Christine Merlin

Curriculum vitae

Updated 12/2023

Department of Biology
Biological Science Building East, 118C
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Positions and Employment

2019-	Associate Professor, Department of Biology, Texas A&M University
2015-	Faculty of Ecology and Evolutionary Biology, Texas A&M University
2014-	Faculty of Neuroscience, Texas A&M University
2014-	Faculty of Genetics, Texas A&M University
2013-	Center for Biological Clocks Research, Texas A&M University, Member
2013-2019	Assistant Professor, Department of Biology, Texas A&M University
2007-2013	Postdoctoral Fellow with Steven Reppert, University of Massachusetts Chan Medical School
2003-2006	Graduate research with Emmanuelle Jacquin-Joly and Martine Maibeche, National Institute of Agronomical Research and University Pierre and Marie Curie, France

Education

2003-2006	Ph.D., Insect Physiology, University Paris 6 Pierre and Marie Curie, France
2002-2003	M.S., Invertebrate Physiology, University Paris 6 Pierre and Marie Curie, France
1998-2002	B.S., Animal Biology, University Paris 6 Pierre and Marie Curie, France

Honors and Awards

2021	Konopka Research Innovation Award, Texas Society for Circadian Biology and Medicine
2020	Presidential Impact Fellow (lifetime title), Texas A&M University
2018	Junior Faculty Research Award, International Society for Research on Biological Rhythms
2017-2020	Klingenstein-Simons Fellowship Award in Neuroscience
2011-2013	Charles King Trust Postdoctoral Fellowship, The Medical Foundation
2003-2006	Graduate fellowship, French National Institute of Agronomical Research
2002-2003	Fellowship, French Ministry of National Education

Professional activities

Boards

2022-2024	Board of Directors, International Society for Research on Biological Rhythms, Treasurer
2020-2022	Board of Directors, International Society for Research on Biological Rhythms, Member-at-Large

Memberships

2022-	American Association for the Advancement of Science, Member
2014-	International Society for Research on Biological Rhythms, Member
2016-2019	Genetics Society of America, Member
2014-2019	NSF Insect Genetic Technology Network, Member

Editorial activities

2023-2026	Editorial Board, Journal of Biological Rhythms
2022-2023	Guest Editor, Special Issue on Monarch Butterflies, Current Opinion in Insect Science
2013-	Review Editor, Frontiers in Ecology and Evolutionary Biology, Chemical Ecology
2009-2013	Associate member of Faculty of 1000 Biology

Reviewer activities

Grants

2023	Natural Sciences and Engineering Research Council of Canada, *Ad hoc*
2022	National Science Foundation, Integrative Organismal Systems, *Panelist*
2022	Israel Science Foundation, *Ad hoc*

2019 National Science Foundation, Integrative Organismal Systems, *Ad hoc*
2018 National Science Foundation, Integrative Organismal Systems, *Ad hoc*
2017 National Science Foundation, Integrative Organismal Systems, *Ad hoc*
2015 National Science Foundation, Integrative Organismal Systems, *Ad hoc*
2015 National Science Foundation, Integrative Organismal Systems, *Panelist*

Manuscripts Animal Behavior, Behavior Genetics, Biological Journal of the Linnean Society, Cell, Cell Reports, Communications Biology, Current Biology, European Journal of Neuroscience, Frontiers in Behavioral Neuroscience, Frontiers in Ecology and Evolutionary Biology, Frontiers in Physiology, Gene Technology, Heredity, Insect Molecular Biology, Journal of Biological Rhythms, Journal of Insect Science, Journal of the Lepidopterists' Society, Molecular Ecology, Nature, PloS Genetics, Proceedings of the National Academy of Sciences, PloS One, Scientific Reports, Science.

Awards
2022 International Society for Research on Biological rhythms meeting, Trainee Merit Awards
2018 International Society for Research on Biological rhythms meeting, Trainee Merit Awards

Conference organization
2022 Panel Chair, "Navigating an Ever-Changing Funding Environment" workshop, International Society for Research on Biological Rhythms meeting
2020 Symposium Chair, International Society for Research on Biological Rhythms meeting
2019-2020 Program Committee Member, 2020 International Society for Research on Biological Rhythms
2019 Co-organizer, Texas Society for Circadian Biology and Medicine meeting
2018 Session Chair, Trainee Development Day, International Society for Research on Biological Rhythms
2016 Co-organizer, Texas Society for Circadian Biology and Medicine meeting
2014 Session Chair, International Society for Research on Biological Rhythms meeting
2014 Workshop co-organizer, Trainee Development Day, Society for Research on Biological Rhythms

Panels
2022 The Kavli Foundation, Neurobiology and Changing Ecosystems

Consultant
2015 Book on Monarch butterflies in a series on Bioindicator animals (Red Line Amiral)

Invited Presentations and Seminars (*: Upcoming commitment)

2024* Department of Cellular and Molecular Physiology, Yale School of Medicine (New Haven, CT)
2024* Department of Entomology, Nanjing Agricultural University (Nanjing, China)
2024* Department of Biology, Norwegian University of Science and Technology (Tronheim, Norway)
2024* Department of Biology, Lund University (Lund, Sweden)
2023 Klingenstein-Simons Meeting, Simons Foundation (New York, NY)
2023 Hope Center Clocks and Sleep Club, Washington University in St Louis (Virtual seminar)
2022 Texas Society for Circadian Biology and Medicine (Houston, TX)
2022 Department of Neurobiology, UMass Chan Medical School (Worcester, MA)
2022 International Seminar Series on Lepidoptera, Lepinar (Virtual seminar)
2022 University of Colorado Boulder, Department of Integrative Physiology (Boulder, CO)
2022 International Seminar Series ZooNav, Animal navigation and orientation (Virtual Seminar)
2022 11th International Workshop on the Molecular Biology and Genetics of the Lepidoptera, *Keynote Lecture* (Kolympari, Crete)
2022 International Congress of Neuroethology, *Presidential Symposium* (Lisbon, Portugal)
2022 Gordon Research Conference Photosensory Receptors and Signal Transduction (Ventura, CA)
2021 University of Washington, Neuroscience Graduate Program (Virtual Seminar)
2021 SFB 1372 Magnetoreception and Navigation in Vertebrates Symposium (Virtual Conference)
2021 International Behavioural and Neural Genetics Society, Genes, Brain and Behavior, Emergent systems for genetic studies of behavior Symposium (Virtual Conference)
2021 CINCHRON European Network Seminar series (Virtual Seminar)
2020 Argentinian Society for Research in Neuroscience (Virtual Conference)
2019 Molecular Biosystems Conference on Eukaryotic Gene Regulation and Functional Genomics (Puerto Varas, Chile)
2019 Texas A&M University, Department of Entomology (College Station, TX)

2019 International Congress of Comparative Physiology and Biochemistry, Invertebrate photoperiodism and seasonality Symposium (Ottawa, Canada)
2019 Gordon Research Conference Chronobiology (Castelldefels, Spain)
2019 Texas Society for Circadian Biology and Medicine (College Station, TX)
2018 Journal of Experimental Biology 2018 Symposium, Linking brain and behavior in animal navigation (Cavo Olympo, Greece)
2017 8th Max Planck Institute-Chinese Academy of Sciences Exploratory Round Table Conference on Mechanisms of Animal Behavior (Shanghai, China)
2017 University of Missouri, Division of Biological Sciences, *Invited by Graduate Students*
2017 UC Davis, Department of Entomology and Nematology
2017 Texas Genetics Society meeting (College Station, TX)
2017 Genetics of Migration Symposium (Plön, Germany)
2017 Center for Circadian Biology Symposium (UC San Diego, CA)
2016 Texas A&M University, Department of Entomology, *Invited by Graduate Students*
2016 International Congress of Entomology, Evolution of biological clocks Symposium (Orlando, FL)
2016 Virginia Tech University, Department of Biological Sciences
2016 Society for Research on Biological Rhythms (Tampa, FL)
2016 Texas A&M University, Department of Horticultural Sciences
2015 Texas A&M University, Interdisciplinary Program in Genetics
2015 Insect Genetic Technology Research Coordination Network, Special symposium on Flies, Monarchs, Mosquitoes: Insights using genetic technologies (Rockville, MD)
2015 Insect Genetic Technology Workshop, Annual Arthropod Genomics Consortium Symposium (Manhattan, KS)
2014 Baylor University, Department of Biology
2014 APS Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology (San Diego, CA)
2014 Texas A&M University, Zoology Society
2014 Southeastern and Central Texas Society for Clocks Meeting (Houston, TX)
2013 Texas A&M University, Genetic Graduate Student Association
2013 EFOR network, Genomics and Lepidoptera (Paris, France)
2013 Behavioural Ecology of Animal Movement, Post-congress Symposium of the 14th International Behavioral Ecology Congress (Lund, Sweden)
2010 Society for Research on Biological Rhythms (Sandestin, FL)
2009 Hot topic symposium of the XI Congress of the European Biological Rhythms Society (Strasbourg, France; selected on abstract)

Publications *(⁺: Postdoctoral Associate; *: Graduate student; **: Undergraduate student)*

In preparation

1. Lugena AB*, Goforth KM⁺, Gonzalez R, Ramirez I, **Merlin C**. Coldness-induced downregulation of integrins in the blood-brain barrier promotes its permeabilization for seasonal reversal of flight orientation in spring monarch butterflies.

Under revisions

1. Greenwell BJ, Beytebiere JR, Lamb TM, Bell-Pedersen D, **Merlin C** and Menet JS. Isoform-specific regulation of rhythmic gene expression by alternative polyadenylation. *BioRxiv,* DOI: https://doi.org/10.1101/2020.12.12.422514. *Under revisions, Nature Communications.*

Peer-Reviewed Publications

25. Iiams SE*, Wan G⁺, Zhang J, Lugena AB*, Zhang Y⁺, Hayden AN**, **Merlin C**. Loss of functional *Cryptochrome 1* alters 24-hour behavioral rhythms in monarch butterflies. *BioRxiv,* DOI: https://doi.org/10.1101/2023.08.04.552044. *iScience*, 2023. *Accepted in principle.*

24. Nguyen TAT, Beetz J, **Merlin C**, Pfeiffer K, el Jundi B. Weighting of celestial and terrestrial cues in the monarch butterfly central complex. *Frontiers in Neural Circuits*, 2022, 16:862279. DOI: 10.3389/fncir.2022.862279

23. Shetty V, Meyers JI, Zhang Y+, **Merlin C**, Slotman MA. Impact of disabled circadian clock on yellow fever mosquito *Aedes aegypti* fitness and behaviors. *Scientific Reports*, 2022, 12:6899. DOI: 10.1038/s41598-022-10825-5

22. Zhang Y+, Iiams SE*, Menet JS, Hardin PE and **Merlin C**. TRITHORAX-dependent arginine methylation of HSP68 mediates circadian repression by PERIOD. *Proceedings of the National Academy of Sciences USA,* 2022, 119(4):e2115711119. DOI: 10.1073/pnas.2115711119

21. Beetz J, Kraus C, Franzke M, Dreyer D, Strube-Bloss M, Roessler W, Warrant E, **Merlin C** and El Jundi B. Flight-induced compass representation in the monarch butterfly heading network. *Current Biology*, 2022, 32(2):338-349.e5. DOI: 10.1016/j.cub.2021.11.009

20. Rivas GBS, Zhou J, **Merlin C** and Hardin PE. CLOCKWORK ORANGE promotes CLOCK-CYCLE activation via the Drosophila ortholog of CLOCK INTERACING PROTEIN, CIRCADIAN. *Current Biology*, 2021, 31(19):4207-4218.e4. DOI: 10.1016/j.cub.2021.07.017

19. Nguyen TAT, Beetz J, **Merlin C** and El Jundi B. Sun compass neurons are tuned to migratory orientation in monarch butterflies. *Proceedings of the Royal Society B*, 2021, 288: 20202988. DOI: 10.1098/rspb.2020.2988

18. Wan G+, Hayden AN**, Iiams SE* and **Merlin C**. Cryptochrome 1 mediates light-dependent inclination magnetosensing in monarch butterflies. *Nature Communications*, 2021, 12: 771. DOI: 10.1038/s41467-021-21002-z

17. Iiams SE*, Lugena AB*, Zhang Y+, Hayden AN** and **Merlin C**. Photoperiodic and clock regulation of the vitamin A pathway in the brain mediates seasonal responsiveness in the monarch butterfly. *Proceedings of the National Academy of Sciences USA*, 2019, 116(50): 25214-25221. DOI: 10.1073/pnas.1913915116

16. Lugena AB*, Zhang Y+, Menet JS and **Merlin C**. Genome-wide discovery of the daily transcriptome, *cis*-regulatory elements and transcription factor footprints in the monarch butterfly brain. *PLoS Genetics*, 2019, 15(7): e1008265. DOI: 10.1371/journal.pgen.1008265

15. Zhang Y+, Markert MJ*, Groves SC**, Hardin PE and **Merlin C**. Vertebrate-like CRYPTOCHROME 2 from monarch regulates circadian transcription via independent mechanisms on CLOCK and BMAL1. *Proceedings of the National Academy of Sciences USA*, 2017, 114(36): E7516-E7525. DOI: 10.1073/pnas.1702014114

14. Markert MJ*, Zhang Y+, Enuameh MS, Reppert SM, Wolfe SA and **Merlin C**. Genomic access to monarch migration using TALEN and CRISPR/Cas9-mediated targeted mutagenesis. *G3: Genes, Genomes, Genetics*, 2016, 6:905-15. DOI: 10.1534/g3.116.027029

13. **Merlin C**, Beaver LE, Taylor OR, Wolfe SA and Reppert SM. Efficient targeted mutagenesis in the monarch butterfly using Zinc Finger Nucleases. *Genome Research*, 2013, 23:159-68. DOI: 10.1101/gr.145599.112

12. Guerra PA, **Merlin C**, Gegear RJ and Reppert SM. Discordant timing between antennae disrupts sun compass orientation in migratory monarch butterflies. *Nature Communications*, 2012, 3:958. DOI: 10.1038/ncomms1965

11. Zhan S, **Merlin C**, Boore JL and Reppert SM. The monarch butterfly genome yields insights into long-distance migration. *Cell*, 2011, 147: 1171-1185. DOI: 10.1016/j.cell.2011.09.052

10. Legeai F, Malpel S, Montagné N, Monsempes C, Cousseran F, **Merlin C**, François M-C, Maïbèche-Coisne M, Gavory F, Poulain J and Jacquin-Joly E. An Expressed Sequence Tag collection from the male antennae of the Noctuid moth *Spodoptera littoralis*: a resource for olfactory and pheromone detection research. *BMC Genomics*, 2011, 12: 86. DOI: 10.1186/1471-2164-12-86

9. **Merlin C**, Gegear RJ and Reppert SM. Antennal circadian clocks coordinate sun compass orientation in migratory monarch butterflies. *Science*, 2009, 325: 1700-1704. DOI: 10.1126/science.1176221

8. Malpel S, **Merlin C**, François M-C and Jacquin-Joly E. Molecular identification and characterization of two new Lepidoptera chemoreceptors belonging to the *Drosophila* OR83b family. *Insect Molecular Biology*, 2008,17: 587-596. DOI: 10.1111/j.1365-2583.2008.00830.x

7. **Merlin C**, Lucas P, Rochat D, François M-C, Maïbèche-Coisne M and Jacquin-Joly E. An antennal circadian clock and circadian rhythms in the peripheral pheromone reception in the moth *Spodoptera littoralis*. *Journal of Biological Rhythms*, 2007, 22: 502-514. DOI: 10.1177/0748730407307737

6. **Merlin C**, Rosell G, Carot-Sans G, François M-C, Bozzolan F, Pelletier J, Jacquin-Joly E, Guerrero A and Maïbèche-Coisne M. Antennal esterase cDNAs from two pest moths, *Spodoptera littoralis* and *Sesamia*

nonagrioides, potentially involved in odourant degradation. *Insect Molecular Biology*, 2007, 16: 73-81. DOI: 10.1111/j.1365-2583.2006.00702.x

5. De Santis F, François M-C, **Merlin C**, Pelletier J, Maïbèche-Coisne M, Conti E and Jacquin-Joly E. Molecular cloning and *in situ* expression patterns of two new pheromone-binding proteins from the corn stemborer *Sesamia nonagrioides*. *Journal of Chemical Ecology*, 2006, 32: 1703-1717. DOI: 10.1007/s10886-006-9103-2

4. **Merlin C**, François M-C, Queguiner I, Maïbèche-Coisne M and Jacquin-Joly E. Evidence for a putative antennal clock in *Mamestra brassicae*: molecular cloning and characterization of two clock genes-*period* and *cryptochrome*- in antennae. *Insect Molecular Biology*, 2006, 15: 137-145. DOI: 10.1111/j.1365-2583.2006.00617.x

3. **Merlin C**, François M-C, Bozzolan F, Pelletier J, Jacquin-Joly E and Maïbèche-Coisne M. A new aldehyde oxidase selectively expressed in chemosensory organs of insects. *Biochemical and Biophysical Research Communications*, 2005, 332: 4-10. DOI: 10.1016/j.bbrc.2005.04.084

2. Maïbèche-Coisne M, **Merlin C**, François M-C, Porcheron P and Jacquin-Joly E. P450 and P450 reductase cDNAs from the moth *Mamestra brassicae*: cloning and expression patterns in male antennae. *Gene*, 2005, 346: 195-203. DOI: 10.1016/j.gene.2004.11.010

1. Maïbèche-Coisne M, **Merlin C**, François M-C, Queguiner I, Porcheron P and Jacquin-Joly E. Putative odorant-degrading esterase cDNA from the moth *Mamestra brassicae*: cloning and expression patterns in male and female antennae. *Chemical Senses*, 2004, 29: 381-390. DOI: 10.1093/chemse/bjh039

Other

Peer-reviewed Review Articles *(⁺: Postdoctoral Associate; *: Graduate student; **: Undergraduate student)*

8. **Merlin C**. Insect magnetoreception: a Cry for mechanistic insights. J Comp Physiol A Neuroethol Sens Neural Behav Physiol, 2023, 209: 785–792. DOI: 10.1007/s00359-023-01636-8

7. **Merlin C**, Iiams SE* and Lugena AB*. Monarch butterfly migration moving into the genetic era. *Trends in Genetics*, 2020, 36(9): 689-701. DOI: 10.1016/j.tig.2020.06.011

6. **Merlin C** and Liedvogel M. The genetics and epigenetics of animal migration and orientation: birds, butterflies, and beyond. *Journal of Experimental Biology*, 2019, 222, jeb191890. DOI: 10.1242/jeb.191890

5. Denlinger DL, Hahn DA, **Merlin C**, Holzapfel CM, and Bradshaw WE. Keeping time without a spine: what can the insect clock teach us about seasonal adaptation? *Philosophical Transactions of the Royal Society B*, 2017, 372:1734. DOI: 10.1098/rstb.2016.0257

4. Reppert SM, Guerra PA and **Merlin C**. Neurobiology of Monarch Butterfly Migration. *Annual Reviews of Entomology*, 2016, 61:25-42. DOI: 10.1146/annurev-ento-010814-020855

3. **Merlin C**, Heinze S and Reppert SM. Unraveling navigational strategies in migratory insects. *Current Opinion in Neurobiol*ogy, 2012, 22:353-61. DOI: 10.1016/j.conb.2011.11.009

2. Reppert SM, Gegear RJ and **Merlin C**. Navigational mechanisms of migrating monarch butterflies. *Trends in Neurosciences*, 2010, 33: 399-406. DOI: 10.1016/j.tins.2010.04.004

1. Jacquin-Joly E and **Merlin C**. Insect olfactory receptors: contributions of molecular biology to chemical ecology. *Journal of Chemical Ecol*ogy, 2004, 30: 2359-97. DOI: 10.1007/s10886-004-7941-3

News and views/Editorials

2. **Merlin C** and Oberhauser K. Editorial Overview: Spotlight on monarch butterflies: a treasure trove of biology to preserve. *Current Opinion in Insect Science*, 2023, 60: 101152. DOI: 10.1016/j.cois.2023.101152

1. **Merlin C**. Biological Timing: The crustacean *Parhyale* is rolling with the tides. *Current Biology*, 2023, 33: R398–R423. DOI: 10.1016/j.cub.2023.04.023

Symposium-derived Articles

2. Anttonen T, Burghi T, Duvall L, P. Fernandez M, Gutierrez G, Kermen F, **Merlin C** and Michaiel A. Neurobiology and Changing Ecosystems: Mechanisms Underlying Responses to Human-generated Environmental Impacts. *Journal of Neuroscience,* 2023, 43: 7530-7537. DOI: 10.1523/JNEUROSCI.1431-23.2023

1. Bradley TJ, Briscoe AD, Brady SG, Cardinal S, Contreras HL, Danforth N, Dudley R, Grimaldi D, Harrison JF, Kaiser A, **Merlin C**, Reppert SM, Vanderbrooks JM and Yanoviak SP. Episodes in Insect Evolution. *Integrative and Comparative Biology*, 2009, 49: 590-606. DOI: 10.1093/icb/icp043

Book chapters

2. **Merlin C**, Gegear RJ and Reppert SM. Monarch butterfly migration. In, McGraw-Hill Yearbook of Science and Technology, 2011, pp 212-214.
1. **Merlin C** and Reppert SM. Lepidopteran circadian clocks: from molecules to behavior. In, Molecular Biology and Genetics of the Lepidoptera, Goldsmith M.R. and Marec, F.(Eds), Taylor & Francis, Boca Raton, FL, chap. 8, 2009, pp 137-152.

Teaching and Mentoring

Texas A&M University

BIOL 609: Molecular Tools (2014-present)
Graduate course that focuses on modern tools and methods used in prokaryotic and eukaryotic molecular biology. Students learn to choose the appropriate experimental technique for a given scientific question and to design and interpret experiments. (Co-Instructor with Dr. Menet Jerome, Fall semester; 50% effort; enrollment ~50 students)

BIOL 214: Genes, Ecology and Evolution (2016-present)
Undergraduate sophomore-level course that provides a genetically-based introduction to the study of ecology and evolution with an emphasis on the interactions of organisms with each other and with their environment. (Spring semester; 100% effort; enrollment ~110 students)

Research Personnel

Current

Dr. Ying Zhang	Postdoctoral Research Associate
Dr. Kayla Goforth	Postdoctoral Research Associate
Dr. Vinaya Shetty	Postdoctoral Research Associate
Jarno Capuchino	Undergraduate researcher, Honors Biology
Adil Khan	Undergraduate researcher, Biology
Anushka Ganoo	Undergraduate researcher, Biomedical Sciences
Lauren Pitts	Undergraduate researcher, Neuroscience
Karen Ibarra	Student worker
An Nguyen	Student worker

Former Trainees

Dr. Guijun Wan — Postdoctoral Research Associate, 2017-2020
Recipient of: *1st place poster competition at the 2019 Texas Society for Circadian Biology and Medicine; 2020 Society for Research on Biological Rhythms Wellcome Burrough Fund Excellence Award*
Current position: Associate Professor, Department of Entomology, Nanjing Agricultural University, China.

Dr. Samantha Iiams — Interdisciplinary Program of Genetics PhD student, 2015-2021
Recipient of: 2016 Texas A&M Genetics Outstanding Performance in Teaching Award; Best poster prize in the junior category at the 2017 Texas A&M Biology Student Postdoc Research Conference (SPRC); Second place oral competition and People's Choice awards at the 2018 Texas A&M Genetics Symposium; Poster prize at the 2018 Texas Society for Circadian Biology and Medicine meeting; 2018 Society for Research on Biological Rhythms Patricia DeCoursey Excellence Award; 2018 Texas A&M Genetics Program Travel Award; *1st place poster competition at the 2019 Texas A&M Genetics Symposium*; *1st place poster competition at the 2019 Texas A&M Genome Editing Symposium*
Current position: Postdoctoral Research Associate, Department of Neurosciences, UT Southwestern Medical School, Joseph Takahashi's lab.

Dr. Aldrin Lugena	Biology Ph.D student, 2016-2022 *Recipient of: 2018 Society for Research on Biological Rhythms Trainee Merit Award; 2018 Texas A&M Department of Biology Travel Award; 2020 Society for Research on Biological Rhythms Trainee Merit Award; 2020 Roozbeh Arianpour Memorial Scholarship from the Texas A&M Department of Biology; 2020 SPRC Second place best poster award; 2021 Aggieland RNA Research Award; 2021 SPRC Best Talk award.* Current position: Scientist, Avance Biosciences, Houston, TX.

Former Visiting Scholars

Dr. Alok Arun	Assistant Professor, Institute of Sustainable Biotechnology, Inter American University of Puerto Rico
Dr. Guijun Wan	Postdoctoral Researcher, Department of Entomology, Nanjing Agricultural University, Nanjing, China
Dr. Basil el Jundi	Emmy Noether group leader, Biocenter, University of Würzburg, Germany
Dr. Jerome Beetz	Postdoctoral researcher, el Jundi's group, University of Würzburg, Germany
Milan Becker	Master's student, el Jundi's group, Biocenter, University of Würzburg, Germany
Mingqi Cai	Master's student, East Normal China University, Shanghai, China
Myriam Franzke	Graduate student, el Jundi's group, Biocenter, University of Würzburg, Germany
Tu Anh Nguyen Thi	Graduate student, el Jundi's group, Biocenter, University of Würzburg, Germany
Christian Kraus	Graduate student, el Jundi's group, Norwegian University of Science and Technology, Norway
Dr. Robin Grob	Postdoctoral Researcher, el Jundi's group, Norwegian University of Science and Technology, Norway
Fredrik Hanslin	Graduate student, el Jundi's group, Norwegian University of Science and Technology, Norway

Former Undergraduate Students

Abigail Adkins (2022-2023)	B.S. Biochemistry and Biophysics TAMU
Alyssa Bennett (2019)	B.S. Biology TAMU
Catherine Bogdan (2017-19)	B.S. Genetics TAMU, *Recipient of: President's Endowed Scholarship, Billy G. Bethea '52 Scholarship, Joe and Billy Manion Endowed Scholarship, PACE Scholarship* (Graduate School, Biology, University of Delaware)
Kendall Bowen (2015-17)	B.S. Genetics TAMU, *Recipient of: Poster prize at the 2017 TAMU Biology graduation reception*
Jenna Coleman (2019-2020)	B.S. Biology TAMU (University of Missouri's nursing school)
Mandy Eckhardt (2019)	Genetics IDP REU undergraduate student (Graduate School, Genetics, Development and Disease program, UT Southwestern)
Melanie Goodman (2014-15)	B.S. Biology TAMU
Shayna Groves (2014-15)	B.S. Biology TAMU (Histology Technician at Amarillo Pathology Group, TX)
Corine Harvey (2023)	B.S. Biology TAMU
Ashley Hayden (2017-19)	B.S. Honors Biology TAMU, *Recipient of: 2018-2019 Astronaut Scholarship; 2019 Texas A&M Biology Distinguished Undergraduate Award* (Graduate School, Neuroscience program, Baylor College of Medicine)
Sarah Kenny (2015-17)	B.S. Biology TAMU, *Recipient of: Poster prize at the 2017 TAMU Biology graduation reception*, (Medical School, University of Texas School of Medicine at San Antonio)
Emily McKnight (2013-14)	B.S. Biology TAMU (Physician Assistant School, University of Texas Medical Branch, Galveston, TX)
Candice Medina (2015)	B.S. Biology TAMU (Graduate School at Texas A&M University)
Kimberly Morrison (2018)	B.S. Biology TAMU
Lauren Nowlin (2016)	B.S. Biology TAMU
Jason Park (2017-18)	B.S. Biology TAMU (M.S. student in Biomedical Sciences, Texas A&M University)
Julia Peralta (2021)	B.S. Biology TAMU
Haleigh Jo Shoemake (2022)	Undergraduate researcher, Biology
Anna Subonj (2018-19)	B.S. Biology TAMU
Justin Vann (2014)	B.S. Biology TAMU (M.S. student in Biomedical Sciences, Texas A&M University)

Funding

Pending

Human Frontier Science Program (Invited Full proposal)
(PI: I. Shapiro; Co-PIs: C. Merlin, H. Kato, M. Kosloff)
Title: UV opsin as the sensor for magnetosensation in animals.

NSF
(PI: W. Murphy; Collaborators: C. Merlin, G. Reeves, I. Singh, J. Cai, J. Menet, J. Light, K. Delmore, M. Polymenis, P. Straight, Q. Sun, Z. Adelman)
Title: REU Site: Summer Undergraduate Research Program in Genetics and Genomics (SURGe)
Total award amount requested: $434,311

Current

NIH R01 GM124617
(PI: C. Merlin, MPI: P. Hardin) 4/1/2023-3/31/2027
Title: Mechanisms of circadian repression
Total award amount: $1,450,545
The objective of this project is to use the monarch butterfly and Drosophila as two complementary models to determine 1) how CIPC binding to CLK e19r regulates transcriptional repression of CLOCK-BMAL1 and CLOCK-CYCLE transcription, and 2) which HSP70/HSP40 family members mediate PER-CLK binding and transcriptional repression and whether they drive phosphorylation-dependent conformational changes in PER and CLK.

NSF IOS 2224154
(PI: C. Merlin) 10/1/2022-9/30/2026
Title: Clock-controlled vitamin A regulation of animal photoperiodic responsiveness
Total award amount: $900,000
The objective of this project is to determine the role of vitamin A in photoperiodic responsiveness in the monarch brain by testing whether it functions in the production of an opsin-based deep brain photoreceptor for photoperiodic induction and/or the reprogramming of gene expression in a photoperiod-dependent manner to rewire the neuronal circuitry in the brain in response to changing seasons.

TAMU Presidential Impact Fellowship
(PI: C. Merlin) 2020-2023
Total award amount: $75,000

Completed

NSF IOS 1754725
(PI: C. Merlin) 6/1/2018-5/30/2023
Title: Epigenetic regulation of seasonal behavior in insects
Total award amount: $600,000
The objective of this project is to delineate the epigenetic architecture that underlies differential gene expression in the monarch brain responsible for migratory behavior and the production of distinct seasonal flight orientations by identifying open chromatin regions, cis-regulatory elements and transcription factors that mediate differential gene expression between non-migrants, fall migrants and spring remigrants.

NIH R01 GM124617 S1 Administrative Supplement
(PI: C. Merlin, MPI: P. Hardin) 8/01/2020-7/31/2021
Title: Mechanisms of circadian repression
Total award amount: $66,696 (supplemented with $22,250 from TAMU as 25% cost sharing)

NIH R01 GM124617
(PI: C. Merlin, MPI: P. Hardin) 8/11/2017-8/10/2022
Title: Mechanisms of circadian repression
Total award amount: $1,157,576
The objective of this project is to determine 1) how PERIOD initiates on-DNA repression of CLOCK-BMAL1 and CLOCK-CYCLE transcription, and 2) how PERIOD and CLOCKWORKORANGE collaborate to maintain off-DNA transcriptional repression and promote CLOCK-CYCLE/CLOCK-BMAL1 transcription, using the monarch butterfly and *Drosophila* as two complementary models.

Klingenstein-Simons Award in Neuroscience
(PI: C. Merlin) 7/1/2017-6/30/2022
Title: Defining clock neuronal circuits that control seasonal behavior
Total award amount: $225,000
The objective of this project is to develop CRISPR/Cas9-assisted knock-in approaches in the monarch butterfly 1) to generate a reporter rhythmic monarch cell line, and 2) to tag clock neurons in vivo to map the circadian neural circuits in monarch brains and antennae and determine if they are rewired seasonally.

T3 Triad Texas A&M University
(PI: K. Delmore; Co-PIs: C. Merlin, K. Entesari) 9/2019-9/2021
Title: Unravelling the genetic basis of seasonal migration in songbirds
Total award amount: $32,000
The objective of this grant is to establish an automated telemetry system in British Columbia to quantify migratory timing, orientation and gene expression in Swainson's thrushes hybrids.

NSF IOS 1456985
(PI: C. Merlin) 5/1/2015-4/30/2019
Title: Circadian clock control of seasonal migration
Total award amount: $550,863
The objectives of this project were to 1) genetically determine the role of the circadian clock in the control of the monarch butterfly migratory switch, and 2) to identify molecular pathways under clock-control in the monarch brain that underlie the photoperiodically-induced migratory switch.

Center for Biological Clocks Research Bridge Funds Mini Grant 2014
(MPI with P. Hardin)
Title: Knocking out and tagging clock genes in *Drosophila* and the Monarch butterfly using CRISPR/Cas9 and TALEN-mediated genome editing approaches
Total amount: $16,000

University Services

Departmental

2022-2025	Graduate Recruiting and Admissions Committee, Department of Biology, Member
2021-2023	Graduate Program Committee, Department of Biology, Chair
2020-2021	Graduate Program Committee, Department of Biology, Member
2020-2021	Faculty Search Committee, Department of Biology, Member
2019-present	Mentoring Junior Faculty, Department of Biology (Kira Delmore, Jeff Jones)
2015-2017	Faculty Search Committee, Department of Biology, Member (two consecutive searches)
2015	Student/Postdoc Research Conference Committee, Department of Biology, Chair
2014, 2016	Student/Postdoc Research Conference Committee, Department of Biology, Member

Graduate Student Committee member

2023-present	Jiawen Zhang, Cellular and Molecular Physiology, Yale School of Medicine
2022-present	Andie Miller, Ecology and Evolutionary Biology Program
2022-present	Chante Guy, Department of Biology
2022-present	Cara Webster, Department of Biology
2020-present	Griffin Best, Department of Biology
2020-present	Ebi Preh, Department of Biology
2018-present	Whitney Robertson, Department of Biology
2018-present	Jorden Holland, Genetics Program
2021-2023	Samuel Park, Department of Biology
2018-2023	Kushal Bakshi, Neuroscience Program
2018-2020	Tammy Oh, Department of Biology (Chair)
2017-2023	Amy Tan, Department of Biology
2016-2020	Ashley Tessnow, Department of Entomology
2015-2020	Zachary Popkin-Hall, Department of Entomology
2015-2019	Joshua Beytebiere, Department of Biology
2016-2019	Justin Overcash, Genetics Program
2014-2019	Michael Werry, Department of Biology
2018-2019	James Kutlowski, Department of Biology
2015-2018	Andrew Sakla, Department of Biology

2016-2018 Miguel Gonzales, Genetics Program
2016-2018 Melanie DeSessa, Chemical Engineering Department
2015-2017 Courtney Caster, Genetics Program
2014-2017 Tianxin Liu, Department of Biology

Interdepartmental
2016-2019 Texas A&M Genetics Graduate program, Graduate Recruiting Committee, Member
2015-2016 Texas A&M Genetics Graduate program, Graduate Advising Committee, Member
2014-2016 Texas A&M Institute for Neuroscience, Graduate Program Committee, Member

College-level
2020-2021 Biology Department Head Search Advisory Committee, Member

University-level
2023-2026 Texas A&M Center for Biological Clock Research Executive Committee, Member
2020-2021 Texas A&M President's Excellence Funds Steering Committee, Member
2019 Texas A&M Astronaut Scholarship Foundation Selection Committee, Member

National Media Coverage

2020 PBS NOVA: Scientific documentary on Butterfly-inspired technological innovations (Merlin lab research featured)
2024 National Geographic magazine, Saving the Monarchs (Merlin lab research featured)