

**Home:** 1108 South Fess Ave  
Bloomington, IN 47401

**Work:** 102 Myers Hall  
Indiana University  
Bloomington, IN 47405

**Education:**

B.S. Zoology/2010  
Ph.D. Biology/2017

Miami University  
Miami University

**Awards:**

2012 East Asia Pacific Summer Institute Program (NSF) Fellowship Recipient  
2014 Selected attendee for the Workshop on Analyzing Next-Generation Sequencing Data at Michigan State University  
2014 Awarded Runner-up for Best Poster Presentation at Developmental Biology Conference, Seattle WA  
2016 Awarded Best Poster Presentation at Miami University Graduate Research Forum, Oxford OH  
2016 Miami University Dissertation Scholarship

**Research Funding:**

National Science Foundation – East Asia and Pacific Summer Institute

The STAGing of beetles: using transcriptomics to explore evolution of stag beetle wings  
Principal Investigator: \$11,000

Miami University - Doctoral Undergraduate Opportunity Scholarships (DUOS)

Empirically Determining the Function and Value of Elytra in the Red Flour Beetle *Tribolium castaneum*  
Graduate mentor: \$1,000

Miami University - Department of Biology Academic Challenge Grant

Exploring the molecular basis of insect wing evolution: a transcriptomic approach  
Graduate Student Award: \$3,000

**Publications:**

*Published*

1. Clark-Hachtel CM, Linz DM, Tomoyasu Y. Insights into insect wing origin provided by functional analysis of vestigial in the red flour beetle, *Tribolium castaneum*. Proceedings of the National Academy of Sciences of the United States of America. 2013;110(42):16951-16956.
2. Linz DM, Clark-Hachtel CM, Borràs-Castells F, Tomoyasu Y. Larval RNA Interference in the Red Flour Beetle, *Tribolium castaneum*. Journal of Visualized Experiments : JoVE. 2014;(92):52059.
3. Linz DM, Tomoyasu Y. RNAi screening of developmental toolkit genes: A search for novel wing genes in the red flour beetle *Tribolium castaneum*. Development Genes and Evolution. 2015; 225(1):11-22.
4. Zattara E, Busey H, Linz DM, Tomoyasu Y, Moczek AP. Neofunctionalization of embryonic patterning genes facilitates positioning of novel traits in the head of adult beetles. Proceedings of the Royal Society Biological Sciences. 2016; (283):epub.
5. Linz DM, Hu AW, Sitvarin MI, Tomoyasu Y. Functional value of elytra under various stresses in the red flour beetle, *Tribolium castaneum*. Scientific Reports. 2016; (6):34813.

6. Linz DM, Tomoyasu Y. A dual evolutionary origin of insect wings supported by an investigation of the abdominal wing serial homologs in *Tribolium*. Proceedings of the National Academy of Sciences of the United States of America. 2018; epub. doi:10.1073/pnas.1711128115.

*In preparation*

7. Linz DM, Tomoyasu Y. Transcriptomic exploration of the coleopteran wings reveals insight into the mechanisms underlying evolution of the novel elytron structure

**Teaching Experience:**

Miami University Graduate Student Teaching Enhancement Program 2015  
BIO 305 Laboratory in Human Physiology 2010, 2011, 2013, 2014, & 2015  
BIO 401/501 Entomology 2012  
BIO 464/564 Lab in Molecular Biology 2014, 2016, & 2017

**Undergraduates Supervised:**

Sindhu Samba (B.S. 2011)  
Matthew Korth (B.S. 2011)  
Julius Higiroy (B.S. 2013)  
Alan Hu (B.S. 2016)

**National and International Presentations:**

*Oral presentations*

Assessing the functional value of elytra under various stresses in the red flour beetle, *Tribolium castaneum*

Midwestern Ecology and Evolution Conference  
Oxford OH, March 2016

Beetles in flight: using RNA sequencing to analyze stag beetle wing development  
Center for Developmental Biology  
Kobe, Japan. August 2013

*Poster presentations*

Exploring the molecular basis of insect wing evolution: a transcriptomic approach  
PanAmerica Evolution and Development Conference  
Berkeley CA. August 2015

Exploring the molecular basis of insect wing evolution: a transcriptomic approach  
Annual Drosophila Genetics Conference  
Chicago IL. March 2015

Exploring the molecular basis of insect wing evolution: a transcriptomic approach  
Developmental Biology 73<sup>rd</sup> Annual Meeting  
Seattle WA. July 2014

RNAi screening of developmental toolkit genes: A search for novel wing genes in the red flour beetle  
*Tribolium castaneum*  
Midwest Ecology and Evolution Conference.  
Dayton OH. March 2014

Beetles in flight: using RNA sequencing to analyze stag beetle wing development  
EAPSI Program Orientation  
Tokyo Japan. June 2013

Exploring the molecular basis of insect wing evolution: A comparison of beetle and fly wing development  
Annual Drosophila Genetics Conference  
Chicago IL. March 2012

Geographic variation of desiccation tolerance in the red flour beetle, *Tribolium castaneum*  
Annual Drosophila Genetics Conference  
San Diego CA. March 2011