - Southern Section, Raleigh, NC

Deeb, B., Rust, G., Rajendran, J., Whitehead, P., Horn, P. (2025). Characterizing Biochemical Pathways for Producing Cyclic Fatty Acids in Cotton. American Society of Plant Biologists - Southern Section, Raleigh, NC.

Doh, B., Ramesh, K., Meng, F. (2025). Genomic profiling of repetitive elements during embryogenesis using H4K16ac. UTA-Fort Worth Regional Science and Engineering Fair, Fort Worth, TX. 2nd place in the Animal Sciences category, selected to present at TXSEF at Texas A&M University, College Station, TX

Dos Santos Neto, F., Dang, T., Smithers, B., Li, X., Mager, E., and Acevedo, M. (2025) Image Recognition Model for Crustacean Postlarvae Counting and Size Estimation. Texas Chapter of the American Fisheries Society Annual Meeting, College Station, TX.

Elharis, Y., Sagun, J., and Alonso, A.P. (2025) Lipid Profiling of *Physaria fendleri* to Enhance Hydroxy Fatty Acid Production. Gordon Research Conference (GRC) in Plant Lipids, Pomona, CA.

Emadi, C., Dos Santos Neto, F., Smithers, B., Acevedo, M., and Mager, E. (2025) Effects of Salinity on the Toxicity and Real-Time Metabolic Rate Responses of Acute Ammonia Exposure to Juvenile *Macrobrachium rosenbergii*. Texas Chapter of the American Fisheries Society Annual Meeting, College Station, TX.

Heckart A., Ray S.C., Cocuron J.C., Rappleye C.A., Alonso A.P. (2025). Fingerprinting the Metabolism of *Histoplasma capsulatum* During Macrophage Infection. Gordon Research Conference in Immunology of Fungal Infections, Ventura, CA.

Makni, S., Ray, S., Mendoza, M. Cocuron, J.C., Rappleye, C., and Alonso, A.P. (2025). Identification of macrophage molecules consumed by *Histoplasma capsulatum* during infection. Gordon Research Conference in Immunology of Fungal Infections, Ventura, CA.

Mawla, N., Dhar Avula, D., Cahoon, S., Liu, Y.L., Puta, C., Sulaiman, A., and Hughes, L.E. The Annotation of the BD3 *Streptomyces bicolor* Actinobacteriophage, Pavo. Poster. Texas Branch - American Society for Microbiology Spring Meeting, Cedar Hill, TX. March, 2025.

Mendoza, M., Makni, S., Yadav, U., Alonso, A. (2025). Dynamic 13C-Labeling Reveals Nutrient Flow to Pennycress Embryos. Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting, Raleigh, NC.

Reid, C., Washington, H., Ugokwe, C., Ekwueme, J., Hudson, M., Brecht, H., Gazi, A., Fatima, S., Ramanathan, S., Mashiyat, T., Sulaiman, A., and Hughes, L.E. Isolation and Annotation of a Novel Subcluster BE1 Phage, Marsus. Poster. Texas Branch - American Society for Microbiology Spring Meeting, Cedar Hill, TX. March, 2025.

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