

CURRICULUM VITAE

Austin M. Garner

Department of Biology
The University of Akron
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EDUCATION

In progress **Ph.D. in Integrated Bioscience**

The University of Akron, Akron, Ohio
Anticipated graduation date: May 2021

Co-advisors: Peter H. Niewiarowski, Ph.D. (Department of Biology)
 Ali Dhinojwala, Ph.D. (Department of Polymer Science)

Committee: Henry C. Astley, Ph.D. (Departments of Polymer Science and Biology)
 Todd A. Blackledge, Ph.D. (Department of Biology)
 Anthony P. Russell (Department of Biological Sciences, University of Calgary)

Relevant coursework: Research Techniques in Integrated Bioscience (IB); Communicating in IB; Problem Solving in IB; Digital Skills for Biologists; Field Herpetology; Comparative Biomechanics; Biometry; Readings in Biomimicry; Ethics of Science.

May 2016 **B.Sc. in Biology, *magna cum laude***
The University of Akron, Akron, Ohio

PROFESSIONAL EXPERIENCE

May 2018 – Present **Mentoring Fellow**
[Tiered Mentoring Program](#), Department of Biology, The University of Akron, Akron, Ohio

August 2016 – Present **Teaching Assistant**
Department of Biology, The University of Akron, Akron, Ohio

May 2016 – August 2016 **Research Assistant**
The University of Akron Field Station, Bath, Ohio
Supervisors: Randall J. Mitchell, Ph.D. and Lara D. Roketenetz, Ph.D.

PEER-REVIEWED PUBLICATIONS

‡ Denotes equal contribution of authors *Denotes undergraduate co-author

2018 McInerney, S.J., B. Khakipoor, **A.M. Garner**, T. Houette‡, C.K. Unsworth‡, A. Rupp, N. Weiner, J.F.V. Vincent, J.K.S. Nagel, and P.H. Niewiarowski. E2BMO: Facilitating User Interaction with a BioMimetic Ontology via Semantic Translation and Interface Design. *Designs* 2(4): 53. [PDF](#).

2017 **Garner, A.M.**, S.M. Lopez, and P.H. Niewiarowski. Brown anole (*Anolis sagrei*) adhesive forces remain unaffected by partial claw clipping. *Acta Herpetologica* 12:133-137. [PDF](#).

2017 **Garner, A.M.**, A.Y. Stark, S.A. Thomas, and P.H. Niewiarowski. Geckos go the Distance: Water's Effect on the Speed of Adhesive Locomotion in Geckos. *Journal of Herpetology* 51:240-244. [PDF](#).

MANUSCRIPTS IN REVIEW OR IN PREPARATION

In review **Garner, A.M.**, M.C. Wilson, A.P. Russell, P.H. Niewiarowski, and A. Dhinojwala. Going Out on a Limb: How Parallel Investigation of the Anoline Adhesive System can Enhance our Understanding of Fibrillar Adhesion.

In review Niewiarowski, P.H., A. Dhinojwala, and **A.M. Garner**. Adapting a thermal physical model approach to estimate gecko adhesion performance opportunity and constraint: How rough could it be?

In preparation **Garner, A.M.**, J.M. Piechowski, C. Buo, S.R. Stefanovic, P.H. Niewiarowski, and A. Dhinojwala. Step away from the water: digital hyperextension's lack of influence on the self-drying of gecko adhesive toe pads.

In preparation **Garner, A.M.**, A.J. Keith*, A.N. Schnarrenberger*, H.C. Astley, and P.H. Niewiarowski. What Goes Up, Must Come Down: Substrate Orientation Significantly Impacts Locomotor Performance of *Gekko gekko*.

HONORS AND AWARDS

Multiple years **Company of Biologists' Travel Grant**
Society of Experimental Biology
Amount: £250
Years awarded: 2017, 2018

Multiple years **Professional Enrichment Grant**
The University of Akron Graduate Student Government
Amount: \$200
Years awarded: 2017, 2018

November 2017 **Charlotte Magnum Student Support Award**
The Society for Integrative and Comparative Biology
2018 Annual Meeting, San Francisco, California
Amount: \$109

November 2016 **Charlotte Magnum Student Support Award**
The Society for Integrative and Comparative Biology
2017 Annual Meeting, New Orleans, Louisiana
Amount: \$109

November 2015 **Charlotte Magnum Student Support Award**
The Society for Integrative and Comparative Biology
2016 Annual Meeting, Portland, Oregon

Amount: \$109

CONFERENCE PRESENTATIONS

† Denotes presenting author ‡ Denotes equal contribution of authors *Denotes undergraduate co-author

ORAL PRESENTATIONS

- 2019** Niewiarowski, P.H.[†], A. Dhinojwala[‡], and **A.M. Garner**. Developing prototypes for testing gecko adhesion on rough surfaces. From symposium titled, “The Path Less Traveled: Reciprocal Illumination of Gecko Adhesion by Unifying Material Science, Biomechanics, Ecology, and Evolution”. SICB 2019 Annual Meeting, Tampa Bay, Florida.
- 2019** **Garner, A.M.**[†], M.R. Klittich, D. Maksuta, P.H. Niewiarowski, and A. Dhinojwala. The Role of Surface Lipids on the Self-Cleaning Ability of Gecko Subdigital Adhesive Pads. SICB 2019 Annual Meeting, Tampa Bay, Florida.
- 2019** Gamel, K.M.[†], **A.M. Garner**, and B.E. Flammang. Modeling evolutionary selection for performance, in the case of the remora adhesive disc. SICB 2019 Annual Meeting, Tampa Bay, Florida.
- 2018** Unsworth, C.K.[†], **A.M. Garner**, S.J. McInerney, B. Khakipoor, T. Houette, A. Rupp, and N. Weiner. E2BMO: Facilitating User Interaction with a BioMimetic Ontology through Semantic Translation and Interface Design. AAAI, Arlington, Virginia.
- 2018** **Garner, A.M.**[†], M.R. Klittich, J.M. Piechowski, D. Maksuta, C. Buo, S.R. Stefanovic, P.H. Niewiarowski, and A. Dhinojwala. Recovery Ability of Gecko Adhesive Toe Pads After Fouling with Water or Dirt. SICB 2018 Annual Meeting, San Francisco, California.
- 2018** M.R. Klittich[†], **A.M. Garner**[‡], D. Maksuta[‡], P.H. Niewiarowski, and A. Dhinojwala. Impact of Surface Chemistry on Gecko Self-Cleaning. SICB 2018 Annual Meeting, San Francisco, California.
- 2017** **Garner, A.M.**[†], J.M. Piechowski, C. Buo, S.R. Stefanovic, P.H. Niewiarowski, and A. Dhinojwala. The Role of Digital Hyperextension in the Self-drying Mechanism of Gecko Adhesive Toe Pads. SICB 2017 Midwest Regional Meeting, The University of Akron, Akron, Ohio.
- 2017** **Garner, A.M.**[†], K.E. Siman, A. Wright, T. Davis, and P.H. Niewiarowski. What Goes Up, Must Come Down: The Effect of Running Orientation on the Speed of Adhesive Locomotion in Geckos. SICB 2017 Annual Meeting, New Orleans, Louisiana.

POSTER PRESENTATIONS

- 2019** **Garner, A.M.**[†], M.C. Wilson, A.P. Russell, P.H. Niewiarowski, and A. Dhinojwala. Morphometrics and Patterning of the Adhesive Setal Fields of an Anolis Lizard in Comparison to those of its Gekkotan Counterparts. SICB 2019 Annual Meeting, Tampa Bay, Florida.

- 2019** **Garner, A.M.**, A.M. Pamfilie^{†*}, A. Dhinojwala, and P.H. Niewiarowski. Relationships between Adhesive Performance and Substrate Preference Behavior in Tokay Geckos (*Gekko gecko*). SICB 2019 Annual Meeting, Tampa Bay, Florida.
- 2018** **Garner, A.M.**, A.J. Keith^{†*}, A. Schnarrenberger*, H.C. Astley, and P.H. Niewiarowski. The Effect of Running Orientation on Gecko Locomotor Performance. SICB 2018 Annual Meeting, San Francisco, California.
- 2016** **Garner, A.M.**[†], A.Y. Stark, S.A. Thomas, and P.H. Niewiarowski. Geckos Go the Distance: Water's Effect on Gecko Locomotor Performance. SICB 2016 Annual Meeting, Portland, Oregon.

RESEARCH EXPERIENCE

- 2016 – Present** **Doctoral Research**
 Program in Integrated Bioscience, Department of Biology, The University of Akron
 Co-advisors: Peter H. Niewiarowski, Ph.D. and Ali Dhinojwala, Ph.D.

TEACHING AND MENTORING EXPERIENCE

COURSES TAUGHT

- Multiple semesters** **Foundations of Physiology Lab I**
 Teaching Assistant, Department of Biology, The University of Akron
 Semesters taught: Fall 2017, 2018
- Summer 2018** **Herpetology**
 Teaching Assistant, Department of Biology, The University of Akron
- Spring 2018** **Digital Skills for Biologists (graduate course)**
 Teaching Assistant, Department of Biology, The University of Akron
- Summer 2017** **Human Anatomy and Physiology Lab I**
 Teaching Assistant, Department of Biology, The University of Akron
- Spring 2017** **Principles of Biology Lab II**
 Teaching Assistant, Department of Biology, The University of Akron
- Fall 2016** **General Ecology**
 Teaching Assistant, Department of Biology, The University of Akron
- Fall 2016** **Biomimetic Design (combined undergraduate and graduate course)**
 Teaching Assistant, Department of Biology, The University of Akron

GUEST LECTURES

- Fall 2017** **Gecko Biology and Adhesion: Beyond Saving You Money on Car Insurance**
 Biomimetic Design, The University of Akron

Fall 2016 **The Gecko Adhesive System: An Adaptation for an Arboreal Lifestyle**
General Ecology, The University of Akron

Fall 2016 **The Gecko Adhesive System: A Sticky Solution for All Sorts of Problems**
Biomimetic Design, The University of Akron

MENTORING

Undergraduate Students

Austin Keith, Biology Undergraduate (1 manuscript in preparation)

Alexis Schnarrenberger, Biology Undergraduate (1 manuscript in preparation)

Alexandra Tomasko, Biology Undergraduate

Alexandra Pamfilie, Biology/Psychology Undergraduate ([Tiered Mentoring](#)) (1 experiment in progress)

High School Students

Benjamin Sprenger

Nyle Garg

PROFESSIONAL SERVICE

REVIEWER

Biological Journal of the Linnean Society

OTHER SERVICE

January 2018 **The Society for Integrative and Comparative Biology**
2018 Annual Meeting, San Francisco, California
Session co-chair, Adhesion: Sticky When Dry

ACADEMIC SERVICE

COMMUNITY OUTREACH

In addition to the below, I give regular outreach presentations using live geckos to educate diverse audiences about gecko biology, gecko adhesion, biomimicry, and Niewiarowski/Dhinojwala lab research. Audiences include: students (K-12, undergraduate, graduate), business professionals, scientists in various stages of their careers, and the general public.

August 2018 **Camp Bioscience**
Guest Speaker

April 2018 **Norbert Thompson Biology Undergraduate Research Symposium**
Judge

March 2018 **Western Reserve District 5 Science Day**
Super Judge, Animal/Plant Sciences

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- February 2018** **University of Akron/Goodyear STEM Career Day**
Gecko adhesion research demonstration
- April 2017** **Norbert Thompson Biology Undergraduate Research Symposium**
Judge
- April 2017** **University of Akron/Goodyear STEM Career Day**
Gecko adhesion research demonstration
- January 2017** **University of Akron Scholar's Day**
Gecko adhesion research demonstration, Department of Biology tour, answered questions about undergraduate programs in biology
- November 2016** **Departmental Tours for Prospective Undergraduate Students**

MEDIA ATTENTION

- January 2019** **Anole Annals**
[“SICB 2019: Anole Setal Morphological Diversity”](#)
- January 2018** **Anole Annals**
[“Clipped Claws and Consequences for *Anolis* Adhesive Performance”](#)
- January 2016** **Anole Annals**
[“SICB 2016: Can Geckos Run Fast When It's Wet Outside?”](#)

CERTIFICATIONS

- 2013 – Present** **Collaborative Institutional Training Initiative (CITI)**
Animal Care and Use

PROFESSIONAL AFFILIATIONS

- 2017 – Present** **Society of Experimental Biology**
Student Member
- 2017 – Present** **The Herpetologists' League**
Student Member
- 2017 – Present** **The Society for the Study of Amphibians and Reptiles**
Student Member
- 2015 – Present** **The Society for Integrative and Comparative Biology**
Student Member