



August 2017 Issue

PUBLICATIONS

Zhou, F., C.-Y. Wang, M. Gutensohn, L. Jiang, P. Zhang, D. Zhang, **N. Dudareva** and S. Lu. 2017. A recruiting protein of geranylgeranyl diphosphate synthase controls metabolic flux toward chlorophyll biosynthesis in rice. *Proc. Natl. Acad. Sci. U.S.A.* **114**: 6866-6871.

Adebesin, F., J.R. Widhalm, B. Boachon, F. Lefèvre, B. Pierman, J.H. Lynch, I. Alam, B. Junqueira, R. Benke, S. Ray, J.A. Porter, M. Yanagisawa, H.Y. Wetzstein, J.A. Morgan, M. Boutry, R.C. Schuurink and **N. Dudareva**. 2017. Emission of volatile organic compounds from petunia flowers is facilitated by an ABC transporter. *Science*. **356**: 1386-1388.

Rowen, E., M. Gutensohn, **N. Dudareva** and I. Kaplan. 2017. Carnivore attractant or plant elicitor? Multifunctional roles of methyl salicylate lures in tomato defense. *J. Chem. Ecol.* **43**: 573-585.

Petell, C.J., G. Loiseau, R. Gandy, S. Pradhan and **H. Gowher**. 2017. A refined DNA methylation detection method using MspJI coupled quantitative PCR. *Anal. Biochem.* **533**: 1-9.

Afzali, B., J. Grönholm, J. Vandrovцова, C. O'Brien, H.-W. Sun, I. Vanderleyden, F.P. Davis, A. Khoder, Y. Zhang, A.N. Hegazy, A.V. Villarino, I.W. Palmer, J. Kaufman, N.R. Watts, **M. Kazemian**, O. Kamenyeva, J. Keith, A. Sayed, D. Kasperaviciute, M. Mueller, J.D. Hughes, I.J. Fuss, M.F. Sadiyah, K. Montgomery-Recht, J. McElwee, N.P. Restifo, W. Strober, M.A. Linterman, P.T. Wingfield, H.H. Uhlig, R. Roychoudhuri, T.J. Aitman, P. Kelleher, M.J. Lenoardo, J.J. O'Shea, N. Cooper and A.D.J. Laurence. 2017. BACH2 immunodeficiency illustrates an association between super-enhancers and haploinsufficiency. *Nat. Immunol.* **18**: 813-823.

AWARDS & RECOGNITION

Natalia Dudareva, John Morgan, Joshua Widhalm (Horticulture) and Funmilayo Adebesin (Dudareva lab) were featured in an article from the Purdue University Agriculture News on June 30. The article was entitled "Purdue research reveals plant volatiles released more deliberately than once thought". To read the full article click on the link. <http://www.purdue.edu/newsroom/releases/2017/Q2/purdue-research-reveals-plant-volatiles-released-more-deliberately-than-once-thought.html>

Barbara Golden has been asked to serve in a part-time role as Interim Assistant Dean for Faculty Development. Barb has served as a Dean's Fellow for the past two years, focusing on associate professor career development and mentoring. She will expand her role to include faculty development at all levels and will also work on graduate education and diversity initiatives.

Humaira Gowher received an award from PHS-NIH National Institute of General Medical Science for a proposal entitled "Regulation of Dnmt3 activity at enhancers of cell identity genes during differentiation". The total amount of the award is \$1,603,208. The project period is 07/01/17 – 06/30/18. Humaira also received an award from the American Cancer Society as an Institutional Research Grant Awarded by Purdue Center for Cancer Research for a proposal entitled "Loss of Dnmt3a regulation at pluripotency gene enhancers in cancer". The total amount awarded is \$30,000. The project period is 05/18/17 – 05/17/18.

Ann Kirchmaier (Co-PI) received an award from the National Science Foundation for a proposal entitled “Enhancing transgene expression and retention by co-delivery of DNA vectors with modified histones”. The amount of the award is \$149,103. The project period is 07/01/17 – 06/30/20.

Andy Tao received an award from Louisiana State University and A&M College/National Science Foundation for a project entitled “The Role of SEN1 in transcription Coupled DNA Repair (TCR)”. The total amount awarded is \$32,298. The project period is 08/01/17 – 07/31/2018. Andy also received an award from the CDKL5 Pilot Grant Program from the Orphan Disease Center at the University of Pennsylvania for a proposal entitled “Identification of CDKL5 direct substrates based on kinase assay linked Phosphoproteomics. The total amount of the award is \$150,000. The project period is 05/01/17 – 04/30/18.

NEW FACES



Jen Wisecaver, Assistant Professor, officially joins the department on August 14. She comes to us from Vanderbilt University where she was a postdoctoral researcher. She is originally from Lancaster, California. She earned her B.S. in Biological Science from Humboldt State University (Arcata, California) and her Ph.D. in Ecology & Evolutionary Biology from the University of Arizona (Tucson, Arizona). Her research involves studying the birth, evolution, and death of ecologically specialized metabolic pathways in plants, fungi, and microbial eukaryotes using comparative genomics, coexpression networks, and phylogenetics. Outside the lab, she enjoys spending time with family, friends, and her two old dogs.



Youssef Hegazy joined the Tran lab on June 26 as a Ph.D. student. Youssef is a transfer student from the Department of Comparative Pathobiology. He obtained his Bachelor of Pharmaceutical Sciences from the School of Pharmacy, Al-Azhar University, Cairo, Egypt in 2009. After graduation, he worked as a microbiologist for GlaxoSmithKline pharmaceutical company in Cairo, Egypt. After two years, he became a teaching assistant in the Department of Biochemistry, School of Pharmacy, Al-Azhar University, Cairo, Egypt. He also worked as a part-time research assistant at Cancer Biology lab, National Research Center, Giza, Egypt, studying the cancer chemopreventive activity of some natural products as a part of his master’s studies. He is currently working on R-loops mapping in budding yeast using DNase H as a tool.



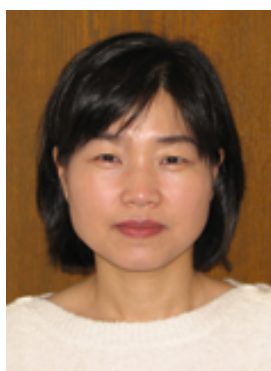
Lauren Macadlo joined the Puthiyaveetil lab on July 1 as a research technician and is working on characterizing a putative chloroplast protein phosphatase with possible roles in regulation and protein turnover. Lauren is from Munster, Indiana. She completed her first two and a half years of undergrad at Trinity Christian College in Illinois and finished her last two and a half years at Purdue. She graduated in May 2017 with a Bachelor of Science in Biochemistry. While at Purdue, she participated in undergraduate research in Dr. Scott Briggs’ lab and played volleyball for Purdue’s club team. In her spare time, she likes to read, eat, play volleyball, watch her favorite show Rick and Morty, and drive home to see her family.

DEPARTMENT NEWS

Saying Goodbye



Brett Bishop (Dudareva lab) left the department on July 29. Brett will be an Assistant Professor of Biochemistry at the University of Mary Hardin Baylor in Belton, Texas. We wish him well in his new endeavor.



Jeong-Im Kim (Chapple lab) left the department on July 28. Jeong-Im will be an Assistant Professor of Horticultural Sciences at the University of Florida, Gainesville, Florida. We wish her well in her new endeavor.

GRADUATE STUDENT NEWS

Nina Serratore (Briggs lab) was featured in an article entitled “Outstanding Teaching Assistants” in the Graduate AG Research Spotlight. To read the article please click on the link: <https://ag.purdue.edu/arp/Pages/Spotlight-TeachingAssistants2017.aspx>



Srishti Chakravorty joined the Kazemian lab on July 1.



Congratulations to Norman Best (Dilkes lab) (Horticulture and Landscape Architecture) for passing his defense on July 17.

Recent Graduates



Dr. Jingqun Ma (Weake lab)
Next Stop: Research specialist at Janelia Farm Research Campus, Loudoun County, Virginia.



Dr. Siwen Wang (Tran lab)
Next Stop: Pursuing a degree in biomedical visualization.



Dr. Chen Shao (Liu lab)
Next Stop: Seeking employment as a postdoctoral scholar.



Dr. Anwasha Sanyal (Mattoo lab)
Next Stop: Seeking employment as a postdoctoral scholar.

UNDERGRADUATE STUDENT NEWS

Austin Dixon (BS '17) was featured in an article entitled "Biochemistry major mixes science with outreach" in the July 6 edition of Purdue Agriculture News & Stories. To read the article click on the link:

<https://ag.purdue.edu/stories/biochemistry-major-mixes-science-with-outreach/>

Andjela Djokovic was featured in an article entitled "Biochemistry serves strong options for tennis player" in the July 7 edition of Purdue Agriculture News & Stories. To read the article click on the link:

<https://ag.purdue.edu/stories/biochemistry-serves-strong-options-for-tennis-player/>

GOING THE EXTRA MILE

Natalia Dudareva and Clint Chapple traveled to Dalian, China from July 16 – 20 for the joint meeting of the Fourth International Conference on Plant Metabolism, the Sixth International Conference on Plant Cell Wall Biology and the Thirteenth International Meeting on Biosynthesis, Function and Synthetic Biology of Isoprenoids. Clint gave a talk entitled "The Med5 subunit of Mediator is required for metabolic homeostasis in Arabidopsis" and Natalia chaired a session on "Biosynthesis and transport of terpenoids". She also gave a talk entitled "The emerging role of isopentenyl phosphate kinase in regulating terpenoid metabolism". Natalia gave a talk on July 15 at Nanjing University (Nanjing, China) entitled "Chemical factories of plants: from compound formation to their function". In addition, Natalia traveled to the XIX International Botanical Congress from July 23 – 29 in Shenzhen, China where she received the Excellent Scholar Award and gave a talk entitled "Phenylalanine biosynthetic network: what's left to know?".



Sujith Puthiyaveetil and two members of his lab, Iskander Ibrahim (postdoc scholar) and Gilbert Kayanja (graduate student) attended the 2017 Gordon Research Conference on Photosynthesis Plasticity: From the Environment to Synthetic Systems at Newry, Maine from July 16 – 21. While at the meeting Gilbert presented a poster entitled "The chloroplast two-component genetic control system of *Phaeodactylum tricornutum*".

(Pictured from left to right: Sujith Puthiyaveetil, Gilbert Kayanja and Iskander Ibrahim).

Vikki Weake attended the 2017 Gordon Conference on the Biology of Aging: New Insights from Molecules to Systems in Les Diablerets, Switzerland from July 9 – 14. Vikki presented a poster entitled "Differential susceptibility of genes to transcriptional decline in aging *Drosophila* sensory neurons". Vikki also presented a seminar at Northwestern University entitled "Aging photoreceptor neurons: light, stress and transcription" on June 15.

Several members of the department attended the Gordon Research Conferences, Plant Metabolic Engineering in Water Valley, New Hampshire on July 9 – 14. The following people presented posters at the conference:

Chapple lab: Jeong-Im Kim, "Insights into the role of Arabidopsis Mediator in plant secondary metabolism"; Peng Wang, "Measurement and modeling of phenylpropanoid metabolic flux in Arabidopsis"; and Fabiola Muro Villanueva, "Engineering of *Arabidopsis thaliana* that deposit *p*-coumaraldehyde-derived lignin".

Dudareva lab: Funmilayo Adebisin, "Emission of volatile organic compounds from petunia is facilitated by an ABC transporter"; Laura Henry, "Archeal terpenoid pathway as a strategy for metabolic engineering in plants"; and Joe Lynch, "Intercompartmental alterations in phenylalanine metabolism enable improvements to biofuel viability".

Puthiyaveetil lab: Gilbert Kayanja, "The chloroplast two-component genetic control system of *Phaeodactylum tricornutum*".

SAFETY CORNER

By Karyn Rodkey

Please check your door postings and make sure (1) the emergency contact numbers are correct and (2) the SDS and labelling key data is correct. Every lab should have information posted like the example below.

Emergency Contact Numbers		
BCHM 30		
	<u>Work</u>	<u>Home</u>
Dr. John Doe	49-4XXX	XXX-XXX-XXXX
Lab Tech	49-XXXX	XXX-XXX-XXXX
Karyn Rodkey	49-4164	(765) 258-3023
MSDS Location	Outside BCHM 17 - Storeroom	
Labeling Key Locations	On cork board inside door.	
Notes:		

BIRTHDAYS

Scott Briggs
Laura Henry

Harry Charbonneau
Joe Ogas

I-Hsuan (Blair) Chen

Ming He

UPCOMING EVENTS

August 5 – Commencement

August 18 – Biochemistry Research Retreat

August 21 – Fall semester classes begin

August 29 – Biochemistry Seminar – Dr. Xiaodong Cheng, Univ. of Texas, MD Anderson Cancer Center

September 4 – Labor Day (University Holiday)