

## Curriculum Vitae

# S. Tonia Hsieh

Temple University  
Department of Biology  
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Philadelphia, PA 19122

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[sthsieh@temple.edu](mailto:sthsieh@temple.edu)

<b>EDUCATION</b>	<b>Harvard University</b> Department of Organismic and Evolutionary Biology Ph.D., Biology received 2005; A.M., Biology received 2002. <i>Advisor: George Lauder</i> Thesis: Biomechanics of Locomotion at the Air-Water Interface <b>University of California (UC), Berkeley</b> B.A., Integrative Biology (I.B.) received 1999.	Cambridge, MA     Berkeley, CA
<b>POSITIONS</b>	<b>Associate Professor</b> , Temple University, Philadelphia, PA <b>Assistant Professor</b> , Temple University, Philadelphia, PA <b>Assistant Professor</b> , University of Florida, Gainesville, FL <b>Post-doctoral Research Associate</b> , Harvard University, Cambridge, MA <i>Advisor, Jonathan Losos</i> <b>Post-doctoral Research Associate</b> , Brown University, Providence, RI <i>Advisor, Thomas Roberts</i>	2017-present 2010-2017 2008-2009 2007-2008 2006-2007
<b>GRANT SUPPORT</b>	Department of Education (\$2.5M, co-PI) “Temple Teacher Residency + String Theory Schools” National Science Foundation (IOS-1453106: \$991,873, sole-PI) “CAREER: The Multi-functional Foot and its Role in Locomotor Control Across a Range of Complex Media” National Science Foundation (IOS- 2029523: \$14,630, co-PI) “Symposium SICB 2021, An Evolutionary Tail: EvoDevo, structure, and function of post-anal appendages.” National Science Foundation (IGE-1545309: \$494,825, co-PI) “NSF-IGE: Innovating graduate STEM education through body-centered partnerships” Office of the Vice Provost of Research, Temple University (\$100,000, lead-PI) “Understanding Deformation Patterns of Suspensions and Granular Material” National Science Foundation (IOS-127547: \$14,985, lead-PI) “Meeting: Vertebrate Land Invasions: Past, Present, and Future; A Symposium for the Annual SICB Meeting in San Francisco, CA, January 3-7, 2013”	2019-2025 2015-2022 2020-2021 2015-2019 2015-2017 2012
<b>HONORS</b>	Summer Research Grant, Temple University William Caldwell Memorial Distinguished Teaching Award, Temple University Dean’s Teaching Excellence Award, Warren Alpert Medical School, Brown Univ. Certificate of Distinction in Teaching Award, Harvard University Elsevier Young Investigator Award, Soc. Experimental Biology	2018 2015 2007 1999, 2005, 2006 2004

Departmental Citation, UC Berkeley 1999  
Distinguished Service Citation, California Alumni Association 1996

**FELLOWSHIPS**

National Geographic Society Research and Exploration Grant 2003-2004  
Student Travel Fellowship, Society of Integrative & Comparative Biology 2003  
Putnam Expedition Fund, Harvard University 2002, 2003  
Graduate Research Fellowship, National Science Foundation 2001-2004  
Summer Research Grant, UC Berkeley Biology Fellows Program 1998  
Explorers' Club Youth Activity Fund 1998  
Alumni Scholarship, UC Berkeley 1995-1999  
Hewlett-Packard University Scholarship 1995

**PROFESSIONAL MEMBERSHIP**

International Society of Vertebrate Morphologists, Society for Experimental Biology, Society for Integrative and Comparative Biology, American Physics Society

**COURSES TAUGHT**

**Temple University**

Department of Biology, 2010 – current  
Comparative Biomechanics; Honors Introductory Biology; Biomimetics and Bioinspiration; Herpetology

Department of Biology/Geography & Urban Studies, Spring 2017, 2018  
Bio-Social Studio II

**University of Florida**

Department of Zoology, 2008, 2009  
Functional Vertebrate Anatomy (lecture and lab)

**Brown University**

*Post-doctoral Teaching Associate*, Warren Alpert Medical School, 2006-2007  
Human Gross Anatomy (1<sup>st</sup> year medical students)

**Harvard University**

*Post-doctoral Teaching Fellow*, Department of Organismic and Evolutionary Biology, 2006  
Lizard Ecology

*Head Teaching Fellow*, Department of Organismic and Evolutionary Biology, 2005  
Biology and Diversity of Birds

*Head Teaching Fellow*, School of Public Health, 2004  
The Human Organism

*Teaching Fellow*, Department of Organismic and Evolutionary Biology, 1999-2005  
Advanced Structure and Physiology of Vertebrates; Human Anatomy; Structure and Function of Vertebrates

**REFEREED PUBLICATIONS**

\* Undergraduate co-author

Kane, SA, T Bien\*, L Contreras-Orendain\*, MF Ochs, **ST Hsieh**. 2021. Many ways to land upright: novel righting strategies allow spotted lanternfly nymphs to land on diverse substrates. *Royal Society Interface*. <https://www.biorxiv.org/content/10.1101/2021.04.12.439561v1>.

Pravin, S, B Chang, E Han, L London, DI Goldman, HM Jaeger, and **ST Hsieh**. 2021. Effect of two parallel intruders on work during granular penetrations. *Physics Rev E*. <https://arxiv.org/abs/2010.15172v1>

**REFEREED  
PUBLICATIONS**

\* Undergraduate  
co-author

Schwaner, MJ, **ST Hsieh**, CP McGowan. **2021**. An Introduction to An Evolutionary Tail: EvoDevo, Structure and Function of Post-Anal Appendages. *Integrative and Comparative Biology*. icab134. DOI: 10.1093/icb/icab134.

Schwaner, MJ, **ST Hsieh**, et al. **2021**. Future Tail Tales: A Forward-Looking, Integrative Perspective on Tail Research. *Integrative and Comparative Biology*. icab082. 10.1093/icb/icab082

Carter, AJ, **ST Hsieh**, P Dodson, L Sallan. **2021**. Early amphibians evolved distinct vertebrae for habitat invasions. *PLoS ONE*. 16(6): e0251983. <https://doi.org/10.1371/journal.pone.0251983>.

Pfeiffenberger, JP, **ST Hsieh**. **2021**. Autotomy induced effects on the locomotor performance of the ghost crab, *Ocypode quadrata*. *J Exp Biol*. 224(10):jeb233536. doi: 10.1242/jeb.233536

Han, E, L Zhao, N Van Ha, **ST Hsieh**, DB Szyld, HM Jaeger. **2019**. Dynamic jamming of dense suspensions under tilted impact. *Phys. Rev. Fluids*. 4(6): 063304. doi: 10.1103/PhysRevFluids.4.063304

Behm, J, BR Waite, **ST Hsieh**, MR Helmus. **2018**. Benefits and limitations of three-dimensional printing technology for ecological research. *BMC Ecology*.

Shamble, PS, S Wilshin, KJ Hovey\*, R Harris\*, AJ Spence, **ST Hsieh**. **2018**. Limping following limb loss increases locomotor stability. *The Journal of Experimental Biology*. 2018: jeb.174268. doi: 10.1242/jeb.174268

Tollis, M, ED Hutchin, J Stapley, WL Eckalbar\*, SM Rupp, I Maayan\*, E Lasku\*, CR Infante, S Dennis, JA Robertson, CM May, MR Crusoe, E Bermingham, DF DeNardo, **ST Hsieh**, MJ Huentelman, RJ Kulathinal, WO McMillan, DB Menke, SD Pratt, JA Rawls, O Sanjur, MA Wilson Sayres, J Wilson-Rawls, RE Fisher, K Kusumi. **2018**. Comparative genomics reveals accelerated evolution in conserved pathways during the diversification of anole lizards. *Genome Biology and Evolution*. 10:489-506. doi: 10.1093/gbe/evy013.

**Hsieh, ST**. **2016**. Tail loss and narrow surfaces decrease locomotor stability in the arboreal green anole lizard (*Anolis carolinensis*). *The Journal of Experimental Biology*. 219(Pt 3):364-73. doi: 10.1242/jeb.124958. Epub 2015 Nov 23.

Ashley-Ross, MA, **ST Hsieh**, AC Gibb, RW Blob. **2013**. Vertebrate Land Invasions – Past, Present, and Future: an introduction to the symposium. *Integrative and Comparative Biology*. 53(2):192-196. doi:10.1093/icb/ict048

Gibb, AC, MA Ashley-Ross, **ST Hsieh**. **2013**. Thrash, flip, or jump: how do new behaviors evolve when teleost fishes are confronted with a novel environment? *Integrative and Comparative Biology*. 53(2):295-306. doi:10.1093/icb/ict052

Li C, **Hsieh ST**, DI Goldman. **2012**. Multi-functional foot use during running in the zebra-tailed lizard (*Callisaurus draconoides*). *The Journal of Experimental Biology*. 215:3293-3308. doi:10.1242/jeb.061937

Ord, TJ, **ST Hsieh**. **2011**. A Highly Social, Land-Dwelling Fish Defends Territories in a Constantly Fluctuating Environment. *Ethology*. 117(10):918-927.

**Hsieh, ST**. **2010**. A locomotor innovation enables water-land transition in a marine fish. *PLoS One*. 5(6): e11197.

**Hsieh, ST**. **2006**. A three-axis optical force plate for studies in small animal locomotion. *Review of Scientific Instruments*. 77:054303.

Autumn, K, **ST Hsieh**, DM Dudek, J Chen, C Chitaphan, and RJ Full. **2006**. Dynamics of geckos running vertically. *The Journal of Experimental Biology*. 209:260-272.

**REFEREED  
PUBLICATIONS  
(CONT.)**

\* Undergraduate  
co-author

**Hsieh, ST** and GV Lauder. **2004**. Running on water: three-dimensional force generation by basilisk lizards. *Proceedings of the National Academy of Sciences*. 101(48):16784-16788.

**Hsieh, ST**. **2003**. Three-dimensional hindlimb kinematics of water running in the plumed basilisk lizard (*Basiliscus plumifrons*). *The Journal of Experimental Biology*. 206:4363-4377.

Autumn, K, Y Liang, **ST Hsieh**, W Zesch, WP Chan, T Kenny, R Fearing, and RJ Full. **2000**. Adhesive force of a single gecko foot-hair. *Nature*. 405(6787):681-685.

**Hsieh, ST**, RE Ballard, G Murthy, AR Hargens, VA Convertino. **1998**. Plasma colloid osmotic pressure increases in humans during simulated microgravity. *Aviation, Space, and Environmental Medicine*. 69:23-26.

**CONFERENCE/  
TECHNICAL  
PAPERS**

Liang YA, K Autumn, **ST Hsieh**, W Zesch, WP Chan, R Fearing, RJ Full, TW Kenny. **2000**. Adhesion force measurements on single gecko setae. In: *Technical Digest of the 2000 Solid-State Sensor and Actuator Workshop, Hilton Head Island, SC*. pp.33-38.

Matsuyama M, T Ueno, C Yang, **ST Hsieh**, HB Lillywhite, AR Hargens. **1998**. Evolutionary adaptations of intracranial pressure to gravity. In: *NASA Ames Research Center Research and Technology 1997*.

**SELECT  
PUBLISHED  
ABSTRACTS**

\* indicates  
undergraduate  
co-author

Kane, SA; Bien, T; Contreras-Orendain, L; Ochs, MF; **Hsieh, ST**. **2021**. Spotted lanternfly nymphs stick the landing using multiple self-righting behaviors. *Integrative and Comparative Biology*. 61(Suppl. 1):e438.

Kane, SA; Bien, T; **Hsieh, ST**. **2021**. Field experiments uncover variable anti-predator behaviors used by spotted lanternfly nymphs. *Integrative and Comparative Biology*. 61(Suppl. 1):e438.

Schwaner, MJ; **Hsieh, ST**; McGowan, CP. **2021**. Introduction to an evolutionary tale: Evodevo, structure, and function of post-anal appendages. *Integrative and Comparative Biology*. 61(Suppl. 1):e803.

Tucker, EL; Mantilla, DC; **Hsieh, ST**. **2021**. Kinematics of running across hard and granular surfaces in specialist and generalist lizards. *Integrative and Comparative Biology*. 61(Suppl. 1):e912.

Quinn, BL\*, AM Carter, **ST Hsieh**. **2018**. Bending Rules for Terrestrial Locomotion. *Integrative and Comparative Biology*. 58:e182.

Pravin, S, E Han, HM Jaeger, **ST Hsieh**. **2018**. Foot Geometry and Kinematics of Impact Significantly Affect Force Generation in Granular Media. *Integrative and Comparative Biology*. 58:e180.

Carter, AM, **ST Hsieh**, P Dodson, L Sallan. **2018**. Vertebral ecomorphology and transitions to land in a diverse clade of early tetrapods. *Integrative and Comparative Biology*. 58:e30.

Carter, A, P Dodson, **ST Hsieh**. **2017**. Vertebral function in obstacle crossing behaviors in *Polypterus senegalus*. *Integrative and Comparative Biology*. 57:e26.

<https://doi.org/10.1093/icb/icx001>

Hsieh, ST, P Shamble, S Wilshin, K Hovey, AJ Spence. 2017. Spiders "limp" to achieve a more stable gait. *Integrative and Comparative Biology*. 57:e297. <https://doi.org/10.1093/icb/icx002>

Mantilla, DC, **Hsieh, ST**. **2017**. Evaluating the role of claws and toepads during running in anole lizard. *Integrative and Comparative Biology*. 57:e337. <https://doi.org/10.1093/icb/icx002>

Pfeiffenberger, JA, **ST Hsieh**, PA Cziko, Cheng, CHC. **2017**. The pelvic morphology of a bottom-walking Antarctic barbeled plunderfish, *Histiodraco velifer*, and how it compares to other Antarctic notothenioid fishes. *Integrative and Comparative Biology*. 57: e375.

<https://doi.org/10.1093/icb/icx002>

Tucker, EL, MA Fath, **ST Hsieh**. 2017. Compensatory strategies for traversing a drop perturbation in a bipedal, sprawled runner. *Integrative and Comparative Biology*. 57: e433. <https://doi.org/10.1093/icb/icx002>

Carter, A, L Sallan, **ST Hsieh**, P Dodson. 2016. Just how different? Quantifying Vertebral Diversity in Primitive Tetrapods. *Integrative and Comparative Biology*. 56:e252.

Fath, MA, **ST Hsieh**. 2016. Center of mass dynamics in the bipedally running brown basilisk (*Basiliscus vittatus*). *Integrative and Comparative Biology*. 56:e63.

Mazouchova, **ST Hsieh**. 2016. Semi-aquatic turtles use multiple gaits when moving under water. *Integrative and Comparative Biology*. 56:e142.

Pfeiffenberger, JA, **ST Hsieh**. 2016. Feed-forward control strategies enable sideways-running animals to overcome locomotor perturbations. *Integrative and Comparative Biology*. 56:e172.

Fath, MA, **ST Hsieh**. 2015. A comparative analysis of medio-lateral forces in upright and sprawled systems. *Integrative and Comparative Biology*. 55:e54.

Mazouchova, **ST Hsieh**. 2015. Water depth influences dynamic similarity and locomotor mode in semi-aquatic turtles. *Integrative and Comparative Biology*. 55:e121.

Pfeiffenberger, JA, **ST Hsieh**. 2015. Momentum as a possible mechanism for locomotor stability. *Integrative and Comparative Biology*. 55:e142.

Pfeiffenberger, JA, **ST Hsieh**. 2014. Autotomy-induced effects on the maximum locomotor performance of ghost crabs in the field. *Integrative and Comparative Biology*. 54:e165.

Gibb, AC, MA Ashley-Ross, **ST Hsieh**. 2013. How is a morphology that is under strong selection for swimming performance repurposed for terrestrial locomotion? *Integrative and Comparative Biology*. 53:e76.

Li, C, **ST Hsieh**, PB Umbanhowar, DI Goldman. 2013. Rapid locomotion of a small lizard on sand requires fluid-like ground reaction forces. *Integrative and Comparative Biology*. 53:e127.

Mara, KR, **ST Hsieh**. 2013. Differentiating slip perturbation recoveries from falls in bipedally-running lizards. *Integrative and Comparative Biology*. 53:e136.

Mazouchova, N, **ST Hsieh**, S Wilshin. 2013. The aquatic-terrestrial transition of freshwater turtles from a dynamical systems perspective. *Integrative and Comparative Biology*. 53:e140.

Nelson, FE, V Dasari\*, **ST Hsieh**. 2013. Differential limb function during locomotion on the level and over obstacles in the tarantula. *Integrative and Comparative Biology*. 53:e154.

Pfeiffenberger, JA, **ST Hsieh**. 2013. Effects of limb autotomy on locomotor performance of ghost crabs. *Integrative and Comparative Biology*. 53:e166.

**Hsieh, ST**, RE Fisher, K Kusumi. 2012. The effect of tail autotomy on locomotor stability in the green anole lizard. *Integrative and Comparative Biology*. 52: e81.

Mara, KR, **ST Hsieh**. 2012. Slip perturbation recovery in the frilled dragon, a dynamically-stable bipedal runner. *Integrative and Comparative Biology*. 52: e112.

Parikh, SC\*, KR Mara, **ST Hsieh**. 2012. Does the SLIP model apply during inverted running in cockroaches? *Integrative and Comparative Biology*. 52: e134.

**Hsieh ST**, RJ Kulathinal. 2011. lizardbase: A new collaborative GIS and genomic resource for the scientific community. *Integrative and Comparative Biology*. 51:e203.

Li C, LK Lau, **ST Hsieh**, P Umbanhowar, DI Goldman. 2011 The effect of substrate properties on hind foot use during locomotion of the zebra-tailed lizard. *Integrative and Comparative Biology*. 51:e81.

**SELECT  
PUBLISHED  
ABSTRACTS  
(CONT.)**

\* indicates  
undergraduate  
co-author

Smithers CA, **ST Hsieh**. 2011. Sexually-dimorphic niche and character displacement of the green anole (*Anolis carolinensis*) in the presence of the invasive Cuban brown anole (*Anolis sagrei*). *Integrative and Comparative Biology*. 51:e252.

**Hsieh, ST**, C Smithers\*. 2010. Adaptive divergence in green anole lizards due to species invasions. *Integrative and Comparative Biology*.

Grassa, C\*, **ST Hsieh**, RJ Kulathinal. 2010. Using comparative and functional genomics to infer past lineage-specific processes among vertebrates. *Integrative and Comparative Biology*.

St. Louis\*, J, TJ Sanger, **ST Hsieh**. 2009. How the development and microstructure of toe pad morphology reflect habitat specialization in *Anolis* lizards. *Integrative and Comparative Biology*.

**SELECT  
PUBLISHED  
ABSTRACTS  
(CONT.)**

\* indicates  
undergraduate  
co-author

**Hsieh ST**, TJ Roberts. 2008. Do hindlimb joints serve multiple functions during jumping in the Cuban tree frog? *Integrative and Comparative Biology*. 47(1):e52.

**Hsieh ST**. 2004. Mechanics of terrestrial locomotion in aquatic, amphibious, and terrestrial blennies. *Integrative and Comparative Biology*. 44(6):572 (Abstract 41.5).

**Hsieh ST**. 2003. Comparative locomotor characteristics of two amphibious blennies, *Alticus arnoldorum* and *Praealticus labrovittatus*. *Integrative and Comparative Biology*. 43(6): 905 (Abstract 26.2).

**Hsieh ST**. 2002. Fish out of water: the amphibious locomotor repertoire of the Pacific leaping blenny, *Alticus arnoldorum*. *Integrative and Comparative Biology*. 42(6):1246 (Abstract 37.1).

**Hsieh ST**, GV Lauder. 2001. Running on water: quantitative flow visualization of basilisk lizard locomotion. *American Zoologist*. 41(6):1475(Abstract 16.4).

**Hsieh ST**. 2000. Ontogenetic 3-D kinematics of water running in green basilisk lizards (*Basiliscus plumifrons*). *American Zoologist*. 40(6):1066(Abstract 21.2).

Autumn K, **ST Hsieh**, W Zesch, WP Chan, R Fearing, RJ Full. 1999. How gecko feet work. *American Zoologist*. 39(5):105A(Abstract 621).

Autumn K, **ST Hsieh**, DM Dudek, J Chen, C Chitaphan, RJ Full. 1999. Dynamics of geckos running vertically. *American Zoologist*. 38(5):84A (Abstract 288).

Autumn K, **ST Hsieh**, DM Dudek, J Chen, C Chitaphan, RJ Full. 1999. Function of feet in ascending and descending geckos. *American Zoologist*. 38(5):84A (Abstract 287).

**Hsieh ST**, Lillywhite HB, Ballard RE, Hargens AR. 1998. Cardiovascular responses of snakes to gravitational gradients. (Annual Meeting of the Professional Research Scientists on Experimental Biology 98, Part 1, San Francisco, California, USA, April 18-22, 1998. ) *FASEB Journal*. 12(4): A333.

Hargens AR, **ST Hsieh**, G Murthy, RE Ballard, VA Convertino. 1995. Sixteen-day bedrest significantly increases plasma colloid osmotic pressure. *Aerospace Medical Association Meeting, Anaheim, CA, 7-11 May 1995*, p. A23 (Abstract 131).

**INVITED TALKS**

**Invited speaker**, Darwin Day, Rowan University, **February 2018**

**Invited speaker**, March for Science, Philadelphia, **April 2017**

**Invited speaker**, Department of Bioengineering, Temple University, **January 2017**

**Invited speaker**, Neuromechanics Winter Workshop (NSF-RCN), **January 2017**

**Invited speaker**, University of Maryland, **September 2016**

**Invited speaker**, University of Pennsylvania, **June 2016**

**Kleckner Scientist-in-Residence**, Springside Chestnut Hill Academy, **May 2016**

**INVITED TALKS  
(CONT).**

- Invited workshop speaker**, Robotics Science and Systems, Rome, Italy, **July 2015**
- Invited speaker**, Science on Tap, Philadelphia, PA, **May 2015**
- Invited speaker**, Philadelphia Science Festival, Inspired by Nature, **April 2015**
- Invited speaker**, New Jersey Institute of Technology, Trenton, NJ, **February 2015**
- Invited speaker**, World Congress of Biomechanics, Boston, MA, **July 2014**
- Invited speaker**, Technical.ly Philly, Philadelphia, PA, **July 2014**
- Invited lecturer**, Human Posture & Locomotion, Department of Kinesiology, **April 2014**
- Invited lecturer**, Comparative Physiology (University of Pennsylvania), **March/April 2011-13**
- Research seminar**, Villanova University, Villanova, PA, **February 2014**
- Invited speaker**, Neuromechanics Winter Workshop (NSF-RCN), Princeton, NJ, **January 2014**
- Invited speaker**, Weeknights at the Wagner, Wagner Free Institute, Philadelphia, PA, **November 2013**
- Invited lecturer**, Introduction to Bioengineering (Temple University), **September 2013**
- Invited speaker**, TEDx Temple, Temple University, Philadelphia, PA, **April 2013**
- Keynote Address**, SOLUR Symposium, Arizona State University, Tempe, AZ, **March 2013**
- McGroddy Lecture Series invited speaker**, Saint Joseph's University, Philadelphia, PA, **March 2013**
- Research Seminar**, Drexel University, Philadelphia, PA, **February 2013**
- Invited speaker**, Philadelphia Science Festival, Great Gigs, **April 2012**
- Keynote Address**, SEARCH Awards Ceremony, University of Missouri - Kansas City, **April 2012**
- Research Seminar**, University of Missouri – Kansas City, **April 2012**
- Invited speaker**, Philadelphia Science Festival, Silly Science Café, **April 2012**
- Keynote Address**, Ohio Academy of Sciences Conference, Ashland University, **April 2012**
- Invited speaker**, Faculty Development Conference – Community Engagement Forum, Temple University, **March 2012**
- Opening Keynote Address**, CUR Dialogues, “Inspiring our next generation of leaders through undergraduate research and inquiry-based learning.” Washington D.C., **February 2011.**
- Invited speaker**, Metro-Engagement Forum, “Making Science Less Daunting and More Inspirational to the Public”, Temple University, **February 2011.**
- Congressional Briefing**, Council for Undergraduate Research (CUR), Washington D.C., **October 2010.**
- Research seminar**, University of Pennsylvania, “Morphological evolution in anole lizards due to competitive exclusion”, **October 2010.**
- Invited lecturer**, General Biomechanics (St. Joseph's University), **April 2010.**
- Research seminar**, Academy of Natural Sciences in Philadelphia, “Invasion dynamics: Are morphological changes due to phenotypic plasticity or adaptive evolution in the native green anole lizard?”, **March 2010**
- Departmental seminar**, Wildlife Conservation, University of Florida, “Morphological effects of the invasive brown anole on the native green anole.”, **January 2010**
- Departmental seminar**, University of South Florida, “Terrestrial locomotion and behavior in a marine fish”, **December 2009**
- Departmental seminar**, Whitney Marine Laboratory for the Biological Sciences, “Evolution of terrestriality in a marine fish”, **November 2009**
- Invited lecturer**, Comparative Zoology (University of Florida), **November 2009**

**MENTORING  
ACTIVITIES**

**Postdoctoral**

- Brian Chang (2018 – 2020): Mechanics of sharp intruders on dry and wet granular media.
- Swapnil Pravin (2017 – 2019): Simulations of granular medium behavior following impact of complex geometry intruders.
- Kyle Mara (2010 – 2013): Locomotor control of an unexpected slip perturbation and recovery.

Now: Assistant Professor at University of Southern Indiana

### **Graduate (Ph.D.)**

- Catalina Mantilla (2017 – present): Foot-ground interactions during incline running on sand.  
Elizabeth Tucker (2017 – present): How foot shape affects running behavior on different surface types.  
Aja Carter (2014 – 2020): Vertebral functional morphology in Temnospondyls. (University of Pennsylvania)  
Nicole Mazouchova (2012 – 2019): Locomotor control strategy during water-land transitions in turtles.  
Janne Pfeiffenberger (2012 – 2017): Biomechanical control mechanisms and morphological adaptations during locomotion in challenging scenarios. Now: Post-doctoral researcher at Tufts University

### **Graduate (M.S.)**

- Elizabeth Tucker (2015 – 2016): Impacts of drop perturbations on bipedally-running lizards.  
Catalina Mantilla (2014 – 2017): Biomechanics of ecomorphs: Investigating patterns in anoles and geckos. (Florida International University)

### **Graduate Committees**

- Callie Crawford, Ph.D. New Jersey Institute of Technology (2018 – present)  
Diana Lopez, Ph.D. Temple University (2017 – 2021)  
Annie Vahedipour, Ph.D. Department of Bioengineering (2018)

### **Graduate Committees (cont.)**

- Bessie Sagos, M.Arch., Department of Architecture (2015)  
Aja Carter, Ph.D. candidate, University of Pennsylvania. (2014 – 2020)  
Catalina Mantilla, Ph.D. candidate, Florida International University: Biomechanics of Ecomorphs: Investigating patterns in anoles and geckos. (2014 – 2017)  
Erin Graham, Ph.D. candidate: The effects of elevated carbon dioxide and temperature on primary production and inorganic carbon transport in three algal-invertebrate symbioses. (2011-2014)  
Laura Skorina, Ph.D. candidate: Leopard frog vision and perception. (2010-2013)  
Alex Hastings, Ph.D. candidate, University of Florida: Early Paleogene crocodyliform evolution in the neotropics: Evidence from Northeastern Colombia (2008-2009)

### **Undergraduates (graduating class)**

- Jamie Bregman (2024)  
Nora Parisi (2021)  
Alex Greenwood (2020)  
Waleed Nowayti (2020)  
Deshan O'Sullivan (2020)  
Brooke Quinn (2020): Patterns of foot flexibility during terrestrial running; Learning in spiders following limb autotomy. Currently: Doctoral program, Brown University.  
Taylor Neel (2018): Do spiders use learning to compensate for limb loss?  
Winston Colburn (2018): Effects of obstacles on running behavior in cockroaches  
Eshan Patel (2018)  
Alina Gawlinski (2017): Target-based control of limb movement during locomotion on complex surfaces in cellar spiders. Currently: Physicians' Assistant school  
Lawrence Gardner (2017): Convergent evolution of locomotion in cellar spiders and daddy long legs  
Emily Dabashinsky (2016): Effects of increased load on running in ghost crabs  
Joon Jung (2016): Kinematics of bipedal running in basilisk lizards  
Eric Tran (2016): Quantifying buoyancy in semi-aquatic turtles  
Kyle Hovey (2014): Gait transition following limb autotomy in spiders. Currently: Masters student John Carroll University.  
Elizabeth Szablya (2014): Effects of surface hardness on limb use during running in crabs. Currently: Teacher, Philadelphia Public School.



Vishal Dasari (2013, Univ. of Pennsylvania): Differential limb function during running in spiders  
 Dallas Malzi (2013): Effects of tail regeneration on locomotion in anole lizards. Currently: Physician.  
 Matthew Schmoyer (2013): Database management and design in *lizardbase*. Currently: Software engineer, 50onRed  
 Leslee Everett (2013): Toe pad morphology in green anole lizards.  
 Yu Liang (2012): Database management and design of *lizardbase*. Currently: Software engineer, Amazon (Seattle).  
 Sachin Parikh (2011): Effects of inverted running on center of mass dynamics.  
 \* Students below are from University of Florida unless otherwise noted \*  
 Amanda Ropp (2009): Biological illustration.  
 Cherice Smithers (2009): Effects of invasive brown anole on green anole limb plasticity.  
 Chris Grassa (2010): Functional population genomics.  
 Tristan Hensley (2010): Single setal force measurements in anoles.  
 Kevin Carbonell (2011): Hindlimb joint power production during jumping in frogs.  
 Judith Misas (2011): Muscle mechanical advantage variability in anole ecomorphs.  
 Israel Salazar (2011): The effects of substrate diameter and stability on lizard locomotion.  
 Joshua St. Louis (Harvard University, 2009): A phylogenetic comparison of anole toe pad morphology.

### High School Students

Tony Pan (2019)  
 Sarah Xi (2018-2019), Currently: Columbia University  
 Joseph Bondi (2014, Conestoga High School), Currently: Undergraduate, Boston University.  
 Amber Dai (2013 & 2014, Agnes Irwin High School), Currently: Undergraduate, Rice University  
 Laura Dallara (2013, Agnes Irwin High School), Currently: Undergraduate, University of Pennsylvania  
 Seamus Kirby (2013, Science Leadership Academy)  
 Alina Gawlinski (2012, Hatboro-Horsham High School), Currently: Undergraduate, Temple University  
 Kunj Shroff (2009, Deerfield Beach High School)

### PROFESSIONAL SERVICE

**Assistant editor, *Integrative and Comparative Biology*, 2019 – present**  
**Ad-hoc Reviewer** for *Anatomical Record, Behavioural Ecology, Bioinspiration & Biomimetics, Biology Open, Canadian Journal of Zoology, Current Biology, Evolution, Functional Ecology, Herpetological Journal, Integrative and Comparative Biology, The Journal of Experimental Biology, Journal of Experimental Zoology, Journal of the Royal Society Interface, Journal of Zoology, Philosophical Transactions of the Royal Society, Physiological and Biochemical Zoology, PLoS One, Review of Scientific Instruments, Zoology*  
**Guest editor, *PLoS Computational Biology*, 2019**  
**NSF Panelist, Member, 2013, 2014, 2015, 2017, 2021**  
**Ad hoc reviewer, National Science Foundation, IOS, 2010, 2018, 2019**  
**Member, Public Affairs Committee for The Soc. of Integ. & Comp. Biol., 2013 – 2017**  
**Member, Advisory Board for the Temple Contemporary Galleries, 2013 – present**  
**Faculty of 1000, member, 2012 – 2016**  
**Co-founder, *lizardbase.org*, 2009 – present**  
**Member, Student Awards Committee for The Soc. of Integ. & Comp. Biol., 2008-2011**  
**Judge, Alachua County Science Fair, Howard Bishop Middle School, 2009**  
**Curator, *Encyclopedia of Life Anolis carolinensis* entry, 2007-2008**  
**Contributor, Michigan-Jamaica library book exchange program, 2007**

**Instructor**, Howard Hughes High School Outreach Program, Harvard Univ., **2003**  
**Instructor**, Morse Elementary School After School Science and Math Program, **2001**

**UNIVERSITY  
SERVICE**

**Member**, Faculty Senate University Honors Oversight Committee, **2020 – present**  
**Member**, Biology Department Personnel & Promotion Committee, **2020 – present**  
**Faculty Advisor**, Biology Journal Club (Undergraduate), **2018 – present**  
**Member**, Undergraduate curriculum committee, **2017 – present**  
**University Marshal**, **2016 – present**  
**Co-organizer**, Biology Department Graduate Student Recruitment Weekend, **2017, 2019**  
**Member**, CST Teaching Award Committee, **2016**  
**Member**, Temple Contemporary Gallery Board of Advisors, **2013 – 2020**  
**Faculty Advisor**, Biology Graduate Student Society, **2012 – present**  
**Member**, Dean’s Advisory Committee, **2010 – 2016**  
**Search committee member**, Department of Kinesiology, Neuromechanics, **2013 – 2014**  
**Chair**, Biology Department Graduate Student Recruitment Weekend, **2012 – 2014**  
**Member**, Personnel and Promotions Committee, Department of Biology, **2011 – 2013**  
**Search committee member**, Department of Biology, Integrative Biology, **2011 – 2012**

**CONFERENCES**

American Society of Biomechanics  
(poster presentation: 2011)

American Society of Ichthyologists and Herpetologists  
(paper presentation: 2000; attended only: 1999)

Experimental Biology  
(poster presentation: 1998)

International Congress of Vertebrate Morphology  
(presentation: 2004)

Robotics: Science and Systems  
(presentation: 2015)

Society of Experimental Biology  
(presentation: 2001-2004)

Society of Integrative and Comparative Biology  
(presentation: 1999, 2001-2005, 2008-2015, 2017-2021; attended only: 2000, 2006)

World Congress of Biomechanics  
(presentation: 2014)

**SELECT  
RESEARCH  
PUBLICITY**

**General research coverage**

You’re the Expert, NPR show, May 2016  
The Inquirer, “Learning from lizards”, 9 January 2012  
Temple Magazine, “Do the locomotion”, Spring 2012

**Intertidal behavior of a marine fish**

ScienceDaily, “Landlubber fish leap for love when tide is right”, 29 August 2011  
National Geographic, “Fish (happily) out of water”, 1 September 2011

**Locomotor innovation for terrestriality in a marine fish**

PLoS Blogs Pick of the Month (Mauka to Makai), “Leapin’ blennies”, January 2011  
Practical Fishkeeping, “Pacific leaping blenny now considered a terrestrial species”, July 2010  
Wired Science (Wired Magazine), “How leaping fish species left the water”, June 2010

## **Water running in basilisk lizards**

- Newton Magazine ([www.newtonpress.co.jp](http://www.newtonpress.co.jp)), 2013.  
Kopfball ([www.kopfball.de](http://www.kopfball.de)), 2012.  
ABCNow Television, 30 November 2004.  
BBC Radio, “Science In Action” radio show. November 2004.  
BBC News ([news.bbc.co.uk](http://news.bbc.co.uk)), “How lizards walk on water”, 16 November 2004.  
California Academy of Sciences (California Wild), 24 November 2004. CBC Radio, “Quirks & Quarks” radio show. 20 November 2004.  
The Guardian, “How to walk on water”, 18 November 2004. National Geographic News, “How ‘Jesus Lizards’ Walk on Water”. November 2004  
Nature Magazine, “High-speed biomechanics: Caught on camera”  
NewsDay, “Leapin’ lizard walks on water”, 16 November 2004.  
ScienceNow ([sciencenow.sciencemag.org](http://sciencenow.sciencemag.org)), “Watch Your Step”, November 2004.  
SpektrumDirekt ([www.wissenschaft-online.de](http://www.wissenschaft-online.de)), “Mit voller Kraft übers Wasser”, 17 November 2004.  
Spiegel Online ([www.spiegel.de](http://www.spiegel.de)), “Das Geheimnis der Jesus-Echse”, 29 November 2004.

## **Gecko adhesion**

- Here and Now (NPR, national), 22 July 2016  
The Pulse (NPR, Philadelphia), 8 July 2016  
ABC Television, 8 June 2000.  
BBC Television, 12 June 2000.  
BusinessWeek, “Geckos stick like glue – without goo”, 26 June 2000.  
CBC Television, 8 June 2000.  
CBS Television, 8 June 2000.  
CNN Television, 8 June 2000.  
Discovery Channel, 8 June 2000.  
The Economist, “Climbing the walls”, 10 June 2000.  
Los Angeles Times, “Sticky-footed gecko a true force of nature”, 8 June 2000.  
Natural History magazine, “Get a Grip”, July 2000.  
National Geographic News, “Gecko stickum: recipe for synthetic adhesive”, 8 June 2000.  
National Public Radio, 8 June 2000.  
NBC Television, 8 June 2000.  
New York Times, “Pitter-patter of hairy feet”, 13 June 2000.  
Science Magazine, “How geckos climb the walls”, 9 June 2000.

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