



Awards and Recognitions

Dr. Ruthanne "Rudi" Thompson, Associate Professor in Biological Sciences, is the recipient of the 2015 President's Council Teaching Award. This award was established to recognize a full-time, tenure/tenure-track faculty member for a record of teaching excellence at the University of North Texas for at least a five-year period.



Dr. Rudi Thompson



Tushar Sirsat

Tushar Sirsat, a graduate student in Associate Professor Ed Dzialowski's lab received 2nd place in the Scholander Award presented by the Comparative & Evolutionary Physiology Section of the American Physiological Society for his presentation at the Experimental Biology meeting, which was held in Boston in April 2015.

Laci Adolfo, graduate student in University Distinguished Research Professor Richard Dixon's lab, received a Graduate Student Support Grant to attend the Plant Metabolic Engineering Gordon Research Conference in Waterville Valley, New Hampshire, July 2015.

Drs. Jaime Barros-Rios, Luis Escamilla-Trevino and Xiaolan Rao, postdoctoral fellows in Dr. Richard Dixon's lab, received UNT Postdoc Travel Awards to attend the Plant Metabolic Engineering Gordon Research Conference in Waterville Valley, New Hampshire, July 19-24, 2015.

Dr. Lina Gallego-Giraldo, postdoctoral fellow in Dr. Richard Dixon's lab, received a UNT Postdoc Travel Award to attend the Plant Cell Walls Gordon Research Conference at Bentley University, Waltham, Massachusetts, July 12-17, 2015.

The Department of Biological Sciences held its annual Honors Reception at The Greenhouse Restaurant on April 20th, 2015. The undergraduate scholarship awardees for the 2015/16 academic year were recognized as well as our Outstanding Senior recipients and our Outstanding TAs for the 2014/15 academic year. The Department of Biological Sciences has made the following awards of undergraduate scholarships for the 2015/16 academic year:

Scholarship	Student
Tadd Lott Memorial Scholarship	Namgel Sherpa
Eugene Medford Scholarship	Pinky Gurung
Rollie and Sue Schafer Award	Zina Fang
Blair Scholarship	Lauryn Williams
Tracy Quay Memorial Scholarship	Stephanie Samuel
Gladys Crawford Scholarship	Lauryn Williams
Gladys Crawford Scholarship	Sumbul Shaikh
David Redden Pre-Professional Award	Bradley Osemwengie
David Redden Pre-Professional Award	Matthew Grey
David Redden Pre-Professional Award	Elizabeth Mathers
David Redden Pre-Professional Award	Elizabeth Cox
David Redden Pre-Professional Award	Pedro Pacheco
David Redden Pre-Professional Award	Sarah Manning
David Redden Pre-Professional Award	Duong Anh Dang
David Redden Pre-Professional Award	Sol Svensson



Also awarded at the Honors Reception were Outstanding Senior Scholarships to Delaram Mostafavi and Duong Anh Dang, and the Outstanding Teaching Assistant awards to Jessica Beckham, Richard Hale, and Thomas (Ty) Curran.

Other News

The Biology Graduate Student Association (BGSA) hosted the Biology Graduate Student Research Day on April 17th, 2015. Dr. John R Dorgan, Professor and Director, Institute for Advanced Composite Manufacturing Innovation, Chemical & Biological Engineering, Colorado School of Mines, delivered the keynote lecture "Advancement of the Science and Technology of Biobased Polymers, Polymer Membranes, and the Computer Simulation of Polymeric Materials" at this event, which was sponsored by the Department of Biological Sciences, the Graduate Student Council, and the Eagle Nest Funding. Biological Sciences graduate students presented their research in the form of oral and poster presentations. In the oral competition, **Hemalatha Sundaramoorthi** and **Amy Wynia**, were placed first and second, respectively. In the posters competition, **Mearaj Shaikh** finished at the top, the team of **Shaun Jones** and **Rohan Batlanki** were placed second, and **Garima Saxena** placed third.



Hemalatha
Sundaramoorthi



Mearaj Shaikh

Dr. Ruthanne "Rudi" Thompson, Associate Professor in Biological Sciences, was appointed Co-director of the Teach North Texas program at UNT.



Dr. Kent Chapman

Dr. Kent Chapman, Regents Professor, was appointed as Executive Editor for the journal "Progress in Lipid Research"- An Elsevier review-oriented journal featuring topics in biochemistry, molecular biology, biophysics and chemistry of lipids with a 5-y impact factor of 12.20. <http://www.journals.elsevier.com/progress-in-lipid-research/>



Dr. Jeff Johnson

Dr. Jeff Johnson, Associate Professor in Biological Sciences, was awarded a Visiting Erskine Fellowship at University of Canterbury in New Zealand during May and June. This fellowship allowed Dr. Johnson to interact and develop collaborations with researchers at University of Canterbury and also teach an undergraduate course focused on Evolution.

UNT Biological Sciences alumnus **Dr. Nicole Palenske** (PhD 2011; Advisor: Dr. Ed Dzialowski) was promoted to Associate Professor with Tenure at Central College in Pella, IA



Dr. Nicole Palenske

Thesis and Dissertations

Jantana Keereetaweeep defended her Ph.D. dissertation in April 2015. Dissertation title: *Metabolism and action of polyunsaturated N-acyl ethanolamines in Arabidopsis thaliana seedlings*. Jantana's major professor was Dr. Kent Chapman. In June 2015, Jantana moved to Long Island, NY where she is now a postdoctoral associate with Dr. John Shanklin at the US Department of Energy's Brookhaven National Laboratory.



Jantana
Keereetaweeep



Luke Driver

Luke Driver successfully defended his PhD dissertation in June 2015. Dissertation title: *Dynamics of stream fish metacommunities in response to drought-induced fragmentation and reconnection*. Dr. David J. Hoeinghaus, Assistant Professor in Biological Sciences was his advisor. Luke is now working for the US Geological Survey in Little Rock, Arkansas.

Jessica Treviño successfully defended her MS thesis in June 2015. Thesis title: *Effects of macrophyte functional diversity on taxonomic and functional diversity and stability of tropical floodplain fish assemblages*. Dr. David J. Hoeinghaus, Assistant Professor in Biological Sciences was her advisor. Jessica was a U.S. Fulbright Scholar, and is now working for the US Geological Survey in Fort Worth, Texas.



Jessica Treviño

New Faculty/Staff Appointments and Visiting Scientists

Dr. Ratnesh Chaturvedi joined Dr. Richard Dixon's lab as a Postdoctoral Research Associate and is working on plant-based sesquiterpene biofuels through a grant with Chromatin, Inc. (DOE-APRAe). Dr. Chaturvedi received his PhD in Plant Molecular Biology and Biochemistry from the National Botanical Research Institute, Lucknow, UP, India.

Dr. Desalegn Serba joined Dr. Richard Dixon's lab as a Postdoctoral Research Associate. Dr. Serba received his PhD in Plant Breeding and Genetics from the University of Nebraska-Lincoln in Nebraska, his MSc from the University of Agriculture Sciences in Bangalore, India and his BSc from Alemaya University of Agriculture in Ethiopia.

Recent Publications

Keereetaweeep J., Blancaflor, E.B., Hornung, E., Feussner, I., and Chapman, K.D. (2015) Lipoxygenase derived 9-hydro(pero)xides of linoleoyl ethanolamide interact with ABA signaling to arrest root development during Arabidopsis seedling establishment. Plant J. Apr 82(2):315-27. doi: 10.1111/tpj.12821

Eme, J., and Crossley II, D.A. (2015) Short Communication: Chronic hypercapnic incubation increases relative organ growth and reduces blood pressure of embryonic American alligator (*Alligator mississippiensis*). Comp. Biochem. Physiol. A 182:53-57.

- Makandar, R., Nalam, V.J., Chowdhury, Z., Sarowar, S., Klossner, G., Lee, H., Burdan, D., Trick, H.N., Gobbato, E., Parker, J., and Shah, J. (2015) The combined action of *ENHANCED DISEASE SUSCEPTIBILITY1*, *PHYTOALEXIN DEFICIENT4* and *SENESCENCE-ASSOCIATED101* promotes salicylic acid-mediated defenses to limit *Fusarium graminearum* infection in *Arabidopsis thaliana*. *Mol. Plant-Microbe Interact.* Apr 27. [Epub ahead of print] <http://apsjournals.apsnet.org/doi/pdf/10.1094/MPMI-04-15-0079-R>
- Schulwitz, S.E., Chumchal, M.M., and Johnson, J.A. (2015) Mercury concentrations in birds from two atmospherically contaminated sites in north Texas, USA. *Archives of Environmental Contamination and Toxicology* Jul 3. [Epub ahead of print] <http://link.springer.com/article/10.1007/s00244-015-0189-9>
- Rhen, T., Fagerlie, R., Schroeder, A., Crossley II, D.A., and Lang, J. (2015) Molecular and morphological differentiation of testes and ovaries in relation to the thermosensitive period of gonad development in the snapping turtle, *Chelydra serpentina*. *Differentiation* 89:31-41.
- Jonker, S.S., Giraud, G.D., Espinoza, H.M., Davis, E.H., and Crossley II, D.A. (2015) The Effects of Chronic and Acute Hypoxia on Cardiac Function in Fetal Chickens. *Am. J. Physiol. Regulatory, Integrative, and Comparative Physiology.* 308:R680-R689.
- Crossley II, D.A., Wearing, O., Platzack, B., Hartzler, L., and Hicks, J.W. (2015) Changes in cardiovascular regulation during simulated hibernation in the red-eared slider (*Trachemys scripta*). *J. Comp. Physiol B.* 185:401-411.
- Mersereau, E.J., Poitra, S.L., Espinoza, A., Crossley II, D.A., and Darland, T. (2015) The effects of cocaine on heart rate and electrocardiogram in zebrafish (*Danio rerio*). *Comp. Biochem. Physiol. C* 172-173:1-6.
- Sartori, M.R., Taylor, E.W., Abe, A.S., and Crossley II, D.A. (2015) An appraisal of the use of an infrared digital monitoring system for long-term measurement of heart rate in reptilian embryos. *Comp. Biochem. Physiol. A* 188:17-21.
- Sartori, M.R., Leite, C.A.C., Abe, A.S., Crossley II, D.A., and Taylor, E.W. (2015) The progressive onset of cholinergic and adrenergic control of heart rate during development in the green iguana, *Iguana iguana*, *Comp. Biochem. Physiol. A.* 188:1-8.
- Nalam, V.J., Alam, S., Keereetawee, J., Venables, B., Burdan, D., Lee, H., Trick, H.N., Sarowar, S., Makandar, R., and Shah, J. Facilitation of *Fusarium graminearum* infection by 9-lipoxygenases in *Arabidopsis* and wheat. (2015) *Mol. Plant-Microbe Interact.* June 15 (Epub ahead of print) <http://apsjournals.apsnet.org/doi/pdf/10.1094/MPMI-04-15-0096-R>

Extramural Grants and Contracts

Investigating the effect of oil spills on the environment and public health. Gulf of Mexico Research Initiative. PI: D. Crossley; Co-PI: W. Burggren and A. Roberts; \$2,700,000

Quantification of Alligator Gar recruitment dynamics using a river-stage specific floodplain inundation model. Gulf Coastal Prairie Landscape Conservation Cooperative. PI: D.J. Hoeinghaus (UNT), Co-PIs: T. Hardy and J. Jensen (TX State), K.O. Winemiller (TAMU), A.A. Pease (TX Tech); \$199,973.

The UNT-UAEM Consortium to provide novel information and student training on the maturation of cardiovascular function in a marine sea turtle with implications for species conservation. University of North Texas- Universidad Autónoma del Estado de México Joint Seed Fund For Innovation. PI: D. Crossley, Co-PI: Paz, \$18,428.

Targeting host defense mechanisms for enhancing FHB resistance in wheat. US Department of Agriculture-ARS, PI: Shah (UNT); Co-PI: Trick (Kansas State University), \$43,732.

Seminars/Talks

Effects of a water conservation education program on water use in single-family homes in Dallas, TX, Mind the Gap! Moving from Awareness to Action session. The World Environmental Education Conference (WEEC), Gothenburg, Sweden, June 28th. Invited presentation by Dr. Ruthanne (Rudi) Thompson; Co-author, Victoria Faubion (Ph.D. graduate).

Switchgrass TOP line and system analysis. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee, June 15-17, 2015. Invited talk by Dr. Richard Dixon.

The effects of probiotics on growth, gastrointestinal morphology and metabolism in juvenile Mozambique tilapia *Oreochromis mossambicus*. World Aquaculture Society conference, Orleans. Talk by Michael Anderson, graduate student in Dr. Ione Hunt von Herbing lab

Lignin. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee, June 15-17, 2015. Invited talk by Dr. Richard Dixon.

Switchgrass lignin synthesis, C lignin and carbon fibers. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee, June 15-17, 2015. Invited talk by Dr. Fang Chen.

Mapping the phospholipid distribution in three dimensions in Arabidopsis seeds. European Symposium on Plant Lipids. Harpendon, UK, July 5-8, 2015. Invited talk by Dr. Kent Chapman. Co-authors, Drew Sturtevant (Ph.D. Student), Maria Duenas, Young-Jin Lee (Iowa State University).

Visualizing lipid metabolites in plant tissues by mass spectrometry. Gordon Research Conference in Plant Metabolic Engineering, Waterville Valley, NH, July 19-24. Invited talk by Dr. Kent Chapman.

Conference Presentations

- Sirsat, T.S. Sirsat, S.K., Crossley, J., and Dzialowski, E.M. (2015). Effects of Thyroid Hormone Manipulations on Growth and Metabolism of American Alligator Hatchlings. Experimental Biology, Boston.
- Escamilla-Trevino, L.L., Shen, H., and Dixon, R.A. (2015). Characterizing the Nucleotide-Sugar Transporter (PvUTR6) in Switchgrass. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Fiori, L., Figueiredo, B.R.S., Hoeinghaus, D.J., and Benedito, E. (2015). A presença de peixes piscívoros modifica a taxa de predação sobre populações de invertebrados (Presence of piscivorous fishes affects predation rate on invertebrate populations). XV Congresso Brasileiro de Limnologia (XV Brazilian Limnology Conference), June 2015, Maringá, Brazil.
- Jensen, B., Boukens, B.J., Crossley II, D.A., Elsey, R., Sedmera, D., and Christoffels, V.M. (2015). A specified atrioventricular conduction system in the American alligator heart. Weinstein Cardiovascular Development Conference, Boston, MA.
- Crego, R. D., Jiménez, J. E., Rozzi, R. (2015). Invasive expansion of the American Mink (*Neovison vison*) in the Cape Horn Biosphere Reserve, Chile. *Anales Instituto Patagonia*. 43: 157-162. <http://institutodelapatagonia.cl/index.php/analespatagonia/article/view/686>
- Hedrick, MS, Streicher, J.W., Crossley II, D.A., and Fujita, M.K. (2015). Maximal metabolic rates of the Barking frog (*Craugastor augusti*). Experimental Biology, Boston, MA.
- Shartau, R.B., Kohl, Z.F., Crossley II, D.A., and Brauner, C.J. (2015). Acid-base regulation during embryonic development in the snapping turtle (*Chelydra serpentina*) Canadian Zoological Society Meeting, Calgary CA.
- Crossley II, D.A. (2015). Impact of the developmental plasticity on physiological phenotype of reptiles. Emerging Models for Studying the Cardiovascular System symposium held during the annual meeting in Society for Experimental Biology. Prague, CK June 30th to July 3rd 2015.
- Natzke, J., Dumitrache, A., Rodriguez, M., Yee, K.L., Thompson, O.A., Poovaiah, C.R., Shen, H., Mazarei, M., Baxter, H.L., Engle, N.L., Ziebell, A., Sykes, R.W., Gjersing, E., Fu, C., Wang, Z-Y., Davis, M.F., Tschaplinski, T.J., Stewart, C.N., Dixon, R.A., Mielenz, J.R., Davison, B.H., and Brown, S.D. (2015). Comparison of multiple generations of Top-line transgenic switchgrass with reduced recalcitrance for enhanced bioconversion to fuels: Carbohydrate composition and SHF ethanol yields. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Baxter, H., Mazarei, M., Poovaiah, C., Yee, K., Rodriguez, M., Thompson, O., Fu, C., Shen, H., Turner, G., Sykes, R., Decker, S., Davis, M., Mielenz, J., Davison, B., Dixon, R.A., Wang, Z-Y., and Stewart, N. (2015). Three-year field experiments of switchgrass TOPILines COMT and MYB4. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Hatcher, C., Mazarei, M., Alexander, L., Baxter, H., Haynes, E., Dixon, R.A., Wang, Z-Y., and Stewart, N. (2015). Development of hybrid switchgrass for improved biomass traits and field assessment. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Bryan, A.C., Guo, H-B., Tschaplinski, T., Barros-Rios, J., Singan, V., Lindquist, E., Engle, N., Yee, K., Sykes, R., Jawdy, S.S., Gunter, L.E., Thompson, O., DiFazio, S.P., Evans, L.M., Dixon, R.A., Tuskan, G.A., Chen, J-G., and Muchero, W. (2015). GWAS analysis in *Populus trichocarpa* uncovers a novel regulator of tryptophan, phenylpropanoid and flavonoid pathways. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Serba, D.D., Uppalapati, S.R., Mukherjee, S., Krom, N., Tang, Y., Mysore, K.S., Dixon, R.A., and Saha, M.C. (2015). Unraveling switchgrass ecotype variation using RNASeq transcriptome analysis. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Gjersing, E., Donohoe, B., Rottmann, W., Hinchee, M., Foutz, K., Dixon, R.A., Chen, F., Ziebell, A., Katahira, R., Sykes, R.W., Foster, C., Decker, S.R., and Davis, M.F. (2015). Characterizing cell wall cross linking and/or rntanglement in reduced recalcitrance feedstocks. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Chen, X., Ma, Q., Mao, X., Tang, Y., Rao, X., Dixon, R.A. and Xu, Y. (2015). Genome-scale identification of cell-wall related genes in switchgrass through comparative genomics and transcriptomic analyses. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.
- Chen, X., Rao, X., Ma, Q., Shen, H., Shang, Y., Dixon, R.A., and Xu, Y. (2015). Co-expression analysis of lignin biosynthetic genes for gene regulatory networks in rice, switchgrass, and Arabidopsis. BioEnergy Science Center Retreat—2015, Chattanooga, Tennessee.

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