



News, Awards and Recognitions

University Distinguished Research Professor **Dr. Rick Dixon** was elected as a Fellow of the Royal Society. The Royal Society is a fellowship of over 1600 eminent scientists, engineers and technologists who have made substantial contributions in improving natural knowledge in the sciences. Dr. Dixon was also elected as a Fellow of the American Society of Plant Biologists (ASPB). The Fellow of ASPB recognizes distinguished and long-term contributions to plant biology and service to the Society.



Dr. Richard Dixon

Nobel Laureate Dr. Randy Schekman from the University of California at Berkeley was the Guest of Honor at the Biology Graduate Student Association hosted 15th Departmental Research Day, which was held April 19-20. He was honored as the UNT VIP Distinguished Lecturer for his lecture "*Sorting of small RNAs for Secretion in Exosomes by Cultured Human Cells*", which was delivered on April 20th. Later that evening, Dr. Schekman gave a second talk "*From Pond Scum to Stockholm: A Life in Basic Science*", which was hosted by the UNT Office of the President. Dr. Schekman was awarded the Presidential Award by UNT President Dr. Neal Smatresk.



The Research Day activities also included over forty presentations by graduate and undergraduate students, including research talks and posters. Students competed for prizes in several categories. The prize for Best Graduate Student Talk

was awarded to **Devasantosh Mohanty**, with **Moon Twayana** earning honorable mention. The Best Graduate Student Poster prize went to **Amith Reddy Devireddy**, with **Dua'a Quedan** and **Fathy El-Gebaly** earning honorable mentions. **Kody Hughes** won the Best Undergraduate Poster award, with **Jessica Barba** receiving an honorable mention. The Best Artwork prize was awarded to **Kody Hughes** and **Emmanuel Ortiz**. Congratulations to our winners and all of our student participants! Additional photos of the event can be found on the BGSA Facebook page <https://www.facebook.com/UNTBGSA/>.



Dr. James Kennedy Dr. Lee Hughes Dr. Dane Crossley

At the May 2018 commencement, Regent's Professor **Dr. James Kennedy** and Associate Professor **Dr. Lee Hughes** were honored with the College of Science Excellence in Teaching Award, Associate Professor **Dr. Dane Crossley** was honored with the College of Science Excellence in Research Award, and University Distinguished Research Professor **Dr. Jyoti Shah** and Lecturer and Senior Undergraduate Advisor **Dr. Jill Dewey** were honored with the College of Science Excellence in Service Award.



Dr. Jyoti Shah Dr. Jill Dewey

Brittany Harried, graduate student in Dr. David Hoeinghaus's lab was awarded the "Outstanding Student Presentation Award" for her presentation entitled "*Mercury body burden and maternal transfer, egg quality and fecundity of Alligator Gar in the lower Trinity River: Are bigger fish always better for recruitment?*" at the Texas Chapter American Fisheries Society meeting. Part of her financial award is to support her to present her study at the national American Fisheries Society meeting in Atlantic City this August as part of the Outstanding Student Award session.



Brittany Harried



Dr. Ashley Cannon

Ashley Cannon, post-doctoral associate in Dr. Kent Chapman's lab received a NSF Midwest Plant Cell Dynamics Travel Award that funded her registration and housing while attending the Midwest Plant Cell Dynamics Meeting in Madison, WI from May 29th – June 1, 2018

Staff Appointments

A warm welcome to the new staff members in the department of Biological Sciences and the BioDiscovery Institute.

Dr. Fernanda R Castro-Moretti joined the BioDiscovery Institute (BDI) as a Postdoctoral Research assistant. She received dual PhD degrees in Translational Plant Sciences from The Ohio State University, and in Cellular and Molecular Plant Biology from The University of Sao Paulo, Brazil. Her research interests are in the fields of plant-microbe interactions, plant pathology and metabolomics. She is working in Associate Professor Dr. Ana Paula Alonso's Lab on a project aimed at unveiling the metabolic interactions between different species from the Rubiaceae family (including coffee) and their endophytic communities.



Dr. Fernanda R Castro-Moretti



Wendy Rounsley

Wendy Rounsley joined the department of Biological Sciences as Administrative Coordinator. In this position, she will be involved with budget management, billing, copier management, computer rollout, etc. Wendy has worked at educational institutes for over 20 years, holding positions such as HR/PR Director, Risk Manager, and Asst. Business Manager. She joined UNT in 2014. Prior to joining the department, she worked in Payroll and Procurement Services and served the College of Science as their Senior Buyer.



Ryan O'Shaughnessy



Sarah Houdek

Ryan O'Shaughnessy joined the department of Biological Sciences as the Scientific Instrument Technician Supervisor. He will be assisting the Biological Sciences and the Chemistry departments with scientific instrument repairs and maintenance. For the last four years Ryan was a Biomedical Equipment Repair Service Manager. He has serviced and repaired a wide berth of medical and scientific analyzers, instruments, and electronics ranging from hematology, immunology, and chemistry analyzers to centrifuges, microscopes, CPUs, and amplifiers.

Sarah Houdek joined the department of Biological Sciences as an Administrative Specialist. She is a graduate of Baylor University and has worked in the advertising production industry, public schools and non-profits. She will work along with Kim Piccolo on Instructional and Lab Fees, equipment set-aside schedule, payroll processes, TA/GSA assignments, schedule of classes and related Curriculog, and adjunct and hourly hiring. In addition, she will provide graduate administrative support and assist with organizing and hosting department graduate student orientation.

Thesis and Dissertations

Khadiza Zaman and **Feroza Kaneez Choudhury** successfully defended their Ph.D. dissertations. Dr. Zaman studied the neuroprotective effect of estradiol. Her dissertation title was "*Revisiting the neuroprotective role of 17β-estradiol (E2): A multi-omics-based analysis of the rat brain and serum*". Dr. Choudhury studied the effect of light stress on metabolic changes in plants. Her dissertation title was "*Rapid metabolic response of plants to light stress*". Dr. Vladimir Shulaev, Professor in the department of Biological Sciences and the BioDiscovery Institute was the graduate advisor for Drs. Zaman and Choudhury.



Khadiza Zaman



Feroza Kaneez Choudhury

Recent Publications

Azad, R.K., and Shulaev, V. (2018) Metabolomics technology and bioinformatics for precision medicine. Brief Bioinform. doi: 10.1093/bib/bbx170. <https://academic.oup.com/bib/advance-article/doi/10.1093/bib/bbx170/4785947>.

Cannon, A.E., Salmi, M.L., Cantero, A., and Roux, S.J. (2018) Generation of Transgenic Spores of the Fern *Ceratopteris richardii* to Analyze Ca²⁺ Transport Dynamics During Gravity-Directed Polarization. Current Advances in Fern Research (Fernández H., ed). Springer, Cham. Pp 285-303. https://link.springer.com/chapter/10.1007/978-3-319-75103-0_14.

- Choudhury, F.K., Devireddy, A.R., Azad, R.K., Shulaev, V., and Mittler, R. (2018) Rapid accumulation of glutathione during light stress in Arabidopsis. *Plant Cell Physiol.* doi: 10.1093/pcp/pcy101.
- Devireddy, A.R., Zandalinas, S.I., Gómez-Cadenas, A., Blumwald, E., and Mittler, R. (2018) Coordinating the overall stomatal response of plants: Rapid leaf-to-leaf communication during light stress. *Science Signaling* 11, eaam9514. DOI: 10.1126/scisignal.aam9514.
- Faraji, M., Fonseca, L.L., Escamilla-Trevino, L., Barros-Rios, J., Engle, N., Yang, Z.K., Tschaplinski, T.J., Dixon, R.A. and Voit, E.O (2018) Mathematical models of lignin biosynthesis. *Biotechnology for Biofuels* 11: 34. <https://doi.org/10.1186/s13068-018-1028-9>
- Gallego-Giraldo, L., Pose-Albacete, S., Pattathil, S., Peralta, A.G., Hahn, M., Ayre, B.G., Sunuwar, J., Hernandez, J., Patel, M., Shah, J., Rao, X., Knox, J.P., and Dixon, R.A. (2018) Elicitors and defense gene induction in plants with altered lignin compositions. *New Phytol*, doi: 10.1111/nph.15258. <https://nph.onlinelibrary.wiley.com/doi/abs/10.1111/nph.15258>.
- Gary, S., Adegboye, J., Popp, B., Cocuron, J.C., Woodrum, B., and Kovinich, N. (2018) Combining semi-synthesis with plant and microbial biocatalysis: new frontiers in producing a chemical arsenal against cancer. *Royal Soc. Chem. Advances*. 8: 21332-21339. <http://dx.doi.org/10.1039/C8RA02184H>.
- Goodwin, J., Choi, H., Hsieh, M.H., Neugent, M.L., Ahn, J.M., Hayenga, H.N., Singh, P.K., Shackelford, D.B., Lee, I.K., Shulaev, V., Dhar, S., Takeda, N., and Kim, J.W. (2018) Targeting hypoxia-inducible factor-1 α /pyruvate dehydrogenase kinase 1 axis by dichloroacetate suppresses bleomycin-induced pulmonary fibrosis. *Am. J. Respir. Cell. Mol. Biol.* 58:216-231
- Jensen, B., Boukens, B.J., Crossley, D.A. II., Conner, J., Mohan, R., Postma, A.V, Gloschat, C.R., Eelsey, R.M., Sedmera, D., Efimov, I., and Christoffels, V.M. (2018) Specialized impulse conduction pathway in the alligator heart. *eLife* 7:e32120 DOI: 10.7554/eLife.32120.
- Jones, L.B., Ghosh, P., Lee, J.-H., Chou, C.-N., and Kunz, D.A. (2018) Linkage of the *Nit1C* gene cluster to bacterial cyanide assimilation as a nitrogen source. *Microbiology* 164:956-968.
- Joyce, W., Crossley, J.L., Eelsey, R.M., Wang, T., and Crossley, D.A. II. (2018) Contribution of active atrial contraction to cardiac output in anesthetized American alligators (*Alligator mississippiensis*). *J. Exp. Biol.* doi: 10.1242/jeb.178194.
- Joyce, W., Williams, C.J., Crossley, D.A. II., and Wang, T. (2018) Venous pressures and cardiac filling in turtles during apnoea and intermittent ventilation. *J. Comparative Physiology B.* 188: 481-490.
- King, S.D., Gray, C.F., Song, L., Nechushtai, R., Gumienny, T.L., Mittler, R., and Padilla, P.A. (2018) The *cisd* gene family regulates physiological germline apoptosis through *ced-13* and the canonical cell death pathway in *Caenorhabditis elegans*. *Cell Death Differentiation*. doi: 10.1038/s41418-018-0108-5.
- Lu, S., Sturtevant, D., Aziz, M., Jin, C., Li, Q., Chapman, K. D., and Guo, L. (2018) Spatial analysis of lipid metabolites and expressed genes reveals tissue-specific heterogeneity of lipid metabolism in high-and low-oil *Brassica napus* L. seeds. *Plant J.* 94: 915-932. <https://onlinelibrary.wiley.com/doi/abs/10.1111/tpl.13959>. Cover Issue.
- Mager, E., Pasparakis, C., Stieglitz, J., Hoenig, R., Morris, J., Benetti, D., and Grosell, M. (2018) Combined effects of hypoxia or elevated temperature and Deepwater Horizon crude oil exposure on juvenile mahi-mahi swimming performance. *Marine Environmental Research*. 139:129-135. <https://doi.org/10.1016/j.marenvres.2018.05.009>.
- Mueller, C.A., Eme, J., Tate, K.B., Crossley, D.A. II. (2018) Chronic captopril treatment reveals the role of ANG II in cardiovascular function of embryonic American alligators (*Alligator mississippiensis*). *J. Comparative Physiology B.* 188:657-669.
- Nalam, V., Louis, J., and Shah, J. (2018) Plant defense against aphids, the pest extraordinaire. *Plant Sci.* <https://doi.org/10.1016/j.plantsci.2018.04.027>.
- Nelson D, DA Crossley II, R Eelsey and KB Tate (2018) Cardiovascular adjustments with egg temperature of embryonic American alligators, *Alligator mississippiensis*. *J. Comparative Physiology B.* 188:471-480.
- Price, E.R., and Dzialowski, E.M. (2018) Development of endothermy in birds: patterns and mechanisms. *J. Comparative Physiology B.* 188:373-391.
- Price, E.R., Sirsat, T.S., Sirsat, S.K.G., Curran, T., Venables, B., and Dzialowski, E.M. (2018) The membrane pacemaker hypothesis: novel tests during the ontogeny of endothermy. *J. Exp. Biol.* 221: jeb174466.
- Price, E.R., Sirsat, S.K.G., Sirsat, T.S., Venables, B.J., and Dzialowski, E.M. (2018) Rapid embryonic accretion of docosahexaenoic acid (DHA) in the brain of an altricial bird with an aquatic-based maternal diet. *J. Exp. Biol.* jeb.183533. <http://jeb.biologists.org/content/early/2018/05/31/jeb.183533>.
- Rao, X. and Dixon, R.A. (2018). Current models for transcriptional regulation of secondary cell wall biosynthesis in grasses. *Frontiers in Plant Science*. doi: 10.3389/fpls.2018.00399.
- Shulaev, V., and Isaac, G. (2018) Supercritical fluid chromatography coupled to mass spectrometry – A metabolomics perspective. 1092: 499-505. <https://www.sciencedirect.com/science/article/pii/S1570023218302903>.
- Sirsat, S.K.G. and Dzialowski, E.M. (2018) Ontogeny of skeletal and cardiac muscle mitochondria oxygen fluxes in two breeds of chicken. *Comparative Biochemistry and Physiology A.* 215: 20-27.

Sirsat, T.S., Crossley, D.A. II, Crossley, J., and Dzialowski, E.M. (2018) Thyroid hormone manipulation influences cardiovascular regulation in embryonic Pekin duck, *Anas platyrhynchos domestica*. *J. Comp. Physiol. B*. <https://doi.org/10.1007/s00360-018-1166-1>.

Sturtevant, D. and Chapman, K. D. (2018) Visualizing the Oilseed Lipidome. *INFORM* 29:21-24. http://www.informmagazine-digital.org/informmagazine/april_2018/MobilePagedReplica.action?pm=2&folio=20#pg22.

Thompson, M.M., Coe, B.H., Andrews, R.M., Cristol, D.A., Crossley, D.A. II, and Hopkins, W.A. (2018) Agricultural land use creates evolutionary traps for nesting turtles and is exacerbated by mercury pollution. *J. Exp. Zool.* doi: 10.1002/jez.2198.

Thompson, M.M., Coe, B.H., Andrews, R.M., Stauffer, D.F., Cristol, D.A., Crossley, D.A. II, and Hopkins, W.A. (2018) Major Global Changes Interact to Cause Male-biased Sex Ratios in a Reptile with Temperature-dependent Sex Determination. *Biological Conservation* 222: 64-74.

Wang, J., Hodes, G.E., Zhang, H., Zhang, S., Zhao, W., Golden, S.A., Bi, W., Menard, C., Kana, V., Leboeuf, M., Tian, S., Xie, M., Bregman, D., Pfau, M., Flanigan, M., Esteban-Fernandez, A., Yemul, S., Sharma, A., Ho, L., Dixon, R.A., Merad, M., Han, M-H., Russo, S.J. and Pasinetti, G.M. (2018). Epigenetic modulation of inflammation and synaptic plasticity promotes resilience against stress in mice. *Nature Comm.* 9:477. DOI: 10.1038/s41467-017-02794-5.

Yurchenko, O., Kimberlin, A., Mehling, M., Koo, A.J., Chapman, K.D., Mullen, R.T., Dyer, J.M. (2018) Response of high leaf-oil *Arabidopsis thaliana* plant lines to biotic or abiotic stress. *Plant Signaling Behavior*. e1464361: <https://doi.org/10.1080/15592324.2018.1464361>

Extramural Grants and Contracts

Developing and characterizing soybean cultivars with increased oil while maintaining protein and yield. Smith & Bucklin. Co-PIs: Ana Paula Alonso (University of North Texas, \$100,840); PI: McHale (Ohio State University); Other Co-PIs: Bacon (University of Arkansas), Chen (Missouri University), Clemente (University Nebraska-Lincoln), Mian (USDA-ARS).

Collaborative Research: Dimensions: Secondary metabolites as drivers of fungal endophyte community diversity. National Science Foundation - Dimensions of Biodiversity. Co-PI: Ana Paula Alonso (University of North Texas, \$518,566); PI: Slot (Ohio State University).

Seminars/Talks

A Putative Resistance Gene Homolog of RPW8.1 4 (HR4) is Required for Plant Defense Against the Green Peach Aphid. 15th Annual Graduate Student Research Day, Department of Biological Sciences, University of North Texas, April 19-20, 2018. Talk by Moon Twayana (PhD student); Co-author: Jyoti Shah. Moon Twayana received honorable mention for her oral presentation

Adaptive Consequences of Developmental Oxygen for Reptiles. Linköping University, Linköping Sweden May 2018. Invited Seminar by Dr. Dane A Crossley II.

Biosynthesis and Metabolic Engineering of Phenylpropanoid Natural Products for Plant Quality Improvement. Department of Biological Sciences, Texas A and M University, College Station. Invited talk by Rick Dixon, February 22 2018

Cotton's secret fiber: Manipulating lignin biosynthesis for bast development (Abstract #64). 20th Annual Texas National McNair Scholars Research Conference in Denton, February 22-25, 2018. Invited talk by Emmanuel Ortiz (McNair Scholar); co-authors Drs. Roisin C. McGarry and Brian G Ayre.

Current Applications of Next Generation Sequencing for Plant Research. Southern Section of the American Society of Plant Biologists, New Orleans, LA, March 24-26, 2018. Invited talk by Dr. Xiaolan Rao

Environmental Oxygen and Developmental Phenotypic Plasticity: Cardiovascular Phenotype in Reptiles. International Oxygen Symposium" In honor of the 80th birthday of Professor Roy Weber. Denmark May 2018. Invited Talk by Dr. Dane A Crossley II.

Function of Arabidopsis SEIPIN Proteins in Lipid Droplet Formation in Plant Cells. Midwest Plant Cell Dynamics Conference, Madison, WI, May 2018. Oral presentation by Yingqi Cai (Ph.D. Student) Co-authors, M.S. Greer, M. Pyc, S.K. Gidda, R.T. Mullen, J.M. Dyer and K.D. Chapman.

Functional and Molecular Characterization of Sucrose Transporters in Gossypium hirsutum. The 6th PanAmerican Plant Membrane Biology Workshop, University of British Columbia, Vancouver, Canada, June 24 – 28, 2018. Invited talk by Dr. Brian Ayre. Co-authors: Umesh P Yadav, Mearaj A Shaikh (Ph.D student), John Evers (Ph.D. student) Roisin C. McGarry.

Identification of candidate resistance metabolites to Leifsonia xyli subsp. xyli in sugarcane through metabolomic profiling. BDI Seminar Series presented by Dr. Fernanda R. Castro-Moretti. April 16th, 2018.

Lipid Droplet Biogenesis in Plants. Centro Nacional de Biotecnología-Consejo de Superior de Investigaciones Científicas (CNB-CSIC), Madrid, Spain, May 21, 2018. Invited Seminar by Dr. Kent Chapman.

Lipid Droplet Biogenesis in Plants. Laboratory of Membrane Biogenesis, Université de Bordeaux, Centre National de la Recherche Scientifique (CNRS), Bordeaux, France May 24, 2018. Invited Seminar by Dr. Kent Chapman.

Metabolic Pathways Leading to Industrially Relevant Fatty Acids. Interdisciplinary Plant Group Symposium on Advances in Plant Metabolism, Columbia, MO, May 30 - June 1, 2018. Invited talk by Dr. Ana Paula Alonso.

MS-Spectrometry based metabolomics for systems biology. 36th Informal Meeting on Mass Spectrometry. Koszeg, Hungary, May 6-9, 2018. Invited talk by Dr. Vladimir Shulaev

N-Acylethanolamines produce tissue- and lipid-specific transcriptome changes in Arabidopsis seedlings. Midwest Plant Cell Dynamics Meeting, Organelles III and Trafficking I Session, Madison, WI, May 31, 2018. Talk by Dr. Ashley E. Cannon. Co-author, Kent D. Chapman.

Novel Approaches for Enhancing Resistance to Fusarium Head Blight in Wheat. 15th Annual Graduate Student Research Day, Department of Biological Sciences, University of North Texas, April 19-20, 2018. Talk by Syeda Alam (PhD student); Co-author: Jyoti Shah and Nidhi Rawat.

Novel Insights Into Crude Oil and PAH Toxicity in Teleost Fishes. Society of Environmental Toxicology and Chemistry, South Central Regional Meeting, Junction, TX, April 27, 2018. Invited talk by Ed Mager.

Proposal, Thesis and Dissertation Writing. Oral presentation by Jyoti Shah at the UNT Graduate proposal, thesis and dissertation Writing workshop, April 14, 2018. Discovery Park Campus, Denton

Redesigning the Cotton Plant's Architecture to Improve Yield and Quality for Robot Harvesting. 2018 Precision Cotton Researcher's Meeting, Beltwide Cotton Conferences in San Antonio, TX, January 3-5, 2018. Invited talk by Dr. Brian G. Ayre; co-author Dr. Roisin C. McGarry.

Regulation of Lipid Droplet Accumulation in Plants. Department of Biological Sciences. Texas Women's University, Denton, USA, April 6, 2018. Invited Seminar by Dr. Kent Chapman.

Structural Insights into the Evolutionary Divergence of Acylethanolamide Signaling. Centro Nacional de Biotecnología-Consejo de Superior de Investigaciones Científicas (CNB-CSIC), Madrid, Spain, May 22, 2018. Invited Seminar by Dr. Kent Chapman.

The cisD Gene Family Regulates Physiological Germline Apoptosis Through ced-13 and the Canonical Cell Death Pathway in Caenorhabditis elegans. EMBO C. elegans Development, Cell Biology and Gene Expression, Programmed Cell Death Session, Barcelona, Spain, June 16, 2018. Oral Presentation by Skylar King. Co-authors, Chip Gray, Luhua Song, Rachel Nechushtai, Tina Gumienny, Ron Mittler and Pamela Padilla. Skylar King received an EMBO Travel Grant to present at this conference.

Understanding and Engineering Plant Metabolism for Forage. Michigan State University Plant Research Laboratory. Invited talk - Rick Dixon, March 19, 2018.

Understanding the Role of DAR1, a Putative O-fucosyl transferase, in Plant Systemic Immunity and Flowering. 15th Annual Graduate Student Research Day, Department of Biological Sciences, University of North Texas, April 19-20, 2018. Talk by Devasantosh Mohanty (Ph.D. student). Co-authors: Zulkarnain Chowdhury and Jyoti Shah. Devasantosh Mohanty won the best prize for oral presentation.

Conference Presentations

Agarwal, S.S., Burks, D.J., Azad, R.K., and Padilla, P.A. (2018). Phylogenetic and phenotypic analysis of detoxification enzymes, cytochrome P450 (CYPs) and UDP-glucuronosyl transferases (UGTs) in *Caenorhabditis elegans*. Genetics Society of America C. elegans Topics Meeting 2018, Aging, Metabolism, Stress, Pathogenesis, And Small RNAs in C. elegans, Madison, WI.

Archer, L., and Shah, J. (2018). Involvement of Actin Depolymerizing Factor 3 in plant defense against the green peach aphid, *Myzus persicae*. UNT Biology Graduate Students Research Day, Denton, TX.

Barba, J., Frederick, B.P., and Hughes, L.E. (2018). Annotation of *Streptomyces* Bacteriophages in the Newly Discovered Cluster BK1. Poster. 2018 Howard Hughes Medical Institute SEA-PHAGES Symposium, Ashburn, VA.

Cai, Y., Greer M.S., Pyc, M., Gidda, S.K., Mullen, R.T., Dyer, J.M. and Chapman, K.D. (2018). Function of *Arabidopsis* SEIPIN proteins in lipid droplet formation in plant cells. Midwest Plant Cell Dynamics Meeting. Madison, WI.

Cannon, A.E. and Chapman, K.D. (2018). *N*-Acylethanolamines produce tissue- and lipid-specific transcriptome changes in *Arabidopsis* seedlings. Midwest Plant Cell Dynamics Meeting 2018, Madison, WI.

Castro-Moretti, F.R., Gonzalez, H.C., Slot, J.C., Chaverri, P., Alonso, A.P. (2018). Phenolic compounds shape fungal endophyte diversity in Rubiaceae leaves. 14th Annual Conference of the Metabolomics Society, Seattle, WA

Cocuron, J.C., Tsogtbaatar, E., Alonso, A.P. (2018). High-throughput quantification of the levels and labeling abundance of free amino acids by liquid chromatography tandem mass spectrometry. Metabolomics 2018, 14th Annual Conference of the Metabolomics Society, Seattle, WA.

Devireddy, A.R., Zandalinas, S.I., Gómez-Cadenas, A., Blumwald, E., and Mittler, R. (2018). Coordinating the overall stomatal response of plants: Rapid leaf-to-leaf communication during light stress. Graduate Student Research Symposium, Texas Woman's University, Denton TX.

- El-Gebaly, F., Pang, M., Barros, J., Ayre, B.G., (2018). Virus-induced gene silencing in monocot plants as a tool to understand lignin biosynthesis. UNT Biology Graduate Students Research Day, Denton, TX.
- El-Gebaly, F. Pang, M., Barros-Rois, J., Ayre, BG. (2018). Virus-induced gene silencing in monocot plants as a tool to understand lignin biosynthesis. Southern Section American Society of Plant Biologists 2018 Annual Meeting, New Orleans, LA.
- Evers, J.F., Yadav, U.P., Shaikh M.A., McGarry R.C., Ayre B.G. (2018). Understanding the Role of the Sucrose Transporter Gene Family in Carbon Partitioning in Upland Cotton (*Gossypium hirsutum*). UNT Biology Graduate Students Research Day, Denton, TX.
- Hughes, K. (McNair Scholar), McGarry, RC., and Ayre, BG. (2018). Upland cotton (*Gossypium hirsutum*) genetic variation and bast fiber modification. 2018 Beltwide Cotton Conferences in San Antonio, TX
- Hughes, K. (McNair Scholar), McGarry, RC., and Ayre, BG. (2018). Upland cotton (*Gossypium hirsutum*) bast fiber modification. Abstract #39, 20th Annual Texas National McNair Scholars Research Conference in Denton, TX
- Lin Y-T., Alejos M., McGarry R.C., Ayre B.G. (2018). Genetic induction of somatic embryogenesis in *Gossypium hirsutum* using regulators of zygotic embryogenesis. UNT Biology Graduate Students Research Day, Denton, TX.
- Ortiz, E. (McNair Scholar), McGarry, RC, Ayre, BG. (2018). Cotton's secret fiber: Manipulating lignin biosynthesis for bast development. 2018 Beltwide Cotton Conferences in San Antonio, TX
- Robledo, J., Azad, R., and Padilla, P.A. (2018). Determination of mechanisms that regulate gene expression changes in response to a glucose-supplemented diet in *C. elegans*. Genetics Society of America *C. elegans* Topics Meeting 2018, Aging, Metabolism, Stress, Pathogenesis, And Small RNAs in *C. elegans*, Madison, WI.
- Ruiz, M., Nahar, S., and Padilla, P. (2018). A glucose diet impacts transgenerational phenotypes in *C. elegans*. Genetics Society of America *C. elegans* Topics Meeting 2018, Aging, Metabolism, Stress, Pathogenesis, And Small RNAs in *C. elegans*, Madison, WI.
- Schmitt, K., Burks, DJ., King, SD., Sturtevant, D., Azad, RK., and Padilla, PA. (2018). Analysis of sphingolipid profiles by MS/MS to gain a greater understanding of germline development and stress responses in *Caenorhabditis elegans*. Genetics Society of America *C. elegans* Topics Meeting 2018, Aging, Metabolism, Stress, Pathogenesis, And Small RNAs in *C. elegans*, Madison, WI.
- Shaikh, M., Yadav UP., Ayre BG. (2108). Understanding the crosstalk between carbohydrate transport and phosphate use in plants with enhanced phloem partitioning from source to sink. Federation of North Texas Area Universities Graduate Student 2018 Research Symposium at Texas Women's University, Denton, TX.
- Shulaev, V., Chitarrini, G., Gupta, H., Pujari, R., Vrhovsek, U., Mattivi, F., and Meitei, N.S. (2018). Lipid profiling of grape samples using orbitrap Velos Pro (2018) mass Spectrometer with SimLipid software. 66th ASMS Conference on Mass Spectrometry and Allied Topics. San Diego, CA.
- Shulaev, V, Choudhury F.K., Gujar, A., and Mittler, R. (2018). Metabolite profiling of Arabidopsis plants by GC-MS/MS technology. 42nd International Symposium on Capillary Chromatography and 15th GCXGC Symposium. Riva del Garda, Italy.
- Swanson, T., Yang, F., Arias, C., Alonso, A. (2018). Investigating the natural variation of Pennycress metabolome an emerging crop for aviation biofuel applications. 14th Annual Conference of the Metabolomics Society, Seattle, WA.

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