



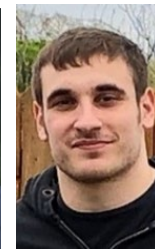
Awards and Recognition

Dr. Jannon Fuchs, Professor in Biological Sciences, who has been active in mentoring undergraduate and Texas Academy of Mathematics and Science (TAMS) students, and Goldwater scholars was honored with a scholarship in her name by the family of a TAMS student. '[Dr. Jannon Fuchs and the TAMS Faculty Scholarship](#)', which will be awarded annually to a TAMS student who has excelled in Life Sciences, speaks to the excellence of a superb student and that of an outstanding faculty mentor. Julia Camacho who worked under the mentorship of Dr. Helen Wang in the Math Department, was the first recipient of this scholarship. Drawing upon genetic and clinical data from patients, Julia has helped develop a computational method that utilizes artificial intelligence to predict the development of secondary central-nervous-system cancer.

Fabrizio Bonatesta, graduate student with Assistant Professor Dr. Ed Mager was selected as a Gulf of Mexico Research Initiative (GoMRI) Scholar, a program by the GoMRI that recognizes outstanding graduate students and the vital research they contribute to improve understanding about the damage, response, and recovery following the Deepwater Horizon oil spill.



Jannon Fuchs



Fabrizio Bonatesta

Promotions and New Appointments

Dr. Mark McLellan joined UNT as Professor with Tenure in the Department of Biological Sciences and Vice President of Research and Innovation. Dr. McLellan will lead the university in developing and implementing new strategies in collaboration with the Office of the Provost and others to transform and expand UNT's research portfolio. He also is charged with overseeing UNT's Strategic Plan for Research and with advancing the university's goal to become a recognized National Research University.

Congratulations to **Dr. Amie Lund** on her promotion to Associate Professor with Tenure and to **Dr. Jill Dewey** on her promotion to the rank of Senior Lecturer. Dr. Lund's research interests include investigating the effects of environmental (air) pollutants on progression of cardiovascular disease and neurovascular blood brain barrier disruption. Dr. Dewey, in addition to her role as a Lecturer, serves as senior undergraduate adviser in the Department.

Professor **Dr. Pamela Padilla** was appointed as the new Associate Vice President of Research and Innovation. In this new role Dr. Padilla will serve as the overall lead from the Office of Research and Innovation for management of UNT core research facilities on campus. In addition, she will chair the Research Space Adjudication Subcommittee (RSAS) and oversee research development activities for the Office of Research & Innovation.

Associate Professor **Dr. David Hoeninghaus** was appointed Associate Chair of the Department of Biological Sciences. Among other responsibilities, as Associate Chair Dr. Hoeninghaus will lead our efforts to meet the state mandated Institutional Effectiveness requirements, serve as the contact person for grade appeals, and supervise the development and implementation of assessment protocols in our undergraduate classes. Dr. Hoeninghaus conducts research on fish ecology, and community and ecosystem ecology of tropical and temperate aquatic ecosystems.

Professor **Dr. Aaron Roberts** was appointed Director of the Advanced Environmental Research Institute (AERI). He takes over the leadership of AERI from Dr. Sam Atkinson who served as the Director of AERI since its inception. The mission of AERI is to foster, facilitate and conduct science-based interdisciplinary environmental research that provides an understanding of how human actions impact the environment, and then use that knowledge to suggest scientific, engineering, policy and/or educational solutions to actual environmental problems.

Associate Professor **Dr. Rudi Thompson** was appointed Executive Director of the Center for Learning, Experimentation, Application, and Research (CLEAR). CLEAR supports the University's goals of providing the best undergraduate educational experience in Texas and providing a superior graduate education by working closely with faculty to maximize their teaching effectiveness regardless of the mode of instructional delivery.

Dr. Calvin Henard joined the department of Biological Sciences as an Assistant Professor with expertise in microbial physiology and metabolism. Dr. Henard, who is affiliated with the BioDiscovery Institute, received a B.S. in Molecular Biology from Tarleton State University in Stephenville, Texas and a Ph.D. in Microbiology from the University of Colorado Anschutz Medical Campus in Aurora, Colorado. Following his doctoral studies, Dr. Henard joined the National Renewable Energy Laboratory's National Bioenergy Center as a postdoctoral researcher where he used his expertise in molecular microbiology and metabolic engineering to develop algal, yeast, and bacterial biocatalysts for conversion of renewable substrates to biofuels and bioproducts. In 2016, Dr. Henard was promoted to a staff scientist at the National Renewable Energy Laboratory to lead research focused on the biological conversion of waste gases to platform chemicals. At UNT, Dr. Henard's lab leverages advanced molecular and synthetic biology to develop biotechnologies for the conversion of one-carbon substrates to fuels and chemicals using methanotrophic bacteria.



Dr. Amie Lund



Dr. Jill Dewey



Dr. Mark McLellan



Dr. Aaron
Roberts



Dr. David
Hoeninghaus



Dr. Rudi
Thompson



Dr. Pamela Padilla



Dr. Calvin Henard



Katy Tunks



Heather
Tunnell



Shantelle
McDonald



Deborah (Deb)
Douglas

Heather Tunnell was appointed Student Program Coordinator. In her new role, Heather will assist the Associate Chair with review and coordinating curriculum updates, oversee and distribute scholarships, serve as the primary program liaison for graduate admissions and TA application processes. Heather will also coordinate Biology Advising Office operations, assist with undergraduate advising, including transfer credit evaluations, scheduling, enrollment/registration requests, and administrative support.

Donald “DJ” Lynch was appointed Inventory/Stockroom Specialist. In this new role, DJ will oversee the functioning of the stockroom. He will lead stockroom activities including receiving, stocking, recordkeeping, and distribution of materials, monitor capital equipment inventory, prepare requisitions and purchase orders for routine and special request items. Processes invoices, coordinate purchases with vendors, train and supervise student assistants.

Kathryn “Katy” Tunks joined the department as Stockroom Associate. Katy has been with UNT in another role as a Video Helpdesk Assistant with CLEAR. In her role as the Stockroom Associate, Katy provides customer service by assisting faculty, students and lab supervisors with purchasing, receiving and distributing merchandise, maintaining stockroom inventory, assisting users with liquid nitrogen, copier/printer related activities, and mail services.

Deborah “Deb” Douglas joined the department as Office Support Associate. She comes from Texas A&M in Galveston, TX. In this role she assisted faculty and the Department with travel and other office duties. She has been with the State system for 16 years. As Office Associate, among other services, Deb will assist Biology faculty, staff and graduate students with travel, conference room scheduling, and textbook orders. She will also manage the Department website and the publication of the Department newsletter BioSphere.

Shantelle McDonald joined Advanced Environmental Research Institute (AERI) as Office Support Associate. Shantelle comes from Moscow, ID. Her role will include assisting with travel and expenses for faculty, staff, and students affiliated with AERI. She is excited to continue learning about the administrative process as well as supporting the fascinating research undertaken by students and faculty here at UNT. In the office and in life, she is driven by insatiable curiosity and passion for helping others.

Rachel Leads took over as the President of the Biology Graduate Student Association (BGSA) committee for FY2020. Joining Rachel on the BGSA committee are **Vaidehi Pusadkar** (Vice President), **Cameron Emadi** (Secretary), **Cory Green** (Treasurer), and **Sara McGillewie** (Social Media Representative). Rachel and Cameron are graduate student in Dr. Aaron Roberts' aquatic toxicology lab, Corey and Sara are graduate students in Dr. David Hoeinghaus's aquatic community and ecosystem ecology lab, Vaidehi is a graduate student in Dr. Rajeev Azad's bioinformatics lab, and Cameron is a graduate student in Dr. Ed Mager's aquatic toxicology and fish physiology lab.



BGSA Committee FY2020

Extramural Grants and Contracts

Developing Resistance to Fusarium Head Blight in Wheat. US Department of Agriculture. PI: Jyoti Shah, \$63,650.

Elucidating the cellular machinery for lipid storage in plants, US Department of Energy Basic Energy Sciences- Physical Biosciences. PIs - Kent Chapman (UNT); Co-PIs - Robert Mullen (Univ of Guelph, Ontario, Canada), and John Dyer (USDA-ARS Maricopa, AZ), \$ 790,000.

Embryogenic Cell Culture Screening System for Herbicide Tolerance, BASF Plant Science, LP. PI – Kent Chapman (UNT), \$42,992 (supplement).

Genetic Manipulation of Cottonseed Protein Reserves, Cotton Incorporated. PI – Kent Chapman (UNT) \$30,000 (supplement).

Functional analysis of candidate genes involved in oil storage and stability in Pennycress, US Department of Energy- Biological Environmental Research Division. PI - Ana Alonso (UNT); Co-PIs - Kent Chapman (UNT) and Erich Grotewold (Michigan State), \$ 2,388,159.

Pollinative Prairie Phase II, a native Texas prairie habitat reconstruction at the University of North Texas. We Mean Green Fund. PI: Baxter-Slye (Biology and AERI) and Thompson (Philosophy), \$22,000.

Publications

Brun, A., Fernández Marinone, G., Price, E.R., Nell, L.A., Simões, B.M.V., Castellar, A., Gontero-Fourcade, M., Cruz-Neto, A.P., Karasov, W.H., and Cavedes-Vidal, E. (2019) Morphological bases for intestinal paracellular absorption in bats and rodents. *Journal of Morphology* 280: 1359-1369.

Chapman, K.D., Aziz, M., Dyer, J.M., Mullen, R.T. (2019) Mechanisms of lipid droplet biogenesis. *Biochemical Journal* 476 (13): 1929-1942.

Cocuron, J.C, Koubaa, M, Kimmelfield, R, Ross, Z, Alonso, A.P (2019) A combined metabolomics and fluxomics analysis identifies steps limiting oil synthesis in maize embryos. *Plant Physiol.* pii: pp.00920.2019. doi: 10.1104/pp.19.00920).

Dongus, J.A., Bhandari, D.D, Patel, M., Archer, L., Dijkgraaf, L., Deslandes, L., Shah, J., and Parker, J.E. Arabidopsis PAD4 lipase-like domain is a minimal functional unit in resistance to green peach aphid. *BioRxiv* doi: <https://doi.org/10.1101/769125>.

Elmer, F., Kohl, Z.F., Johnson, P.T.J. et al. Coral Reefs (2019) Black spot syndrome in reef fishes: using archival imagery and field surveys to characterize spatial and temporal distribution in the Caribbean Coral Reefs.

Greer, J., Andrzejczyk, N., Mager, E., Stieglitz, J., Benetti, D., Grosell, M. and Schlenk, D. (2019) Whole-transcriptome sequencing of epidermal mucus as a novel method for oil exposure assessment in juvenile mahi-mahi (*Coryphaena hippurus*). *Environmental Science & Technology Letters*. 6, 538-544.

Ha, C.M, Fine, D., Bahtia, A., Rao, X., Martin, M.Z., Engle, N., Wherritt, D.J., Tschaplinski, T.J., Sumner, L.W. and Dixon, R.A. (2019). Ectopic defense gene expression is associated with growth defects in *Medicago truncatula* lignin pathway mutants. *Plant Physiology* 181: 63-84.

Heuer, R, Galli, G., Shiels, H., Fieber, L., Cox, G., Mager, E., Stieglitz, J., Benetti, D., Grosell, M., and Crossley, D.A. (2019). Deepwater Horizon crude oil on mahi-mahi *Coryphaena hippurus* heart cell function. *Environmental Science & Technology* 53 (16):9895-9904. Impact factor 6.635.

Huseby, C.J, Hoffman, C.N, Cooper, G.L, Cocuron, J.C, Alonso, A.P, Thomas, S.N, Yang, A.J, Kuret, J. (2019) Quantification of Tau protein lysine methylation in aging and Alzheimer's disease. *J Alzheimers Dis.* doi: 10.3233/JAD-190604.

- Jiménez, J.E. (2019) [The Darwin's fox: a story full of surprises.] Pp. 383-392, in Smith-Ramírez, C. and Squeo, F. (eds.), 2nd ed. [History, biodiversity, and ecology of the Chilean coastal forests.] Universidad de Los Lagos Press, Osorno, Chile.
- Kohl, Z.K., Calhoun, D.M., Elmer, F.E., Peachey, B.J., Leslie, K.L., Tkach, V., Kinsella, J.M., Johnson, P.T.J. (2019) Black spot syndrome in Caribbean fishes linked to trematode parasite infection (*Scaphanocephalus expansus*). *Coral Reefs*.
- Price, A.M., Doner, N.M., Gidda, S.K., Jambunathan, S., James, C.N., Schami, A., Yurchenko, O., Mullen, R.T., Dyer, J.M., Puri, V., Chapman, K.D. (2019) Mouse Fat-Specific Protein 27 (FSP27) expressed in plant cells localizes to lipid droplets and promotes lipid droplet accumulation and fusion. *Biochimie*. <https://doi.org/10.1016/j.biochi.2019.08.002>. Special Issue—Lipid Droplet Biogenesis.
- Rao, X. and Dixon, R.A. (2019). Co-expression networks for plant biology: why and how. *Acta Biochimica et Biophysica Sinica* 2019, 1-8. doi: 10.1093/abbs/gmz080.
- Reynolds K. A., Smith, B., and Crossley, D.A. (2019) Regulation of blood flow in the pulmonary and systemic circuits during submerged swimming in common snapping turtle (*Chelydra Serpentina*). *Journal of Experimental Biology*. 222(16).
- Reynolds K. A., Smith, B., and Crossley, D.A. (2019) Cardiac function and regulation during swimming in common snapping turtle (*Chelydra Serpentina*). *Journal of Experimental Biology* 222: doi: 10.1242/jeb.205211.
- Romsdahl, T., Shirani, A., Minto R.E., Zhang, C., Cahoon, E.B., Chapman, K.D., Berman, D. (2019) Nature-Guided Synthesis of Advanced Bio-Lubricants. *Nature Scientific Reports* 9: 11711. <https://www.nature.com/articles/s41598-019-48165-6>.
- Sartori M.R., Kohl, Z.F., Taylor, E.W., Abe, A.S., and Crossley, D.A. II (2019) Blood flow distribution in embryonic common snapping turtles *Chelydra Serpentina* (Reptilia; Chelonia) during acute hypoxia and α -adrenergic regulation. *Journal of Comparative Biochemistry and Physiology* doi: 10.1016/j.cbpa.2019.110575.
- Schlenker, L., Welch, M., Meredith, T., Mager, E., Lari, E., Babcock, E., Pyle, G., Munday, P., and Grosell, M. (2019) Damsels in distress: the effect of oil exposure on behavior and olfaction in bicolor damselfish (*Stegastes partitus*). *Environmental Science & Technology*. 53(18), 10993-11001.
- Smith, B., Crossley, J.L., Elsey, R.M., Hicks, J.W., Crossley, D.A. II (2019) Developmental oxygen preconditions cardiovascular function response to acute hypoxic exposure and maximal β -adrenergic stimulation of anesthetized juvenile American alligators (*Alligator mississippiensis*). *Journal of Experimental Biology*. doi: 10.1242/jeb.205419.
- Smith-Ramírez, C., Tellier, S., Jiménez, J.E., Barahona-Segovia, R.M., Parra, L.E., Vera, A. and Jerez, V. (2019) [Endemic plants and animals of the Chilean Coastal Mountain Range.] Pp. 393-416, in Smith-Ramírez, C. and Squeo F. (eds.), 2nd ed. [History, biodiversity, and ecology of the Chilean coastal forests.] Universidad de Los Lagos Press, Osorno, Chile.
- Stoekman, A.K., Cai, Y., Chapman, K.D. (2019) iCURE (iterative course-based undergraduate research experience): A case-study. *Biochemistry and Molecular Biology Education*. 47(5): 565-72. <https://doi.org/10.1002/bmb.21279>.
- Tapscott, T., Guarnieri, M. T., and Henard, C. A. (2019). Development of a CRISPR/Cas9 System for *Methylococcus capsulatus* In Vivo Gene Editing Appl. Environ. Microbiol. 85. (11), DOI: 10.1128/AEM.00340-19.
- Thompson, C.N., Hendon, B.R., Mishra, D., Rieff, J.M., Lowery, C.C., Lambert, K.C., Witt, T.W., Oswald, S.J., Bechere, E., Smith, C.W., Cantrell, R.G., Kelly, B.R., Imel-Vise, R.K., Chapman, K.D., Dowd, M.K., Auld, D.L. (2019) Cotton (*Gossypium hirsutum* L.) mutants with reduced levels of palmitic acid (C16:0) in seed lipids. *Euphytica*. 215(6): 112.
- Yu, K., Jun, J. H., Duan, C. and Dixon, R.A. (2019). VvLAR1 and VvLAR2 are bi-functional enzymes for proanthocyanidin biosynthesis in grapevine. *Plant Physiology* 180, DOI: <https://doi.org/10.1104/pp.19.00447>.
- Wood, C., Ruhr, I., Schauer, K., Wang, Y., Mager, E., McDonald, D., Stanton, B., and Grosell, M. (2019) The osmorepiratory compromise in the euryhaline killifish: water regulation during hypoxia. *Journal of Experimental Biology*. 222(18) doi: 10.1242/jeb.204818.
- Wynia, A.L., Jiménez, J.E. (2019) Preliminary assessment of the influence of larvae availability on the foraging behavior of Magellanic Woodpeckers. *Bosque*. 40: 81-86.
- Wynia, A.L., Rolland, V. and Jiménez, J.E. (2019) Improved Campephiline detection: an experiment conducted with the Magellanic Woodpecker. *Ecology and Evolution* DOI: 10.1002/ece3.5671.
- Wynia, A.L., Rolland, V., Jiménez, J.E. (2019) A novel device used to detect woodpeckers: an experiment conducted with the Magellanic Woodpecker. *Ecology and Evolution*. 00:1–10.

Seminars/Talk

- A Biodesign Strategy for Improving Oil Content in a Promising Alternative Source of Jet-fuel, Pennycress. European Symposium on Plant Lipids, Marseille (France), July 2019. Invited talk by Ana P. Alonso.
- A putative R gene *RESISTANT TO MYZUS PERSICAE* is required for Arabidopsis defense against the green peach aphid. CIPA Early Career Scientist Symposium. Stanford University, Palo Alto, CA, August 2, 2019. Invited talk by Moon Twayana.
- A. Role of a putative immune receptor in Arabidopsis defense against the green peach aphid. *Plant Biology* 2019, San Jose, CA, August 3-7, 2019. Talk by Moon Twayana, J. Shah (co-author).
- Capturing Genetic Variation in Cottonseed Constituents to Enhance Value. 2019 Cotton Breeder's Tour- Cotton Incorporated, College Station, TX July 22, 2019. Invited talk by Dr. Kent Chapman.
- Effects of Deepwater Horizon crude oil exposure on the developing teleost kidney. Bonatesta, F., Price, E., Greer, J., Xu, E., Schlenk, D., and Mager, E. Society for Experimental Biology Annual Meeting, Seville, Spain, July 2019.
- Heterogeneity of Neutral Lipid Storage in Jojoba Embryos. 9th European Symposium on Plant Lipids, Marseille, France, July 8, 2019. Invited talk by Dr. Kent Chapman.

Mapping the Pathways Leading to Industrially Relevant Fatty Acids in Alternative Crops. McCarter Lecture Series, Washington State University, Pullman, WA, September 2019. Invited talk by Ana P Alonso.

Role of vertebrates as frugivores and as seed dispersers, Ph.D. and M.S. programs in Sciences, Conservation and Management of Natural Resources, Universidad de Los Lagos, Chile. Talk by J.E. Professor.

Structural Insights into the Evolutionary Divergence of Acylethanolamide Signaling. Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Beijing, China, August 20, 2019. Invited seminar given by Kent Chapman.

Tracking the Flow of Carbon in *Lesquerella* (*Physaria fendleri*), an Emerging Crop Producing Hydroxy Fatty Acids. European Symposium on Plant Lipids, Marseille (France), July 2019. Invited talk by Jean-Christophe Cocuron.

Undergraduate Cell Biology Short Course. Huazhong Agricultural University (HZAU), Wuhan, China, August 12-16, 2019. Invited lecture course given by Kent Chapman.

Undergraduate Students Report Cognitive Gains and Scientific Career Interests After Screening for N-Acylethanolamine Interactors. Plant Biology 2019, American Society of Plant Biologists Annual Meeting, San Jose, California, August 4, 2019. Presented by Ashley E. Cannon. Co-authors, Ann Price, Mina Aziz, Lee Hughes, and Kent D. Chapman.

Wilmsen, S. and Dzialowski, E.M. (2019). Differential metabolic scaling of spider clades (order: Araneae). 10th International Congress of Comparative Physiology and Biochemistry: Mechanisms and evolutionary processes, Ottawa, Canada.

Conference Presentations

Alonso, A.P, Arias, C.L, Swanson, T, Yang, F, Mukundi, E, Gomez Cano, F, Grotewold, E (2019) Investigating the natural variation of pennycress metabolome and transcriptome, an emerging crop for aviation fuel. European Symposium on Plant Lipids, Marseille (France).

Arantes, C.C., Fitzgerald, D.B., Hoeninghaus, D.J., and Winemiller, K.O. Impacts of hydroelectric dams on fishes and fisheries in tropical rivers through the lens of functional traits. American Fisheries Society Annual Meeting; Reno, Nevada; September, 2019.

Andrade, F.S., Freitas, C.E.C., Batista, J.S., Hoeninghaus, D.J., and Souza, F.K.S. Identificação de peixe presa a partir do método de DNA barcoding na dieta da Piranha (*Pygocentrus nattereri*) em lagos de várzea na Amazônia. I Workshop do INCT para Adaptações da Biota Aquática da Amazônia – ADAPTA II. Instituto Nacional de Pesquisas da Amazônia – INPA. 2019.

Bonatesta, F., Price, E., Greer, J., Xu, E., Schlenk, D., and Mager, E. Effects of Deepwater Horizon crude oil exposure on the developing teleost kidney Society for Experimental Biology Annual Meeting, Seville, Spain, July 2019.

Butikofer, E., E. Schüttler & J.E. Jiménez. Influence of the cat-owner relationship on cat behavior outside the home. Presented at the joint annual conferences of the North American Wildlife Society and the American Fisheries Society, Reno, Nevada, USA.

Mager, E., Emadi, C., Bonatesta, F., Price, E., Verbeck, G. (2019) Acute and chronic effects of co-exposure to hypoxia and lead on the cladoceran, *Daphnia magna*. Society for Experimental Biology Annual Meeting, Seville, Spain.

Butikofer, E., Schüttler, E., and Jiménez, J.E. Influence of the cat-owner relationship on cat behavior outside the home. Presented at the joint annual conferences of the North American Wildlife Society and the American Fisheries Society, Reno, Nevada, USA.

Cannon, A.E., Price, A., Aziz, M., Hughues, L., and Chapman, K.D. (2019) Undergraduate Students Report Cognitive Gains and Scientific Career Interests After Screening for N-Acylethanolamine Interactors. Plant Biology 2019, American Society of Plant Biologists Annual Meeting, San Jose, California.

Conner, J., Crossley, J.L., Elsey, R., Nelson, D., Wang, T., and Crossley, D.A. II “The Effect of Developmental Hypoxia on Atrial Blood-Gases in American alligators (*Alligator mississippiensis*)” Society of Experimental Biologists Seville Spain July 2-5 2019.

Crossley, D.A. II “Developmental Phenotypic Plasticity and Juvenile Cardiovascular Phenotype of Reptiles” Society of Experimental Biologists Seville Spain July 2-5 2019.

Dongus, J., Dijkgraaf, L., Patel, M., Shah, J., Bhandari, D., Parker, J. PHYTOALEXIN DEFICIENT 4 (PAD4) is a central regulator of plant anti-microbial and anti-aphid responses. International Society of Molecular Plant Microbe-Interaction XVIII Congress, Glasgow, Scotland; July 14-18, 2019.

Jimenez, J.E. Conservation and ecology of Chileans birds]. Chile’s Forest Service, Robinson Crusoe Island, Chile.

Lazaro, X.A., R. Mackenzie, B. Goffinet & J.E. Jiménez. Do birds disperse mosses? A case study of endozoochory in Sub-Antarctic Chile. Presented at the joint annual conferences of the Ecological Society of America and the United States Society for Ecological Economics, Louisville, Kentucky, USA.

Mager, E., Emadi, C., Bonatesta, F., Price, E., Verbeck, G. (2019) Acute and chronic effects of co-exposure to hypoxia and lead on the cladoceran, *Daphnia magna*. Society for Experimental Biology Annual Meeting, Seville, Spain.

Mohanty, D., Chowdhury, Z., Venables, B.J., Shah, J. Understanding the role of DAR1, a putative O-fucosyl transferase, in plant systemic immunity. Plant Biology 2019, San Jose, CA, August 3-7, 2019.

Nelson, D., Grosell, M., Esbaugh A.J., and Crossley, D.A. II. Cardiac Performance in Juvenile Pelagic Fish and the Effects of Crude Oil Exposure. Society of Experimental Biologists Seville Spain July 2-5 2019.

Reynolds K. A. and Crossley, D.A. The Impact of Thermal Acclimation on Whole Heart Contractile Force in Sheepshead Minnows (*Cyprinodon variegatus*). International Congress on Comparative Physiology and Biochemistry, Cardiovascular Session, Ottawa, Ontario, Canada, August 7, 2019.

Reynolds K. A. and Crossley, D.A. The impact of Thermal Acclimation on Whole Heart Contractile Force in Sheepshead Minnows (*Cyprinodon variegatus*). International Congress of Comparative Physiology and Biochemistry 2019 Aug 5-8 2019.

Rippamonti, J., Dzialowski, E.M., and Crossley, J. (2019). Investigation of long anoxia exposure on permeabilized cardiac muscle mitochondrial function in multiple species. 10th International Congress of Comparative Physiology and Biochemistry: Mechanisms and evolutionary processes, Ottawa, Canada.

Sarah I. A., Crossley, D.A., II Elsey, R.M., and Gillis, T.E. Developmental Hypoxia Reprograms the Cardiac Proteome of American Alligators. Society of Experimental Biologists Seville Spain July 2-5 2019.

Smith, B., Galli, G., and Crossley, D.A. II "Developmental Phenotypic Plasticity on Contractile Force and Calcium Cycling in Hypoxic Incubated Common Snapping Turtles (*Chelydra serpentina*)" Society of Experimental Biologists Seville Spain July 2-5 2019.

Tam, N. (2019) Transition probability in decision-making process. 28th Annual Computational Neuroscience Meeting, Barcelona, Spain, July 13 to July 17, 2019.

Tam, N, Pollonini, L, Zouridakis, G. (2019) Movement directional maps for optical imaging with fNIRS (functional near-infrared spectroscopy). 28th Annual Computational Neuroscience Meeting, Barcelona, Spain, July 13 to July 17, 2019.

Twayana, M., Mondal, H., Shah, J. A putative R gene RESISTANT TO MYZUS PERSICAE is required for Arabidopsis defense against the green peach aphid. International Society of Molecular Plant Microbe-Interaction XVIII Congress, Glasgow, Scotland; July 14-18, 2019.

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