

# Aaron E. Schirmer

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## **Education**

2003-2009 Northwestern University Evanston, IL  
*Doctor of Philosophy, Neuroscience*  
*Dissertation Title: The Role of the Negative Feedback Loop Genes, Cryptochrome and Period, in Circadian Rhythmicity*

1997-2001 Elmhurst University Elmhurst, IL  
*Graduated Summa Cum Laude*  
*Bachelors of Science, Biology*  
*Minors in Chemistry and Urban Studies*

## **Appointments**

2021 - Present Northeastern Illinois University Chicago, IL  
*Professor*  
Appointment responsibilities include teaching undergraduate and graduate lecture and lab courses, maintaining a strong research program involving Northeastern students, and significant service to the University.

2015 - 2021 Northeastern Illinois University Chicago, IL  
*Associate Professor*  
Appointment responsibilities include teaching undergraduate and graduate lecture and lab courses, continuing a research program involving Northeastern students, and significant service to the University.

Summer 2009 - 2015 Northeastern Illinois University Chicago, IL  
*Assistant Professor*  
Appointment responsibilities include teaching undergraduate and graduate lecture and lab courses in the biological sciences and creating a research program involving Northeastern students.

2007 - 2008 Elmhurst University Elmhurst, IL  
*Adjunct Faculty*  
Independently designed and taught two semesters of Biology 100 lecture and lab to Elmhurst College undergraduates.

2001-2003 Center for Functional Genomics Evanston, IL  
*Research Technologist*  
Designed, optimized, and conducted multiple behavioral assays for a forward genetic mutagenesis screen using the mouse as a model organism. The results of these assays have led to the discovery of novel genes involved in the regulation of complex behavior.

## **Honors and Awards**

Fulbright Specialist in Biology Education – U.S. Department of State – 2024  
Teaching and Resource Professional Research Excellence Award – Northeastern Illinois University - 2023  
Bernard J. Brommel Distinguished Professor in Research Award – Northeastern Illinois University - 2022  
Teaching and Resource Professional Research Excellence Award – Northeastern Illinois University - 2019  
Teaching and Resource Professional Service Excellence Award – Northeastern Illinois University – 2016  
Teaching and Resource Professional Teaching Excellence Award – Northeastern Illinois University – 2013  
Harvey DeBruine Award for Excellence in Biology – Elmhurst University – 2001

## **Publications**

Chrzanowski, M. M., Stryjek, R., Parsons, M. H., Verizhnikova, I., Majewski, P. M., Schirmer, A. E., & Bebas, P. (2025). Daily sperm release rhythms in wild geometer moths: comparative characteristics across ecologically diverse species. *Environmental Entomology*, *54*(6), 1348-1362.

Scislewska, P., Zareba, M. R., Lengier, J., Schirmer, A. E., Bebas, P., & Szatkowska, I. (2025). Eveningness and distinctness of the circadian rhythm in men are related to altered neural responses to gain and loss. *Scientific Reports*, *15*(1), 21091.

Scislewska, P., Zareba, M. R., Lengier, J., Schirmer, A. E., Bebas, P., & Szatkowska, I. (2025). Circadian rhythmicity and reinforcement processing: a dataset of MRI, fMRI, and behavioral measurements. *Scientific Data*, *12*(1), 823.

Schirmer, A., Wallis, L. C., Ahmed, S., Amaya, C. M., Crow, S., Husameddin, D., ... & Zaruszak, B. (2023). Connecting Underrepresented Scientists to the Biology Core Curriculum, Volume 1.. Chicago (IL): Northeastern Illinois University; [accessed 2023 Sep 27]. <https://neiudc.neiu.edu/oer/1/>

Schirmer A. E., Kumar V., Schook A., Song E. J., Marshall M. S. and Takahashi J. S. (2023). Cry1 expression during postnatal development is critical for the establishment of normal circadian period. *Front. Neurosci.* 17:1166137. doi: 10.3389/fnins.2023.1166137

Epiney, D., Salameh, C., Cassidy, D., Zhou, L., Kruithof, J., Milutinović, R., Andreani, T., et al. (2021). Characterization of Stress Responses in a Drosophila Model of Werner Syndrome. *Biomolecules*, *11*(12), 1868. <http://dx.doi.org/10.3390/biom11121868>

Dow E. G., Wood-Charlson E. M., Biller S. J., Paustian T., Schirmer A., Sheik C. S., Whitham J. M., Krebs R., Goller C. C., Allen B., Crockett Z. and Arkin A.P. (2021). Bioinformatic Teaching Resources – For Educators, by Educators – Using KBase, a Free, User-Friendly, Open Source Platform. *Front. Educ.* 6:711535. doi: 10.3389/educ.2021.711535

Smarr, B. L., Ishami, A. L., & Schirmer, A. E. (2021). Lower variability in female students than male students at multiple timescales supports the use of sex as a biological variable in human studies. *Biology of sex Differences*, *12*(1), 1-7.

Geddes, P., Murphy, L., Astudillo-Scalia, Y., Blasini, D., Nugent, S., Ríos, M.J., Schirmer, A.E. and Olfelt, J.P. (2021). Microsatellite Markers Reveal Unprecedented High Frequencies of Hybridization among Typha Species in the Midwestern US. *Wetlands*, *41*(2), pp.1-9.

Cassidy D, Epiney DG, Salameh C, Zhou LT, Salomon RN, Schirmer AE, McVey M, Bolterstein E. (2019) Evidence for premature aging in a Drosophila model of Werner syndrome. *Experimental gerontology*, *127*, 110733. doi: 10.1016/j.exger.2019.110733.

Schirmer, A. E. \*, Gallemore, C. \*, Liu, T. \*, Magle, S., DiNello, E., Ahmed, H., & Gilday, T. (2019). Mapping behaviorally relevant light pollution levels to improve urban habitat planning. *Scientific reports*, *9*(1), 1-13. \* authors contributed equally

Prete, F. R., Schirmer, A. E., Patel, S., Carrion, C., Prete, G. M., van Alphen, B., & Svenson, G. J. (2019). Rhythmic abdominal pumping movements in praying Mantises (Insecta: Mantodea). *Fragmenta entomologica*, *51*(1), 29-40. doi: <https://doi.org/10.4081/fe.2019.332>.

Smarr, B. L. and Schirmer, A. E. (2018). 3.4 million real-world learning management system logins reveal the majority of students experience social jet lag correlated with decreased performance. *Scientific Reports* *8*, 4793.

Kimble, M., Schirmer, A., Campbell T. (2015). General Genetics Laboratory Manual 2<sup>nd</sup> Edition. Dubuque: Kendall Hunt Publishing Company.

Lesniak, T, Schirmer, A, Knapp, C. (2014). Evaluating the Role of Temperature in the Reproduction of the Yellow Stingray (*Urobatis jamaicensis*). *Zoo Biology* 34: 33-39.

Schirmer, A. E., Prete, F. R., Mantes, E. S., Urdiales, A. F., Bogue, W. (2014) Circadian Rhythms Affect the Electroretinogram, Compound Eye Color, Striking Behavior, and Locomotion of the Praying Mantis, *Hierodula patellifera* (Serville). *The Journal of Experimental Biology* 217: 3853-3861.

Lesniak, T, Schirmer, A, Knapp, C. (2013). Ultrasound evidence of fetal resorption in the yellow stingray, *Urobatis jamaicensis* (Urotrygonidae). *Cybium*, 37(4): 314-316.

Kimble, M and Schirmer, A. (2012). General Genetics Laboratory Manual. Dubuque: Kendall Hunt Publishing Company.

Chen, R\*, Schirmer, A\*, Lee, Y, Lee, H, Kumar, V, & Yoo, S, et al. (2009). Rhythmic PER abundance defines a critical nodal point for negative feedback within the circadian clock mechanism. *Molecular Cell* 36, 417-430. \* authors contributed equally

## **Grants**

Spring 2025 - Microsatellites, Drones, and Leedy's Roseroot Conservation – Joel Olfelt and Aaron Schirmer funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2025 - Youth Chronotypes: Well-being Focus – Aaron Schirmer, Piotr Bebas, Patrycja Ściślewska funded by the U.S. Department of State and the Polish-American Fulbright Commission Award # FSP-P009706

Spring 2024 – Excellence Initiative – Research University Grant Action IV.3.1 – Piotr Bebas and Aaron Schirmer funded by the University of Warsaw Award # BOB-661-910/2024

Spring 2023 - The Impact of Photopollution on Urban Mammals - Aaron Schirmer funded by the Student Center for Science Engagement at Northeastern Illinois University.

Summer 2021 – RCN-UBE Incubator: Stem Research on Non-model Genomes Network - Nicholas Miller, Aaron Schirmer, and Molly M McDonough (co-principle investigators) Award # 2120626 funded by the National Science Foundation.

Spring 2020 – The Study of Metabolic Function in Two Metazoic species – Aaron Schirmer funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2019 - ERASMUS+ Mobility Fellowship to Warsaw Poland – Awarded to Aaron E. Schirmer by the Erasmus+ funding programme | European Commission.

Spring 2019 - The Impact of Photopollution on the Gut Microbiome - Aaron Schirmer funded by the Committee on Organized Research at Northeastern Illinois University.

Spring 2019 - Impacts of Photopollution and Social Jetlag on Mammalian Circadian Rhythms - Aaron Schirmer funded by the Student Center for Science Engagement at Northeastern Illinois University.

Fall 2019 - Julius N. Frankel Foundation Grant – Awarded to Elyse Bolterstein and Aaron Schirmer by the Julius N. Frankel Foundation.

Fall 2019 - Effects of Challenges to Circadian Rhythms on DNA Double-Strand Break Repair – Elyse Bolterstein, [Aaron Schirmer](#), Leslyn Hanakahi, and Ravi Allada – submitted as part of the Chicago CHEC U54 grant – Not funded.

Spring 2018 - Effects of Environmental Disruptions on Circadian Rhythms – [Aaron Schirmer](#) funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2017 - Summer 2017 Research Stipend – [Aaron Schirmer](#) funded by the Office of Graduate Studies and Research at Northeastern Illinois University.

Summer 2016 - SBIR Phase I: adaptive peer learning platform using crowd sourced video lessons from students – James Flannery (consultants [Aaron Schirmer](#) and Cindy Voisine) submitted to the National Science Foundation – Not funded.

Spring 2016 - Effects of Urban Photopollution on Mammalian Circadian Rhythms – [Aaron Schirmer](#) funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2015 - Behavioral and Spatial Patterns of Light Pollution in Chicago, IL – [Aaron Schirmer](#), Ting Liu, and Caleb Gallemore (co-principle investigators) A research community funded by the Office of Academic Affairs.

Spring 2015 - The Genetics of Circadian Rhythms in a Novel Insect (Praying Mantis) Model System – [Aaron Schirmer](#) and Frederick Prete (co-principle investigator) funded by the Committee on Organized Research at Northeastern Illinois University.

Spring 2015 – The Integration, Modulation and Hierarchical Control of Central Nervous System Arousal and Respiration – [Aaron Schirmer](#) and Frederick Prete (co-principle investigator) funded by the Title III grant at Northeastern Illinois University.

Spring 2014 – Molecular Underpinnings of Circadian Rhythms in the Praying Mantis Model System – [Aaron Schirmer](#) and Frederick Prete (co-principle investigator) funded by the Title III grant at Northeastern Illinois University.

Fall 2013 – Circadian and Metabolic Modulation of the Neural Networks Underpinning Visual Sensitivity and Object Recognition in the Sister Taxa *Mantodea* (Praying Mantises) and *Blattodea* (Cockroaches) – Frederick R. Prete, [Aaron E. Schirmer](#), and Anuj Muybai - A research community funded by the Office of Academic Affairs.

Summer 2013 - The Role of *Cryptochrome 1* in Neural Development – [Aaron Schirmer](#) (Principle investigator) funded by the Committee on Organized Research at Northeastern Illinois University.

Spring 2013 - Engineering Infrared Fluorescent Protein Markers for Imaging of Mammalian Cells – [Aaron Schirmer](#) and Emina A. Stojković (co-principle investigators) funded by the Title III grant at Northeastern Illinois University.

Spring 2013 - Elucidating Neural Networks Underpinning Object Recognition and its Circadian Modulation in the Praying Mantis – [Aaron Schirmer](#) and Frederick Prete (co-principle investigators) funded by the Title III grant at Northeastern Illinois University.

Spring 2013 - Use of next-generation sequencing approaches to develop molecular markers in the study of plants - Pamela Geddes, [Aaron Schirmer](#), Joel Olfelt, and Francisco Iacobelli - A research community funded by the Office of Academic Affairs.

Summer 2012 - The Role of the Circadian Gene *Cryptochrome 1* in Neural Development – [Aaron Schirmer](#) (Principle investigator) funded by the Committee on Organized Research at Northeastern Illinois University.

Spring 2012 - Circadian Modulation of Appetitive Behavior and Visual Sensitivity in Praying Mantises - [Aaron Schirmer](#) and Frederick Prete (co-principle investigator) funded by the CREAR grant at Northeastern Illinois University.

Spring 2012 - *In vivo* cell imaging with novel infrared fluorescent proteins - [Aaron Schirmer](#) and Emina A. Stojković (co-principle investigator) funded by the Student Center for Science Engagement at Northeastern Illinois University.

Fall 2011 - *In vivo* cell imaging with novel infrared fluorescent proteins – [Aaron Schirmer](#), Shubhangee Mungre, Emina A. Stojković (co-principle investigators) – A research community funded by the Office of Academic Affairs.

Spring 2011 - *In vivo* tissue imaging with novel infrared fluorescent proteins- [Aaron Schirmer](#) and Emina A. Stojković (co-principle investigator) funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2011 - Use of microsatellites in the identification of hybridizing cattail species - Pamela Geddes Joel Olfelt, and [Aaron Schirmer](#) (co-principle investigator) funded by the Student Center for Science Engagement at Northeastern Illinois University.

Spring 2010 - Molecular and Behavioral links between Circadian Rhythms and Anxiety Disorders – [Aaron Schirmer](#) (Principle investigator) funded by the Committee on Organized Research at Northeastern Illinois University.

Spring 2010 - Effects of Gasoline Additives on Aquatic Systems in Lake Michigan Harbors - Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger (co-principle investigator) funded by the Student Center for Science Engagement at Northeastern Illinois University.

### **National/International Presentations**

- 2025 SACNAS National Conference**, Columbus, OH  
Oral presentation entitled “Two-Dimensional High-Resolution Mapping and Modeling of Light Pollution in Urban Environments.” Eduardo Vaca, Alex W. Peimer, Aaron E. Schirmer.
- 2025 University of Warsaw Animal Physiology Department Seminar**, Warsaw, Poland  
Invited talk entitled “Data Science and Computational Biology in the Classroom.” [Aaron Schirmer](#)
- 2024 Society for Neuroscience Annual Meeting**, Chicago, IL  
Poster entitled "Exploring circadian rhythm distinctness: A role in reward and punishment processing." Patrycja Scislewska, Michal Rafał Zareba, Julia Lengier, [Aaron Schirmer](#), Piotr Bebas, Iwona Szatkowska.
- 2024 University of Warsaw Animal Physiology Department Seminar**, Warsaw, Poland  
Invited talk entitled "Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago." [Aaron E. Schirmer](#).
- 2024 Northwestern Univ. Center for Sleep and Circadian Biology Seminar Series**, Evanston, IL  
Invited seminar entitled “Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago.” [Aaron Schirmer](#).
- 2024 microBREW: Integrating Bioinformatics into the Undergraduate Classroom**, Online

- Flash talk entitled “Bioinformatics CURE: Utilizing metagenomics in the General Biology Classroom.” [Aaron Schirmer](#), Ellen G. Dow, Elisha Wood-Charlson, Adam Arkin.
- 2022** **13th International Conference on Environmental Mutagens**, Ottawa, Ontario, Canada  
Poster entitled “The Effects of Circadian Disruption on Behavior and Lifespan in *Drosophila melanogaster*.” Isaiah F Thomas, Gina Ishu, [Aaron Schirmer](#), Elyse Bolterstein.
- 2022** **University of Warsaw ERASMUS+ Colloquium**, Warsaw, Poland  
Invited talk entitled “Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago.” [Aaron E. Schirmer](#).
- 2021** **ABRCMS National Conference**, Virtual  
Poster entitled “Effect of Photopollution and Temperature on the Activity of *Drosophila melanogaster*.” Isaiah Thomas, Tetyana Perchyk, Elyse Bolterstein, and [Aaron E. Schirmer](#).
- 2020** **KBASE webinar**, Berkeley, CA  
Invited panelist [Aaron E. Schirmer](#).
- 2019** **Northwestern University Alumni Association Webinar**, Evanston, IL  
Invited webinar entitled “Social Jetlag, Chronotypes, & Performance.” [Aaron E. Schirmer](#).
- 2019** **ABRCMS National Conference**, Anaheim, CA  
Poster entitled “The Impact of Photopollution on Splitting Behavior in Mammalian Circadian Rhythms.” Mehdi Khan, Gabriela Naveda, [Aaron E. Schirmer](#).
- 2019** **Society for Neuroscience Annual Meeting**, Chicago, IL  
Poster entitled “Analysis of Learning Management System Logins Identifies Interactions Between Social Jetlag, Gender, and Academic Performance.” [Aaron E. Schirmer](#), Benjamin L. Smarr, Annick Laure Ishami, and Michael Vujnovich.
- 2019** **SACNAS National Conference**, Honolulu, HI  
Poster entitled “Effects of Photopollution on Mammalian Glucocorticoid Production.” Karla S. Solis, Gabriela Nevada, Rachel M. Santymire, [Aaron E. Schirmer](#).
- Poster entitled “The Impact of Seasonality and Social Jetlag on Academic Performance.” Michael A. Vujnovich, Annick Laure Ishami, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- 2018** **SACNAS National Conference**, San Antonio, TX  
Poster entitled “Seasonal Patterns of Social Jetlag and Academic Performance between Different Genders.” Annick Laure Ishami, Michael Vujnovich, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- Poster entitled “Seasonal Patterns of Learning Management System Logins Interact with Chronotype and Social Jet Lag to Impact Academic Performance.” Michael A. Vujnovich, Annick Laure Ishami, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- Poster entitled “Effect of Photopollution on the Activity of *Drosophila Melanogaster*.” Tetyana Perchyk, Elyse Bolterstein, [Aaron Schirmer](#).
- Poster entitled “Effects of Cover Access on the Circadian Locomotor Rhythms of Mice.” Gabriela Naveda, Elisabeth DiNello, Humerah Ahmed, Caleb Gallemore, Ting Liu, [Aaron Schirmer](#).
- 2018** **Society for Research on Biological Rhythms Conference**, Amelia Island, Florida  
Poster entitled “Mining Millions of Real-world University Logins to Find Social Jetlag’s Impact Across Demographics.” Benjamin Smarr and [Aaron Schirmer](#).
- 2016** **SACNAS National Conference**, Long Beach, CA

- Poster entitled “Effects of Urban Photopollution on Mammalian Behavior.” Elisabeth DiNello, Humerah Ahmed, Caleb Gallemore, Ting Liu, [Aaron Schirmer](#).
- 2015 SACNAS National Conference**, Washington, DC  
Poster entitled “First Analysis of the Unique Breathing Patterns in the Praying Mantis (Insecta: Mantodea).” Veronica Skital, Salim Patel, Christina Carrion, Gregory Prete, Emily Fioramonti, Bart van Alphen, [Aaron Schirmer](#), Frederick Prete.
- 2015 Society for Neuroscience Annual Meeting**, Chicago, IL  
Poster entitled “The circadian modulation of physiology in the praying mantis: A novel insect model system.” [Aaron E. Schirmer](#), Frederick R. Prete, Edgar S. Mantes, Wil Bogue, Andrew F. Urdiales, Salim A. Patel, Christina Carrion, Greg Prete, and Veronica M. Skital.
- 2014 SACNAS National Conference**, Los Angeles, CA  
Poster entitled “First Description of Discontinuous Respiration in The Praying Mantis *Hierodula Patellifera*.” Salim Patel, Christina Carrion, Emily Fioramonti, Greg Prete, Bart van Alphen, Frederick R. Prete, [Aaron Schirmer](#).
- Poster entitled “Identification of The Period Gene in The Praying Mantis *Hierodula Patellifera*.” Emily Fioramonti, Greg Prete, Christina Carrion, Salim Patel, Frederick Prete, [Aaron Schirmer](#).
- 2014 Society for Research on Biological Rhythms Conference**, Big Sky, MT  
Poster presentation entitled "First description of circadian rhythms in visual sensitivity, predatory behavior, and locomotion in a praying mantis." [Aaron Schirmer](#), Frederick Prete, Edgar Mantes, Wil Bogue, and Andrew Urdiales.
- Poster presentation entitled “Utilizing Electroretinograms (ERG) to Analyze Circadian Rhythms in *Gromphadorhina portentosa* Photoreceptor Sensitivity.” Wil Bogue, Andrew Urdiales, Edgar Mantes, [Aaron Schirmer](#), Frederick Prete.
- 2014 2014 Emerging Researchers National Conference in STEM, Washington, DC**  
Poster entitled “The First Analysis of the Electroretinogram in *Gromphadorhina portentosa*.” Wil Bogue, Andrew Urdiales, Edgar Mantes, [Aaron Schirmer](#), Frederick Prete.
- 2013 SACNAS National Conference**, San Antonio, TX  
Poster entitled “Structural and sequence analysis of a bacteriophytochrome from the myxobacterium *Stigmatella aurantiaca*.” Kevin D. Gallagher, Hardik Patel, Nicole C. Weitowich, Svetlana E. Kovaleva, Rachael St. Peter, Wesley B. Ozarowski, Cynthia N. Hernandez, [Aaron E. Schirmer](#), and Emina A. Stojković.
- Poster entitled “Design of an infrared fluorescent protein marker for *in vivo* imaging in mammals.” Alexandra Cabanov, Stephanie Puetz, Jacqueline Meraz, Angela E. Varela, Brigitte Igova, Anna Baker, John T.M. Kennis, [Aaron E. Schirmer](#), and Emina A. Stojkovic.
- Poster entitled “Structural and Sequence Analyses of an Unusual Bacteriophytochrome From *R. Palustris*.” Nima A. Missaghian, Cynthia N. Hernandez, Angela E. Varela, Marcella M. Marcus, Rachel King, [Aaron E. Schirmer](#) and Emina A. Stojković.
- 2012 SACNAS National Conference**, Seattle, WA  
Poster entitled “First Analysis of Circadian Rhythms in the ERG, Compound Eye Pigment Migration, and Responses to Prey-Like Stimuli in the Praying Mantis, *Hierodula Multispina* (Insecta: Mantodea).” Edgar Mantes, Wil Bogue, Barbara Popkiewicz, Andrew Urdiales, Frederick Prete, and [Aaron Schirmer](#).
- Poster entitled “Intra-Population Variability in Microsatellite Markers for Cattail Species.” Salina Wunderle, Yaiyr Astudillo-Scalia, Pamela Geddes, Joel Olfelt, [Aaron Schirmer](#).

- Poster entitled "Structure-Based Engineering of an Infrared Fluorescent Protein Marker." Jacqueline Meraz, Angela E. Varela, Stephanie Puetz, Anna Baker, John Kennis, [Aaron E. Schirmer](#), and Emina A. Stojkovic.
- Poster entitled "Structural and Sequence Analyses of an Unusual Bacteriophytochrome from *R. Palustris*." Nima A. Missaghian, Cynthia N. Hernandez, Angela E. Varela, Marcella M. Marcus, Rachel King, [Aaron E. Schirmer](#), and Emina A. Stojkovic.
- Poster entitled "First Analysis of the Electroretinogram in the Madagascar Hissing Cockroach *Gromphadorhina Protentosa*." Andrew Urdiales, Wil Bogue, [Aaron Schirmer](#), and Frederick Prete.
- Poster entitled "The First Analysis of The Electroretinogram in Three Species of Praying Mantis (Insecta: Mantodea)." Barbara Popkiewicz, Edgar Mantes, Frederick R. Prete, and [Aaron Schirmer](#).
- Poster entitled "Characterization of a Red-Light Photoreceptor in the Life Cycle of Myxobacterium *Stigmatella Aurantiaca*." Kevin D. Gallagher, Hardik K. Patel, Nicole C. Woitowich, Svetlana E. Kovaleva, Rachael St. Peter, Wesley B. Ozarowski, Cynthia N. Hernandez, [Aaron E. Schirmer](#), Emina A. Stojkovic.
- 2012 Regional Aquatics Workshop (RAW), Chicago, IL**  
Oral presentation entitled "The Effects of Temperature on *Urobatis Jamaicensis* (Urotrygonidae) Reproduction." Tess Capen, [Aaron Schirmer](#), Charles Knapp.
- 2012 Ivy-Plus Stem Symposium & Workshops for Diverse Scholars.** Philadelphia, PA  
Poster entitled "Intra-Population Variability in Microsatellite Markers of Cattail Species." Yaiyr Astudillo-Scalia, Salina Wunderle, Pamela Geddes, Joel Olfelt, and [Aaron Schirmer](#).
- 2011 SACNAS National Conference, San Jose, CA**  
Poster entitled "Use of Microsatellites in the Identification of Hybridizing Cattail Species in the *Typha* Genus (*T. Angustifolia*, *T. Latifolia*, and *T. X Glauca*)." Yaiyr Astudillo-Scalia, Jennifer Shaier, Salina Wunderle, Pamela Geddes, Joel Olfelt, and [Aaron Schirmer](#).
- Poster entitled "Identifying Novel Fluorescent Bio-Markers." Rachael St. Peter, Svetlana E. Kovaleva, Nicole C. Woitowich, Cynthia Hernandez, [Aaron Schirmer](#), Emina Stojkovic.
- Poster entitled "Design of an Infrared Fluorescent Marker for In Vivo Tissue Imaging in Mammals." Angela Varela, Anna W. Baker, John T. M. Kennis, [Aaron Schirmer](#), and Emina A. Stojkovic.
- Poster entitled "Crystal Structures of a Bacteriophytochrome from *Stigmatella Aurantiaca* Reveal Amino Acids that Modulate Photoconversion." Svetlana E. Kovaleva, Nicole C. Woitowich, Wesley B. Ozarowski, [Aaron Schirmer](#), Emina A Stojkovic.
- Poster entitled "Circadian Rhythms in the Mantis, *Sphodromantis Lineola*." Jessica Dominguez, Andrea Salis, Taylor Slapinski, Damien Laudier, [Aaron Schirmer](#), Frederick R. Prete.
- 2010 SACNAS National Conference, Anaheim, CA**  
Poster entitled "Identification and Quantification of Gasoline Additives in Lake Michigan Harbors." Steve Ryan, Matthew Deisinger, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

Poster entitled "Presence, Distribution, and Potential Sources of Gasoline Additives in Lake Michigan Recreational Boat Harbors." JJ Mulliken, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

Poster entitled "Effects of Gasoline Additives on Aquatic Biota in Lake Michigan Harbors: A Behavioral Study on *Daphnia Magna*." Jeny Semoon, Sumitra Gurung, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

- 2008 Society for Research on Biological Rhythms, Destin, FL**  
Poster entitled "The Role of the Negative Feedback Loop Genes, Cryptochrome and Period, in Circadian Rhythmicity." [Aaron Schirmer](#), Vivek Kumar, Michael Marshall, Eun-Joo Song, Andrew Schook, and Joseph Takahashi.

### **Regional Presentations**

- 2025 15th Annual Student Center for Science Engagement Research Symposium, Chicago, IL**  
Oral presentation entitled "USING DRONES, COMPUTER VISION AND AI TO ASSIST LEEDY'S ROSEROOT (*Rhodiola integrifolia ssp. leedyi*) CENSUSING." Kage Guare, Samantha Sandoval, Othello Senecharles, Aaron Schirmer, and Joel Olfelt.
- 2025 NEIU student research and creative activities symposium, Chicago, IL**  
Poster entitled "Two-Dimensional High-Resolution Mapping and Modeling of Light Pollution in Urban Environments." Eduardo Vaca, Alex W. Peimer, Aaron E. Schirmer.
- 2025 Governor State University Colloquium Series, University Park, IL**  
Invited seminar entitled "Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago." [Aaron E. Schirmer](#).
- 2024 John Sargon Albazi Student Res. and Creative Activities Symposium, Chicago, IL**  
Oral presentation entitled "Photopollution Effects on Urban Wildlife Circadian Rhythm." Jon Scott-Haines, Sarah Alfaqih, Aaron Schirmer, Caleb Gallemore, Ting Liu, Seth Magle.
- 2024 Northwestern Univ. Center for Sleep and Circadian Biology Seminar Series, Evanston, IL**  
Invited seminar entitled "Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago." [Aaron E. Schirmer](#).
- 2024 Illinois LSAMP symposium, Schaumburg, IL**  
Oral presentation entitled "Photopollution Effects on Urban Wildlife Circadian Rhythms" Jon Scott-Haines, Sarah Alfaqih, [Aaron Schirmer](#), Ting Liu, Caleb Gallemore, Seth Magle.
- 2024 Chicago Symposium Series on Excellence in Math and Science Education, Chicago, IL**  
Oral presentation entitled "Genomics CUREs for the Undergraduate Classroom." [Aaron Schirmer](#), Ellen G. Dow, Cindy Voisine, Molly McDonough, Nick Miller, Elisha Wood-Charlson, Adam Arkin.
- 2023 15th Annual Student Center for Science Engagement Research Symposium, Chicago, IL**  
Oral presentation entitled "Temporal analysis of the impact of photopollution on urban mammals' activity patterns." Sarah Alfaqih, Jon Scott-Haines, [Aaron Schirmer](#), Ting Liu, Caleb Gallemore, Seth Magle.
- Oral presentation entitled "Photopollution effects on urban wildlife circadian rhythm." Jon Scott-Haines, Sarah Alfaqih, [Aaron Schirmer](#), Ting Liu, Caleb Gallemore, Seth Magle.
- 2023 Chicago Symposium Series on Excellence in Math and Science Education, Chicago, IL**  
Oral presentation entitled "StRoNG Net: Advancing STEM Learning Through Non-Model Genome Research." [Aaron Schirmer](#), Cindy Voisine, Molly McDonough, and Nick Miller.

- 2022 Bernard J. Brommel Research Professor Award Seminar, Chicago, IL**  
Invited talk entitled "Circadian Rhythms, Photopollution, and Social Jet Lag in Chicago." [Aaron E. Schirmer](#).
- 2021 Loyola Neuroscience Journal Club, Chicago, IL**  
Invited virtual presentation entitled "Social Jetlag, Chronotypes, & Performance." [Aaron Schirmer](#).
- 2021 Triton College, River Grove, IL**  
Invited virtual presentation entitled "Social Jetlag, Chronotypes, & Performance." [Aaron Schirmer](#).
- 2020 Northwestern Alumni Association Mentor Circle, Evanston, IL**  
Invited webinar entitled "Teaching, Research, and Service: An Inside Look at the Tenure Process at Primarily Undergraduate Institutions." [Aaron Schirmer](#).
- 2020 12th Annual Student Center for Science Engagement Research Symposium, Chicago, IL**  
Oral presentation entitled "Effects of Photopollution on Mammalian Glucocorticoid Production." Karla S. Solis, Gabriela Nevada, Rachel M. Santymire, [Aaron E. Schirmer](#).
- 2020 Spring Symposium in STEM, Lisle, IL**  
Oral presentation entitled "Gender differences in login stability and academic performance." Annick Laure Ishami, Michael Vujnovich, Benjamin L. Smarr, and [Aaron E. Schirmer](#).
- 2019 10th Annual Faculty Research & Creative Activities Symposium, Chicago, IL**  
Oral presentation entitled "Effects of Photopollution on Circadian Activity Rhythms." [Aaron Schirmer](#), Elisabeth DiNello, Gabriela Nevada, Tetyana Perchyk, Humerah Ahmed, Seth Magle, Elyse Bolterstein, Caleb Gallemore, Ting Liu.
- 2019 Lincoln Park Zoo Symposium Series, Chicago, IL**  
Invited seminar entitled "Effects of Photopollution on Circadian Activity Rhythms." [Aaron Schirmer](#).
- 2019 11<sup>th</sup> Annual Student Center for Science Engagement Research Symposium, Chicago, IL**  
Oral presentation entitled "Gender Differences in the Stability of Login Times and Academic Performance." Annick Laure Ishami, Michael Vujnovich, Benjamin L. Smarr, and [Aaron E. Schirmer](#).
- Poster entitled "Effects of Photopollution on Mammalian Glucocorticoid Production." Karla S. Solis, Gabriela Nevada, Rachel M. Santymire, [Aaron E. Schirmer](#).
- Poster entitled "The Impact of Seasonality and Social Jetlag on Academic Performance." Michael A. Vujnovich, Annick Laure Ishami, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- 2019 27<sup>th</sup> Annual Student Research & Creative Activities Symposium, Chicago, IL**  
Oral presentation entitled "Seasonal Patterns of Learning Management System Logins Interact with Chronotype, Social Jet Lag, and Gender to Impact Academic Performance." Michael Vujnovich, Annick Laure Ishami, and [Aaron Schirmer](#).
- Oral presentation entitled "Effect of Photopollution on the Activity of *Drosophila melanogaster*." Tetyana Perchyk and [Aaron Schirmer](#).
- 2018 10<sup>th</sup> Annual Student Center for Science Engagement Research Symposium, Chicago, IL**

- Oral presentation entitled “Effects of Photopollution on Circadian Activity Rhythms.” Gabriela Naveda, Tetyana Perchyk, Elyse Bolterstein, Elisabeth DiNello, Humerah Ahmed, Caleb Gallemore, Ting Liu, [Aaron Schirmer](#).
- Poster entitled “Seasonal Patterns of Social Jetlag and Academic Performance between Different Genders.” Annick Laure Ishami, Michael Vujnovich, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- Poster entitled “Seasonal Patterns of Learning Management System Logins Interact with Chronotype and Social Jet Lag to Impact Academic Performance.” Michael A. Vujnovich, Annick Laure Ishami, Benjamin L. Smarr, [Aaron E. Schirmer](#).
- 2018 NEIU Open Access Panel Discussion**, Chicago, IL  
Invited panelist [Aaron E. Schirmer](#).
- 2018 Chicago Symposium Series on Excellence in Math and Science Education**, Chicago, IL  
Table presentation entitled “The use of Novel Online Peer Learning Platforms to Enhance Student Engagement in the Classroom.” [Aaron Schirmer](#) and Cindy Voisine.
- 2018 Youth Organization for Lights Out**, Chicago, IL  
Invited seminar entitled “Effects of Urban Photopollution on Mammalian Behavior and Wildlife Activity Patterns.” [Aaron Schirmer](#).
- 2018 26<sup>th</sup> Annual Student Research & Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “Effects of Cover Access on The Circadian Locomotor Rhythms of Mice.” Gabriela Naveda and [Aaron Schirmer](#).
- 2017 25<sup>th</sup> Annual Student Research & Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “Effects of Urban Photopollution on Mammalian Circadian Behavior.” Elisabeth DiNello, Humera Ahmed, Caleb Gallemore, Ting Liu, [Aaron Schirmer](#).
- 2016 Youth Organization for Lights Out**, Chicago, IL  
Invited seminar entitled “Effects of Urban Photopollution on Mammalian Behavior and Wildlife Activity Patterns.” [Aaron Schirmer](#).
- 2016 College of Arts and Sciences Brown Bag**, Chicago, IL  
Invited talk entitled: “Effects of Urban Photopollution on Mammalian Behavior and Wildlife Activity Patterns.” [Aaron Schirmer](#), Caleb Gallemore, Ting Liu, Elisabeth DiNello, Humerah Ahmed.
- 2016 8<sup>th</sup> Annual Student Center for Science Engagement Research Symposium**, Chicago, IL  
Oral presentation entitled “Effects of Urban Photopollution on Mammalian Behavior and Wildlife Activity Patterns.” Elisabeth DiNello, Humerah Ahmed, Caleb Gallemore, Ting Liu, [Aaron Schirmer](#).
- 2016 24<sup>th</sup> Annual Student Research & Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “Effects of Urban Photopollution on Mammalian Behavior.” Elisabeth DiNello, Ting Liu, [Aaron Schirmer](#), Caleb Gallemore.
- 2015 6<sup>th</sup> Annual Faculty Research and Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “The Circadian Modulation of Physiology in the Praying Mantis: A Novel Insect Model System.” [Aaron E. Schirmer](#), Frederick R. Prete, Bart vanAlphen, Edgar S. Mantes, Wil Bogue, Andrew F. Urdiales, Salim A. Patel, Christina Carrion, Greg Prete, and Veronica M. Skital.
- 2015 7<sup>th</sup> Annual Student Center for Science Engagement Research Symposium**, Chicago, IL

- Oral presentation entitled “The Integration, Modulation and Hierarchical Control of Central Nervous System Arousal and Respiration in the Praying Mantis. Emily Fioramonti, Veronica Skital, Greg Prete, Salim Patel, Bart van Alphen, [Aaron Schirmer](#), Frederick Prete.
- 2015 NEIU 23rd Annual Student Research & Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “Respiratory Patterns in the Praying Mantises.” Salim Patel, Christina Carrion, Emily Fioramonti, Greg Prete, Bart van Alphen, Frederick R. Prete, [Aaron Schirmer](#).
- Oral presentation entitled “Identification of the Period gene in the Mantodea.” Emily Fioramonti, Greg Prete, Christina Carrion, Salim Patel, Frederick Prete, [Aaron Schirmer](#).
- 2014 SCSE Research Symposium**, Chicago, IL  
Poster presentation entitled “First Description of Discontinuous Respiration in the Praying Mantis *Hierodula patellifera*” Salim Patel, Christina Carrion, Emily Fioramonti, Greg Prete, Bart van Alphen, Frederick R. Prete, and [Aaron Schirmer](#).
- Oral presentation entitled “Identification of the Period gene in the Mantodea.” Emily Fioramonti, Greg Prete, Christina Carrion, Salim Patel, Frederick Prete, [Aaron Schirmer](#).
- 2014 NEIU 22st Annual Student Research & Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “The Electroretinogram of the Madagascar Hissing Cockroach (*Gromphadorhina Portentosa*) Is Modulated by Both Ambient Light and Circadian Rhythms W. Bogue, A. Urdiales, E. Mantes, Frederick Prete, and [Aaron Schirmer](#).
- 2014 University of Wisconsin Whitewater Colloquium Series**, Whitewater, WI  
Invited seminar entitled "Circadian Rhythms in the Praying Mantis, *Hierodula patellifera*." [Aaron Schirmer](#).
- 2014 Animal Behavior Conference**, Bloomington, IN  
Poster entitled “First Analysis of the Electroretinogram of the Madagascar Hissing Cockroach (*Gromphadorhina Portentosa*).” W. Bogue, A. Urdiales, E. Mantes, F. Prete, [A. Schirmer](#).
- 2013 Northwestern Univ. Center for Sleep and Circadian Biology Seminar Series**, Evanston, IL  
Invited seminar entitled “Circadian Rhythms in the Praying Mantis, *Hierodula patellifera*.” [Aaron Schirmer](#).
- 2013 Northpark Village Advisory Council**, Chicago, IL  
Invited seminar entitled “Photopollution and Circadian Clocks.” [Aaron Schirmer](#).
- 2013 Faculty Research and Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled “Circadian Rhythms in *Hierodula patellifera* (Insecta: Mantodea).” [Aaron E. Schirmer](#), Frederick R. Prete, Edgar S. Mantes, Wil Bogue, and Andrew F. Urdiales.
- 2013 The SCSE Fifth Annual Research Symposium**, Chicago, IL  
Oral presentation entitled “Design of an Infrared Fluorescent Protein Marker for *In Vivo* Imaging in Mammals.” Alexandra Cabanov, Stephanie Puetz, Jacqueline Meraz, Angela E. Varela, Brigitte Igova, Anna Baker, John T. M. Kennis, [Aaron E. Schirmer](#), and Emina A. Stojkovic.
- Oral presentation entitled “Oscillations in Optic Lobe Sensitivity, Respiratory Physiology, and Locomotor Behavior in Representatives of Two Closely Related Sister Taxa, the *Blattodea* (Cockroaches) and the *Mantodea* (Praying Mantises).” Edgar S. Mantes, Wil D. Bogue, Andrew F. Urdiales, Maria I. Garcia, Frederick R. Prete, and [Aaron E. Schirmer](#).
- Poster entitled “Characterization of a Red-Light Photoreceptor in the Lifecycle of the Myxobacterium *Stigmatella Aurantiaca*.” Kevin D. Gallagher, Dorina Bizhga, Hardik K. Patel,

- Nicole C. Woitowich, Svetlana E. Kovaleva, Rachael St. Peter, Wesley B. Ozarowski, Cynthia N. Hernandez, [Aaron E. Schirmer](#), and Emina A. Stojkovic.
- Poster entitled “Responses to Prey-like Stimuli can be affected by prior visual experience in the praying mantises *Parasphendale Affinis* and *Sphodromantis Lineola*.” Maria I. Garcia, Edgar S. Mantes, Wil D. Bogue, Andrew F. Urdiales, Frederick R. Prete, and [Aaron Schirmer](#).
- 2013 21<sup>st</sup> Annual Student Research and Creative Activities Symposium**, Chicago, IL  
 Oral presentation entitled “First Analysis of the Electroretinogram in the Madagascar Hissing Cockroach (*Gromphadorhina Portentosa*).” Wil Bogue, Andrew Urdiales, Edgar Mantes, Frederick Prete, and [Aaron Schirmer](#).
- Oral Presentation entitled “The Effects of Circadian Rhythms on *Heirodula Multispina* and *Sphodromantis Lineola* (Insect: Mantodea).” Edgar S. Mantes, Wil Bogue, Barbara W. Popkiewicz, Andrew F. Urdiales, Frederick Prete, and [Aaron Schirmer](#).
- Oral Presentation entitled “The Role of the Circadian Gene *Cryptochrome 1* in Neural Development.” Jessica R. Benyukhis, Robert F. Levendosky, [Aaron Schirmer](#), and Cheryl Park.
- Oral Presentation entitled “Characterization of a Red Light Photoreceptor in the Life Cycle of the Myxobacterium *Stigmatella Aurantiaca*.” Kevin D. Gallagher, Hardik Patel, Nicole C. Woitowich, Svetlana E. Kovaleva, Rachael St. Peter, Wesley B. Ozarowski, Cynthia N. Hernandez, [Aaron Schirmer](#), and Emina Stojkovic.
- 2013 Spring Symposium & Research Conference in STEM**, Chicago, IL  
 Poster entitled “First Analysis of the Electroretinogram in the Madagascar Hissing Cockroach (*Gromphadorhina portentosa*).” Wil Bogue, Andrew Urdiales, Edgar Mantes, Frederick Prete, and [Aaron Schirmer](#).
- 2013 20<sup>th</sup> Annual Indiana University Animal Behavior Conference**, Bloomington, IN  
 Oral Presentation entitled “Circadian Rhythms Modulate Behaviors of The Praying Mantis, *Hierodula Multispina*, At Various Levels of Analysis: Retinal Physiology, Locomotion, And Prey Catching Behavior.” Edgar S. Mantes, Wil Bogue, Barbara W. Popkiewicz, Andrew F. Urdiales, Frederick Prete, and [Aaron Schirmer](#).
- Poster entitled “Adaptations to Life in the Dark: The Effects of Stimulus Duration, Intensity, and Circadian Rhythms on Photoreceptor Responses in the Madagascar Hissing Cockroach (*Gromphadorhina Portentosa*).” Wil Bogue, Andrew Urdiales, Edgar Mantes, [Aaron Schirmer](#), and Frederick Prete.
- 2012 Faculty Research and Creative Activities Symposium**, Chicago, IL  
 Oral presentation entitled “Circadian Behavior and Physiological Rhythms in the Praying Mantis, *Hierodula Multispina*.” Edgar Mantes, Wil Bogue, Barbara Popkiewicz, Andrew Urdiales, Frederick Prete, and [Aaron Schirmer](#).
- Oral presentation entitled “Are Praying Mantises Really Like People?” Frederick R. Prete and [Aaron E. Schirmer](#).
- 2012 Wisconsin Wetlands Association’s 17th Annual Conference**, Lake Geneva, WI  
 Oral presentation entitled “Use of microsatellites in the identification of hybridizing cattail species in the *Typha* genus.” Geddes, Pamela, Yaiyr Astudillo-Scalia, Jennifer Shaier, Salina Wunderle, Joel Olfelt, [Aaron Schirmer](#).
- 2012 SCSE Fourth Annual Research Symposium**, Chicago, IL

Oral presentation entitled "Evidence for Circadian Rhythms in a Previously Untested Taxon: A Temporal Analysis of the ERG, Compound Eye Pigment Migration, and Responses to Prey-Like Stimuli in the Praying Mantis, *Hierodula Multispina* (Insecta: Mantodea)." Edgar Mantes, Wil Bogue, Barbara Popkiewicz, Andrew Urdiales, Frederick Prete, and [Aaron Schirmer](#).

Oral presentation entitled "The Effects of Stimulus Duration, Stimulus intensity, and Circadian Rhythmicity on the Electroretinogram of the Madagascar hissing Cockroach (*Gromphadorhina portentosa*)." Wil Bogue, Andrew Urdiales, Edgar Mantes, Frederick Prete, and [Aaron Schirmer](#).

Oral presentation entitled "Characterization of a Red-Light Photoreceptor in the Life Cycle of Myxobacterium *Stigmatella Aurantiaca*." Kevin D. Gallagher, Hardik K. Patel, Nicole C. Woitowich, Svetlana E. Kovaleva, Rachael St. Peter, Wesley B. Ozarowski, Cynthia N. Hernandez, [Aaron E. Schirmer](#), Emina A. Stojkovic.

Oral presentation entitled "Engineering an Infrared Fluorescent Protein Marker for *In Vivo* Tissue Imaging in Mammals." Stephanie Puetz, Jacqueline Meraz, Angela E. Varela, Brigitte Igova, Anna Baker, John Kennis, [Aaron E. Schirmer](#), and Emina A. Stojkovic.

Oral presentation entitled "Structural and Sequence Analyses of an Unusual Bacteriophytochrome from *R. Palustris*." Nima A. Missaghian, Cynthia N. Hernandez, Angela E. Varela, Marcella M. Marcus, Rachel King, [Aaron Schirmer](#), and Emina A. Stojkovic.

Poster entitled "The First Analysis of The Electroretinogram in Three Species of Praying Mantis (Insecta: Mantodea)." Barbara Popkiewicz, Edgar Mantes, Aaron Schirmer, and Frederick R. Prete.

**2012 20<sup>th</sup> Annual Student Research and Creative Activities Symposium, Chicago, IL**

Oral presentation entitled "The First Analysis of the ERG in Praying Mantises." Barbara Popkiewicz, Robert Theis, [Aaron Schirmer](#), and Frederick Prete.

Oral presentation entitled "Field to Lab and Back: Molecular Techniques to Identify Invasive Cattails." Salina Wunderle, Jennifer Shaier, Yaiyr Astudillo-Scalia, Pamela Geddes, Joel Olfelt, and [Aaron Schirmer](#).

Poster presentation entitled "Design of an Infrared Fluorescent Marker for In Vivo Tissue Imaging in Mammals." Angela Varela, Anna W. Baker, John T. M. Kennis, [Aaron Schirmer](#), and Emina A. Stojkovic.

Poster presentation entitled "Identifying Novel Fluorescent Bio-Markers." Rachael St. Peter, Svetlana E. Kovaleva, Nicole C. Woitowich, Cynthia Hernandez, [Aaron Schirmer](#), Emina Stojkovic.

Poster presentation entitled "Crystal Structures of a Bacteriophytochrome from *Stigmatella Aurantiaca* Reveal Amino Acids that Modulate Photoconversion." Svetlana E. Kovaleva, Nicole C. Woitowich, Wesley B. Ozarowski, [Aaron Schirmer](#), Emina A. Stojkovic.

**2012 Spring Symposium & Research Conference in STEM, Chicago, IL**

Oral presentation entitled "From Genes to Ecosystems: Using Microsatellite Markers to Identify Problematic Invasive Plants." Yaiyr Astudillo-Scalia, Jennifer Shaier, Salina Wunderle, Pamela Geddes, Joel Olfelt, and [Aaron Schirmer](#).

Oral presentation entitled "Design of an Infrared Fluorescent Marker for In Vivo Tissue Imaging in Mammals." Angela Varela, Anna W. Baker, John T. M. Kennis, [Aaron Schirmer](#), and Emina A. Stojkovic.

- 2011 Faculty Research and Creative Activities symposium**, Chicago, IL  
Presentation entitled "Circadian Rhythms in Behavior and Physiology." Anna W. Baker, Jessica M. Dominguez, Andrea Salis, Taylor Slapinski, Robert Theis, Angela E. Varela, Frederick R. Prete, Emina A. Stojković, and [Aaron E. Schirmer](#).
- 2011 SCSE Third Annual Research Symposium**, Chicago, IL  
Oral presentation entitled "Circadian Rhythmicity in Locomotor Activity but not in Responses to Visual Stimuli in Two Species of Praying Mantis: *Sphodromantis Lineola* and *Popa Spurca*." Jessica M. Dominguez, Robert Theis, Andrea Salis, Taylor Slapinski, [Aaron Schirmer](#), and Frederick R. Prete.  
  
Oral presentation entitled "Use of Microsatellites in the Identification of Hybridizing Cattail Species in the *Typha* Genus (*T. Angustifolia*, *T. Latifolia*, and *T. X Glauca*)." Yaiyr Astudillo-Scalia, Jennifer Shaier, Salina Wunderle, Pamela Geddes, Joel Olfelt, and [Aaron Schirmer](#).  
  
Oral presentation entitled "Design of an Infrared Fluorescent Marker for In Vivo Tissue Imaging in Mammals." Angela Varela, Anna W. Baker, John T. M. Kennis, [Aaron Schirmer](#), and Emina A. Stojkovic.
- 2011 SACNAS Midwest Regional Meeting**, Chicago, IL  
Poster entitled "X-Ray Crystallographic Structure of a Bacteriophytochrome from *Stigmatella Aurantiaca*." Nicole C. Woitowich, Wesley Ozarowski, [Aaron Schirmer](#), and Emina A. Stojković.  
  
Poster entitled "Identification and Quantification of Gasoline Additives in Lake Michigan Harbors." Matthew Deisinger, J. J. Mulliken, Sumitra Gurung, Steve Ryan, Jeny Semoon, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.  
  
Poster entitled "Identification and Quantification of Gasoline Additives in Lake Michigan Harbors." Steve Ryan, Matthew Deisinger, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.  
  
Poster entitled "Presence, Distribution, and Potential Sources of Gasoline Additives in Lake Michigan Recreational Boat Harbors." JJ Mulliken, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.
- 2011 19<sup>th</sup> Annual Student Research and Creative Activities Symposium**, Chicago, IL  
Oral presentation entitled "Circadian Rhythmicity of Locomotor and Predatory Behavior in Mantis, *Sphodromantis Lineola*." Jessica M. Dominguez, Sarah M. Vorpahl, Frederick R. Prete, and [Aaron Schirmer](#).  
  
Oral presentation entitled "Molecular and Behavioral Links between Circadian Rhythms and Anxiety Disorders." Nicole C. Woitowich and [Aaron E. Schirmer](#).  
  
Oral presentation "Effects of Gasoline Additives on Aquatic Systems in Lake Michigan Harbors: A Biogeochemical Study." Matthew Deisinger, J. J. Mulliken, Sumitra Gurung, Steve Ryan, Jeny Semoon, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.  
  
Oral presentation entitled "Advancing High School Biology Curriculum through Recombinant DNA Technology." Selina A. Phan, Neelima A. Kurian, and [Aaron E. Schirmer](#).
- 2010 SCSE Second Annual Research Symposium**, Chicago, IL 2010  
Oral presentation entitled "Effects of Gasoline Additives on Aquatic Systems in Lake Michigan Harbors: A Biogeochemical Study." Matthew Deisinger, Sumitra Gurung, JJ Mulliken, Steve Ryan, Jeny Semoon, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

Poster presentation entitled "Presence, Distribution, and Potential Sources of Gasoline Additives in Lake Michigan Recreational Boat Harbors." JJ Mulliken, Kristen Veldman, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

Poster presentation entitled "Effects of Gasoline Additives on Aquatic Biota in Lake Michigan Harbors: A Behavioral Study on *Daphnia Magna*." Jeny Semoon, Sumitra Gurung, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

Poster presentation entitled "Identification and Quantification of Gasoline Additives in Lake Michigan Harbors." Steve Ryan, Matthew Deisinger, Pamela Geddes, Kenneth T. Nicholson, [Aaron Schirmer](#), and Ken M. Voglesonger.

- 2010 Northeastern Illinois University First Annual Faculty Research Symposium**, Chicago, IL  
Oral presentation entitled "The Role of Period 2 Oscillations in the Generation of Circadian Rhythms." [Aaron Schirmer](#), Rongmin Chen, Yongjin Lee, Hyeongmin Lee, Vivek Kumar, Seung-Hee Yoo, Joseph S. Takahashi, and Choogon, Lee.
- 2010 Northeastern Illinois University Biology Department Seminar Series**, Chicago, IL  
Oral presentation entitled "The Role of Negative Feedback in Mammalian Circadian Rhythms." [Aaron E. Schirmer](#).
- 2009 Northwestern University Neurobiology and Physiology Departmental Seminar**, Evanston IL  
Oral presentation entitled "The Role of the Negative Feedback Loop Genes, *Cryptochrome* and *Period*, in Circadian Rhythmicity." [Aaron E. Schirmer](#).
- 2009 Rockford College Biology Departmental Seminar**, Rockford, IL  
Oral presentation entitled "The Molecular Basis of Circadian Rhythmicity." [Aaron E. Schirmer](#).
- 2009 Northeastern Illinois University Biology Department Seminar Series**, Chicago, IL  
Oral presentation entitled "The Role of the Negative Feedback Elements, *Cryptochrome* and *Period*, in Circadian Rhythmicity." [Aaron E. Schirmer](#).

#### **Students Directed in Research:**

Adamari Pena – M.S. Research Thesis – Northeastern Illinois University – In progress

Eduardo Vaca – M.S. Research Thesis – Northeastern Illinois University – In progress

Isaiah Thomas – Undergraduate Honors Thesis – The Effects of Circadian Rhythm Disruption on the Behavior, Lifespan, and Fertility in *Drosophila melanogaster* – Northeastern Illinois University – 2023

Gina Ishu – M.S. Research Thesis - The Effect of Photopollution on *Drosophila* Deficient in TDP1 Proteins – Northeastern Illinois University – 2021

Mehdi Khan – Undergraduate Honors Thesis – Quantification of Mammalian Circadian Rhythms in Response to Photopollution with a Focus on Splitting Behavior – Northeastern Illinois University – 2020

Tetyana Perchyk – Undergraduate Honors Thesis – Effect of Photopollution on the Activity of *Drosophila Melanogaster* – Northeastern Illinois University – 2019

Andrea Salis – M.S. Research Thesis – Evaluating the Effect of Crowd Density and Exhibit Choice on the Behavior of Zoo-Housed Chimpanzees (*Pan Troglodytes*) and Western Lowland Gorillas (*Gorilla Gorilla Gorilla*) – Northeastern Illinois University – 2012

Tess Capen – M.S. Research Thesis – Evaluating the Role of Temperature in the Reproduction of *Urobatris Jamaicensis* (Urotrygonidae) – Northeastern Illinois University – 2012

Nicole C. Woitowich – M.S. Research Thesis – X-Ray Crystallographic Structure of a Bacteriophytochrome from *Stigmatella Aurantiaca* - Northeastern Illinois University – 2011

Stephanie Puetz – M.S. Research Student - Spring 2012 – Spring 2016

Mark Mastroianni – Undergraduate Honors Thesis – The Function of *Cryptochrome 1* in Mammalian Neural Development – Northeastern Illinois University – 2014

Jessica Benyukhis – Undergraduate Honors Thesis – The Role of the Circadian Gene *Cryptochrome 1* in Neural Development – Northeastern Illinois University – 2013

Michael S. Marshall – Undergraduate Honors Thesis – Effects on Glucose Homeostasis due to the Selective Disruption of Circadian Oscillations in the Brain – Northwestern University – 2010

Undergraduate: Sarah Alfaqih (Summer 2023), Jon Scott-Haines (Spring 2022-Present), Jarod Gattis (Summer 2020-Summer 2021) Karla Solis (Spring 2019-Fall 2020), Isaiah Thomas (Summer 2019-Spring 2023), Tetyana Perchyk (Spring 2018-Spring 2019), Michael Vujnovich (Summer 2019-Spring 2020), Annick Ishami (Summer 2019-Spring 2020), Gabriela Naveda (Summer 2017-Spring 2019), Elisabeth DiNello (Fall 2015-Summer 2017), Emily Fioramonti (Spring 2013-Summer 2016), Veronica Skital (Spring 2015-Fall 2015), Salim Patel (Fall 2014-Fall 2015), Christina Carrion (Spring 2014-2015), Mark Mastroianni (Spring 2013-2014), Jessica Benyukhis (Spring 2012-2013), Alexandra Cabanov (Fall 2012-2014), Robert Levendosky (Summer 2012-2013), Edgar Mantes (Summer 2012-Fall 2013), Wil Bogue (Summer 2012-2014), Andrew Urdiales (Summer 2012-2013), Barbara Popkiewicz (Summer 2012-Spring 2013), Jackie Meraz (Summer 2012), Rachael St. Peter (Summer 2011), Svetlana E. Kovaleva (Summer 2011), Angela Verela (Spring 2011-Summer 2012), Abdelwahab Shihadeh (Summer 2010-Fall 2012), Joshua Roth-Colson (Spring 2010-Fall 2011), Brigitte Igova (Summer 2011-Spring 2012), Alexander Dianocki (Summer 2011-Spring 2012), Yaiyr Astudillo-Scalia (Summer 2011), Jennifer Shaier (Summer 2011), Salina Wunderle (Summer 2011), Jeny Semoon (Summer 2010), Sumitra Gurung (Summer 2010), J Mulliken (Summer 2010), Kristen Veldman (Summer 2010), Steve Ryan (Summer 2010), Matthew Deisinger (Summer 2010)

### **Mentoring**

Teaching mentor for Dr. Ayse Tenger-Trolander - University of Chicago - The IRACDA (Institutional Research and Academic Career Development Award) is an NIH-funded postdoctoral fellowship that combines traditional mentored research at a research-intensive university with pedagogical training and a teaching residency at a minority-serving partner institution to prepare a diverse pool of scientists for independent academic careers.

Teaching mentor for Dr. Kyeorda Kemp - Northwestern University-Select Teaching and Research Training (NU-START) program - NU-START is a competitive post-doctoral fellowship funded by the National Institute for General Medical Sciences and is aimed at preparing the next generation of college educators.

New Faculty mentor for Dr. Xiwei Wang – Northeastern Illinois University – As a new faculty mentor Dr. Wang and I met regularly and worked to implement his teaching, research, and service goals in his first year at NEIU.

MARC Faculty mentor – Northeastern Illinois University – As part of the MARC program, I have taught research skills II (This course engages students in research and covers important topics on responsible conduct in research) and I was a research advisor for Isaiah Thomas.

NEIU Honors Curriculum and Standards Board Member – Northeastern Illinois University – Members of this board advise the UHP coordinator on matters affecting the program and/or its students, serve as third readers for UHP senior projects/theses, and review scholarship applications.

**Synergistic Activities**

2023-present RCN-UBE Microbiome Workforce Dev. Berkeley, CA  
*Steering Committee Member*  
 Participated in steering committee meetings, community calls, and contributed to the development and implementation and evaluation of teaching workflows in KBase.

2020-present KBase Educators Group Berkeley, CA  
*Educator Group Member*  
 Participated in working groups, community calls, and contributed to the development and implementation of teaching workflows in KBase.

2019-2023 Illinois District 72 School Board Skokie, IL  
*Elected Board Member*  
 Helped develop, implement, and assess the district’s vision, goals, and policies.

2017-2019 Chicago Society for Neuroscience Chicago, IL  
*Third Year Councilor*  
 Planned the Chicago Society for Neuroscience annual meeting and chaired the career table panel discussions.

2016-present Chicago Symposium Series Chicago, IL  
*Planning Committee Member*  
 Planned annual symposium series on excellence in math and science education. In the spring of 2018 I coordinated one of the day long seminars at Northeastern Illinois University.

2016-2019 YOLO and Team Stratonauts Chicago, IL  
*Guest Lecturer*  
 Youth Organization for Lights Out (YOLO) and Team Stratonauts are collaborative efforts with the Adler Planetarium for high school students. I teach guest lectures for these groups on photopollution and help students put their data on photopollution and sky quality into perspective.

2017-2018 Fairview School District 72 Skokie, IL  
*District Learning Team Member*  
 Developed recommendations on materials and best practice instruction for the districts K-8 STEM curriculum.

2016 Flantascience LLC Glastonbury, CT  
*Consultant*  
 Collaborating on an SBIR Phase I grant entitled “adaptive peer learning platform using crowd sourced video lessons from students” with the goal of increasing student engagement.

2009 Northeastern Illinois University Chicago, IL  
*Senior Research Consultant*  
 Collaborating on an NIH Pilot Grant entitled “Structure-based design of an efficient infrared fluorescent marker” with the goal of designing a new fluorescent marker to use in mammalian cells.

2005-2013 Algonquin Middle School Algonquin, IL  
*Middle School Herpetology Immersion Lab*  
 Conduct an annual lab on the diversity in the Reptile kingdom focusing on the suborder Serpentes.