

Gary B. Gillis

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Mt. Holyoke College, 50 College Street, South Hadley, MA 01075
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Email: ggillis@mtholyoke.edu

EDUCATION:

- 1997 Ph.D. Ecology and Evolutionary Biology, University of California, Irvine,
Advisor: George Lauder
- 1990 B.S. (Biology), B.A. (History), Magna Cum Laude. Pacific Lutheran University,
Tacoma WA

POSITIONS:

- 2019-Present Norman Wait Harris and Emma Gale Harris Foundation Professor of Biology
- 2015-Present Associate Dean of Faculty, Mount Holyoke College
- 2015-Present Director of the Science Center, Mount Holyoke College
- 2013-Present Professor, Dept. of Biology, Mount Holyoke College
- 2012-2013 Program Director (half-time), Physiological and Structural Systems Cluster, Division
of Integrative Organismal Systems, National Science Foundation
- 2010-2015 Chair, Neuroscience and Behavior Program, Mount Holyoke College
- 2008-2013 Associate Professor, Dept. of Biology, Mount Holyoke College
- 2003-Present Member, Neuroscience and Behavior Program, Mount Holyoke College
- 2003-Present Member, Graduate Program in Organismal and Evolutionary Biol., UMass Amherst
- 2002-2008 Assistant Professor, Dept. of Biology, Mount Holyoke College
- 2001-2002 Research Associate, Concord Field Station, Harvard University
- 1998-2001 Postdoctoral Fellow, Concord Field Station, Harvard University

GRANTS, AWARDS AND PUBLICATIONS

Grants and Awards:

- 2021 HHMI Inclusive Excellence (\$30,000)
- 2017-2018 NSF 1747859 “Symposium: Sensory feedback and animal locomotion: Perspectives
from biology and biorobotics” (\$15,550-IOS Conferences; Co-PI Jessica Fox)
- 2011-2015 NSF 1051603 “RUI Collaborative: Biomechanics and control of landing in toads”
(\$188,035 + \$12,000 REU-Processes Structure and Integrity; Co-PI Manny Azizi)
- 2011 Mount Holyoke’s Meribeth E. Cameron Faculty Prize for Scholarship (\$3,000)
- 2009 Mount Holyoke College Faculty Fellowship (\$10,000)
- 2003-2007 NSF 0316418 “RUI: Body size, limb posture and muscle strain during terrestrial
locomotion” (\$201,486-Ecological and Evolutionary Physiology)
- 1998-2001 NIH NRSA F32 AR08559-01 “Plasticity of limb muscle function during locomotion”
(\$94,236-National Institute of Arthritis and Musculoskeletal and Skin Diseases)

Peer-reviewed publications (*represents undergraduate coauthor):

37. Cox, S.M. and **G.B. Gillis**. 2020. The integration of sensory feedback in the modulation of anuran landing preparation. *J. Exp. Biol.* 223:1-10.
36. Ekstrom, L.J., Panzini C. and **G.B. Gillis**. 2018. Vision fine-tunes preparation for landing in the cane toad, *Rhinella marina*. *Biol. Lett.* 14:2-6.
35. Cox, S.M., Ekstrom, L.J. and **G.B. Gillis**. 2018. The influence of visual, vestibular and hindlimb proprioceptive ablations on landing preparation in cane toads. *Int. Comp. Biol.* 58:894-905.
34. Aiello, B.R., **Gillis, G.B.** and J.L. Fox. 2018. Sensory feedback and animal locomotion: perspectives from biology and biorobotics: an introduction to the symposium. *Int. Comp. Biol.* 58:827-831.
33. Cox, S. and **G.B. Gillis**. 2017. Evidence toads may modulate landing preparation without predicting impact time. *Biology Open.* 6:71-76.
32. **Gillis, G.B.** and T.E. Higham. 2016. Consequences of lost endings: caudal autotomy as a lens for focusing attention on tail function during locomotion. *J. Exp. Biol.* 219:2416-2422.
-Invited Commentary
31. Cox, S. and **G.B. Gillis**. 2016. Sensory feedback and coordinating asymmetrical landing in cane toads. *Biology Letters.* 12:20160196.
30. Cox, S. and **G.B. Gillis**. 2015. Forelimb kinematics during hopping and landing in toads. *J. Exp. Biol.* 218:3051-3058.
29. Ekstrom, L. and **G.B. Gillis**. 2015. Pre-landing wrist muscle activity in landing toads. *J. Exp. Biol.* 218:2410-2415.
28. *Schnyer, A., *Gallardo, M. Cox, S. and **G.B. Gillis**. 2014. Indirect evidence for elastic energy playing a role in limb recovery during toad hopping. *Biology Letters.* 10(7): 1-6.
doi: 10.1098/rsbl.2014.0418.
27. **Gillis, G.B.**, Ekstrom, L. Azizi, E. 2014. Biomechanics and control of landing in toads. *Integrative and Comparative Biology.* 54(6):1136-1147. doi: 10.1093/icb/icu053.
26. **Gillis, G.B.**, Kuo, C. and D.J. Irschick. 2013. The impact of tail loss on stability during lizard jumping. *Physiological and Biochemical Zoology.* 86(6):680-689.
25. Kuo, C., **Gillis, G.B.** and D.J. Irschick. 2012. Take this broken tail and learn to jump: the ability to recover from reduced in-air stability in tailless green anole lizards (*Anolis carolinensis* [Squamata: Dactyloidae]). *J. Biol. Linn. Soc.* 107:583-592.
24. Gilman, C.A., Bartlett, M. **Gillis, G.B.** and D.J. Irschick. 2012. Total recoil: Perch compliance alters jumping performance and kinematics in green anole lizards (*Anolis carolinensis*). *J. Exp. Biol.* 215:220-226.
23. Kuo, C., **Gillis, G.B.** and D.J. Irschick. 2011. Loading effects on jump performance in green anole lizards (*Anolis carolinensis*). *J. Exp. Biol.* 214:2073-2079.

22. *Akella, T. and **G.B. Gillis**. 2011. Hopping isn't always about the legs: Forelimb muscle activity patterns during toad locomotion. *J. Exp. Zool. A*. 315A:1-11.
21. **Gillis, G.B.**, *Akella, T., and *Gunaratne, R. 2010. Do toads have a jump on how far they hop? Pre-landing activity timing and intensity in forelimb muscles of hopping *Bufo marinus*. *Biology Letters*. 6:486-489.
-featured in the New York Times
20. **Gillis, G.B.**, *Bonvini, L.A. and D.J. Irschick. 2009. Losing stability: the impact of caudal autotomy on jumping in the arboreal lizard *Anolis carolinensis*. *J. Exp. Biol.* 212:604-609.
-featured in issue's highlights as well as by Discovery Channel Canada, CBC radio's 'Quirks and Quarks', Wired.com, Toronto Star, San Diego Union Tribune and others
19. **Gillis, G.B.** 2007. The role of hindlimb flexor muscles during swimming in the toad, *Bufo marinus*. *Zoology* 110:28-40.
18. **Gillis, G.B.**, *Flynn, J.P. McGuigan, P. and A.A. Biewener. 2005. Patterns of strain and activation in the thigh muscles of goats across gaits during level locomotion. *J. Exp. Biol.* 208:4599-4611.
17. **Gillis, G.B.** and A.A. Biewener. 2003. The importance of functional plasticity in the design and control of the vertebrate musculoskeletal system. In *Vertebrate Biomechanics and Evolution* (ed. V.L. Bels, J.P. Gasc, and A. Casinos). Bios Scientific Publishers Ltd., Oxford.
16. Azizi, E. **G.B. Gillis**, and E.L. Brainerd. 2002. Morphology and mechanics of myosepta in a swimming salamander (*Siren lacertina*). *Comp. Biochem. Physiol. A*. 133:967-978.
15. **Gillis, G.B.** and A.A. Biewener. 2002. Effects of surface grade on proximal hindlimb muscle strain and activation during rat locomotion. *J. Appl. Physiol.* 93:1731-1743.
14. Ashley-Ross, M.A. and **G.B. Gillis**. 2002. A brief history of functional morphology. *Integ. and Comp. Biol.* 42: 183-189.
13. **Gillis, G.B.** and R.W. Blob. 2001. How muscles accommodate movement in different physical environments: aquatic versus terrestrial locomotion. *Comp. Biochem. Physiol. A*. 131:61-75.
12. **Gillis, G.B.** and A.A. Biewener. 2001. Hindlimb muscle function in relation to speed and gait: *in vivo* patterns of strain and activation in a hip and knee extensor of the rat (*Rattus norvegicus*). *J. Exp. Biol.* 204:2717-2731.
11. **Gillis, G.B.** and A.A. Biewener. 2000. Hindlimb extensor muscle function during jumping and swimming in the toad (*Bufo marinus*). *J. Exp. Biol.* 203:3547-3563.
10. **Gillis, G.B.** 2000. Patterns of muscle activity during terrestrial locomotion in the American eel (*Anguilla rostrata*). *J. Exp. Biol.* 203:471-480.
9. Biewener, A.A. and **G.B. Gillis**. 1999. Dynamics of muscle function during locomotion: accommodating variable conditions. *J. Exp. Biol.* 202:3387-3396.
8. **Gillis, G.B.** 1998. Neuromuscular control of anguilliform locomotion: patterns of red and white muscle activity during swimming in the American eel (*Anguilla rostrata*). *J. Exp. Biol.* 201:3245-3256.

7. **Gillis, G.B.** 1998. Environmental effects on undulatory locomotion in the American eel (*Anguilla rostrata*): kinematics in water and on land. *J. Exp. Biol.* 201:949-961.
6. **Gillis, G.B.** 1997. Anguilliform locomotion in an elongate salamander (*Siren intermedia*): effects of speed on axial undulatory movements. *J. Exp. Biol.* 200:767-784.
5. Lauder, G.V. and **G.B. Gillis.** 1997. Origin of the amniote feeding mechanism: experimental analyses of outgroup clades. In *Amniote Origins: Completing the Transition to Land* (ed. S. Sumida and K. Martin), pp. 169-206. Academic Press, San Diego.
4. **Gillis, G.B.** 1996. Undulatory locomotion in elongate aquatic vertebrates: anguilliform swimming since Sir James Gray. *Am. Zool.* 36:656-665.
3. **Gillis, G.B.** and G.V. Lauder. 1995. Kinematics of feeding in bluegill sunfish: is there a general distinction between aquatic capture and transport behaviors? *J. Exp. Biol.* 198:709-720.
2. **Gillis, G.B.** and G.V. Lauder. 1994. Aquatic prey transport and the comparative kinematics of *Ambystoma tigrinum* feeding behaviors. *J. Exp. Biol.* 187:159-179.
1. Collette, B.B. and **G.B. Gillis.** 1992. Morphology, systematics, and biology of the double-lined mackerels (*Grammatorcynus*, Scombridae). *Fish. Bull.* U.S. 90:13-53.

Book Reviews:

- 2003 *Prime Mover: A Natural History of Muscle.* By Steven Vogel. Quarterly Review of Biology. 78:87.
- 2003 *Chance in Biology.* By Mark Denny and Steven Gaines. Journal of Experimental Biology. 206:2300-2301

Popular Science Publications (Feature writer for Outside JEB, 2003-2013):

- 2013 Open wide (and close more softly). *J. Exp. Biol.* 216 (11) vi.
- 2013 Frog feeding, tongues and temperature. *J. Exp. Biol.* 216 (5) vi.
- 2012 Not all muscles work best at the same speed. *J. Exp. Biol.* 215 (5) iv.
- 2011 Finding your place in school. *J. Exp. Biol.* 214 (21) iv.
- 2011 Hummingbird tongue tips twist to trap nectar. *J. Exp. Biol.* 214 (17) iv.
- 2011 Running forerunners. *J. Exp. Biol.* 214 (11) vi.
- 2011 Spiders help grasshoppers hop. *J. Exp. Biol.* 214 (5) vi.
- 2010 Bigger isn't always better. *J. Exp. Biol.* 213 (23) v-vi.
- 2010 Weighing in on bird bones. *J. Exp. Biol.* 213 (17) v.
- 2010 Frog muscles start stretched. *J. Exp. Biol.* 213 (11) vi.
- 2010 Contracting muscles stiffen their aponeuroses. *J. Exp. Biol.* 213 (5) vi.
- 2009 Getting into the swing of walking. *J. Exp. Biol.* 212 (23) v.
- 2009 Sexy and only slightly slower. *J. Exp. Biol.* 212 (17) v.

- 2009 Seductive singers chew softly. *J. Exp. Biol.* 212 (12) iv.
- 2009 Small genomes take flight. *J. Exp. Biol.* 212 (5) v.
- 2008 Are the kids weighing you down? *J. Exp. Biol.* 211 (17) iv.
- 2008 Shifting shape improves escape. *J. Exp. Biol.* 211 (5) vii.
- 2007 Stressed lizards run farther. *J. Exp. Biol.* 210 (23) vi.
- 2007 Snail trails. *J. Exp. Biol.* 210 (17) iv.
- 2007 Fast fathers father more. *J. Exp. Biol.* 210 (11) vi.
- 2007 Chimp power. *J. Exp. Biol.* 210 (3) iv.
- 2006 How to tell whose bite is biggest. *J. Exp. Biol.* 209 (21) v-vi.
- 2006 Big jumpers can't last. *J. Exp. Biol.* 209 (15) iv.
- 2006 Not your typical baby's rattle. *J. Exp. Biol.* 209 (9) v.
- 2006 We got the beat. *J. Exp. Biol.* 209 (3) iv.
- 2005 Flying lizards fall fast. *J. Exp. Biol.* 208 (21) v.
- 2005 Look out below. *J. Exp. Biol.* 208 (15) vi.
- 2005 Sticky but clean. *J. Exp. Biol.* 208 (8) v.
- 2005 Snakes eating more than their tails. *J. Exp. Biol.* 208 (3) v.
- 2004 Leaping lizards. *J. Exp. Biol.* 207 (23) v.
- 2004 Swinging is more costly than we thought. *J. Exp. Biol.* 207 (11) v-vi.
- 2004 Walk on four legs not on two. *J. Exp. Biol.* 207:713-714.
- 2003 Row, row, row, your wings. *J. Exp. Biol.* 206:4187.
- 2003 Pedestrians pay to push. *J. Exp. Biol.* 206:2907.
- 2003 Swimming with the larval fishes. *J. Exp. Biol.* 206:1768.
- 2003 Evolving couch-potatoes and endurance athletes. *J. Exp. Biol.* 206:790.

CONTRIBUTED PAPERS, SYMPOSIUM TALKS AND DEPARTMENT SEMINARS

Contributed Papers (*represents undergraduate coauthor):

- 2016 "Sensory modalities and coordinated landing in cane toads" (with S. Cox). Society for Integrative and Comparative Biology. Portland OR.
- 2015 "Is visual feedback necessary for coordinated landing in hopping toads?" (with L. Macesic and *D. Kvistad). Society for Integrative and Comparative Biology. West Palm Beach FL.
- 2014 "Might elastic energy play a role in limb recovery during toad hopping?" (with Mirialys Gallardo*, Ariela Schnyer* and Suzanne Cox). World Congress of Biomechanics. Boston MA.

- 2014 “Indirect evidence of elastic energy storage and release during limb recovery in toad hopping.” (with Mirialys Gallardo*, Ariela Schnyer* and Suzanne Cox). Society for Integrative and Comparative Biology. Austin TX.
- 2014 “Using anuran landing as a model for studying controlled deceleration.” (with Laura Ekstrom and Emanuel Azizi). Society for Integrative and Comparative Biology. Austin TX.
- 2013 “Making a splash: the effect of environment on landing preparation in *Lithobates catesbeiana*” (with Hilary Katz*, Erica Levin* and Laura Macesic). Society for Integrative and Comparative Biology. San Francisco CA.
- 2013 “What goes up must come down: forelimb kinematics in cane toads during jumping and landing.” (with Eleni Karagiannis*, Nell Maynard*, Flynn Vickowski* and Laura Macesic). Society for Integrative and Comparative Biology. San Francisco CA.
- 2012 “Pre-landing muscle tuning in the forearm and shoulder of *Bufo marinus*” (with Laura Macesic). Society for Integrative and Comparative Biology. Charleston, South Carolina.
- 2012 “Do bullfrogs tune forelimb muscle activity in anticipation of landing?” (with Laura Macesic, Hilary Katz* and Becky Hicks*). Society for Integrative and Comparative Biology. Charleston, South Carolina.
- 2012 “Horizontal and vertical landing in the Cuban tree frog, *Osteopilus septentrionalis*” (with Laura Macesic and Becky Hicks*). Society for Integrative and Comparative Biology. Charleston, South Carolina.
- 2012 “The role of practice (or lack thereof) on the recovery of jump performance in tailless green anole lizards *Anolis carolinensis*” (with Chi-Yun Kuo and Duncan Irschick). Society for Integrative and Comparative Biology. Charleston, South Carolina.
- 2011 “Avoiding falling flat on your face: a lesson from toads” (with Laura Macesic). American Society of Ichthyologists and Herpetologists. Minneapolis, Minnesota.
- 2011 “The role of vision in coordinating forelimb muscle activity patterns during toad landing” (with Catherine Tierney*). Society for Integrative and Comparative Biology. Salt Lake City, Utah.
- 2010 “Pectoral and forelimb muscle function during landing in *Bufo marinus*” (with Trupti Akella*). Society for Integrative and Comparative Biology. Seattle, Washington.
- 2009 “Flexor vs. extensor activity during jumping and swimming in *Rana pipiens*” (with Noelle Noyes*). Society for Integrative and Comparative Biology. Boston, Massachusetts.
- 2008 “Losing stability: tail loss and jumping in the lizard *Anolis carolinensis*” (with Lauren Bonvini* and Duncan Irschick). Society for Integrative and Comparative Biology. San Antonio, Texas.
- 2007 “Integrating biology and chemistry in a first-semester college course” (with Sean Decatur and Amy Springer). American Chemical Society. Boston, Massachusetts.

- 2007 “Hindlimb muscle actions over ontogeny in goats and sheep” (with Andrew Carroll and Andrew Biewener). 8th International Congress of Vertebrate Morphology. Paris, France.
- 2007 “Effects of ontogenetic increases in size on muscle strain and activation patterns during goat locomotion” (with Lauren Bonvini*). Society for Integrative and Comparative Biology. Phoenix, Arizona.
- 2007 “Hindlimb flexor muscle strain during swimming in the toad, *Bufo marinus*” (with Dery Miller*). Society for Integrative and Comparative Biology. Phoenix, Arizona.
- 2006 “Strain and activation in the thigh muscles of guinea pigs during level, incline and decline Locomotion”. Society for Integrative and Comparative Biology. Orlando, Florida.
- 2006 “EMG Activity in hindlimb flexor muscles during swimming in the toad, *Bufo Marinus*” (with Melanie Hnot*). Society for Integrative and Comparative Biology. Orlando, Florida.
- 2004 “Proximal hindlimb muscle strain and activation patterns in goats: Do differences in animal size impact limb muscle function?” (with A. Biewener and P. McGuigan). Society for Experimental Biology. Edinburgh, Scotland.
- 2002 “*In vivo* patterns of strain and activity in thigh muscles of goats”. Society for Integrative and Comparative Biology. Anaheim, California.
- 2001 “Plasticity in limb muscle function during rat locomotion”. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Chicago, Illinois.
- 2000 “Toad hindlimb muscle function during hopping and swimming”. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Atlanta, Georgia.
- 1999 “Environmentally elicited plasticity in axial muscle activity during undulatory locomotion in the American eel, *Anguilla rostrata*”. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Boston, Massachusetts.
- 1997 “Red and white muscle activity during swimming at different speeds in the American eel (*Anguilla rostrata*)”. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Denver, Colorado.
- 1995 “Kinematics of locomotion in water and on land by the eel, *Anguilla rostrata*”. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Washington D.C.
- 1994 The effects of speed on anguilliform swimming in a sirenid salamander. Presented at the meeting of the International Society of Vertebrate Morphologists. Chicago, Illinois.
- 1994 “Effects of speed on aquatic undulatory propulsion in the salamander, *Siren intermedia*. Presented at the annual meeting of the Society for Integrative and Comparative Biology. Saint Louis, Missouri.

1992 “Kinematics of aquatic prey transport” (with G.V. Lauder). Society for Integrative and Comparative Biology. Vancouver, British Columbia

Invited Presentations

- 2018 “Preparing for impact: Sensory feedback and controlled landing in hopping toads” (with Suzanne Cox). Presented in a symposium on sensory feedback and animal locomotion for the Society of Integrative and Comparative Biology, San Francisco, California
- 2014 “Think before you jump; know how to land”. Presented at TEDx event, Springfield MA.
- 2014 “Using anurans as a model to study controlled deceleration” (with Laura Ekstrom and Manny Azizi). Presented in a symposium on new directions in terrestrial locomotion for the Society for Integrative and Comparative Biology, Austin, Texas.
- 2012 “The impact of tail loss on locomotor stability and mechanics”. Presented in a symposium on caudal autotomy and regeneration in lizards at the Seventh World Congress of Herpetology in Vancouver, Canada.
- 2006 “Body size and thigh muscle actions in mammalian quadrupeds”. Presented in a symposium on scaling and biomechanics at the annual meeting of the Society for Experimental Biology, Canterbury, U.K.
- 2004 “Effects of body size on homologous muscle strain regimes in mammalian quadrupeds.” Presented in a symposium on comparative *in vivo* biomechanics and muscle function at a joint meeting of the American Physiological Society and the American College of Sports Medicine, Austin, Texas.
- 2001 “Patterns of strain and activation in proximal limb muscles of the rat: do fascicles change length substantially when active?” Presented in a symposium on *in vivo* muscle function for the American Society for Biomechanics, San Diego, California
- 2001 “The importance of functional plasticity in the evolutionary design of the vertebrate musculoskeletal system”. Presented in a symposium on biomechanics and evolution for the Society for Experimental Biology, Canterbury, UK.
- 2000 “A brief history of functional morphology” (with Miriam Ashley-Ross). Presented in a symposium on integrative functional morphology for the Society for Integrative and Comparative Biology, Chicago, Illinois.
- 2000 “How muscles accommodate movement in different physical environments”. Presented in a symposium on the comparative biomechanics of locomotion for the European Society for Comparative Physiology and Biochemistry, Liege, Belgium.
- 1998 “Neuromuscular control of swimming in eels: the influence of body form on muscle activity patterns”. Presented in a symposium on locomotion in fishes for the Southern California Academy of Sciences, Pomona, California.
- 1995 “Kinematics and mechanics of anguilliform locomotion in fishes and salamanders”. Presented in a symposium on new approaches to the biomechanics of locomotion for the Society for Integrative and Comparative Biology, Washington D.C.

Invited Department Research Seminars (since 2009)

2014	Introductory Biology Course, Amherst College
2013	Dept. of Biology, Franklin and Marshall College
2013	Dept. of Biology, Williams College
2012	Dept. of Biology, Wesleyan University
2011	Dept. of Kinesiology, UMass Amherst
2011	Dept. of Biology, Wellesley College
2011	Dept. of Biology, Fordham University
2011	Dept. of Biology, Central Connecticut State University
2010	Dept. of Biology, Amherst College
2009	Dept. of Biology, Rhode Island College

PROFESSIONAL ORGANIZATIONS AND ACTIVITIES

Societies:

American Physiological Society (APS)
American Society of Biomechanics (ASB)
The Society for Experimental Biology (SEB)
The Society for Integrative and Comparative Biology (SICB)

Service:

2015	Invited reviewer of Stonehill College Neuroscience Program
2012-2013	Half-time Program Director, Integrative Organismal Systems, NSF
2011	Appointed to SICB's Nominating Committee
2010	Coordinator of student paper and poster judging for Division of Vert. Morph. (SICB)
2009-2014	Core member and steering committee member of NSF-sponsored XROMM RCN (research coordination network exploring x-ray motion analysis) operated out of Brown University (Beth Brainerd, PI) and UNLV (David Lee, PI)
2009	NSF Processes, Structures and Integrity Proposal Review Panel
2009	Invited Reviewer of HHMI-sponsored Bioengineering Program at Union College
2007	NSF Structures, Materials and Movement Proposal Review Panel
2007	Invited Panelist, "Bioengineering in Undergraduate Education, a Roundtable Discussion", Grand opening of Union College's Center for Bioengineering and Computational Biology
2006-2010	Secretary, Division of Vertebrate Morphology, SICB
2006	Invited Panelist, "Landing an Academic Job", SICB
2006	Judge, Best Student Paper Award (Division of Comparative Physiology and Biochemistry, SICB)
2005	NSF Ecological and Evolutionary Physiology DDIG Grant Proposal Advisory Panel

(Functional Morphology Cluster)

2002-Present Quarterly Outside JEB contributor, Journal of Experimental Biology

1999-Present Ad hoc reviewer of NSF Grants

Manuscript reviews for:

Advances in Physiology Education, American Zoologist, The Anatomical Record, Behavioral Ecology, Biological Bulletin, Biological Journal of the Linnean Society, Biology Letters, Brain Research, Clinical Neurophysiology, Comparative Biochemistry and Physiology, Environmental Biology of Fishes, Functional Ecology, Integrative and Comparative Biology, Journal of Anatomy, Journal of Biomechanics, Journal of Experimental Biology, Journal of Experimental Zoology, Journal of Morphology, Journal of Neuroscience Methods, Journal of Zoology, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society: Biological Science, Physiological and Biochemical Zoology, Zoology

Media exposure and local public talks:

2014 TEDx talk, Springfield MA

2013 Science Café, Essalon Restaurant, Hadley MA

2010 Research on toad landing covered in New York Times

2010 WAMC Radio's Academic Minute, talking about toad landing

2009 Discovery Channel Canada and CBC Radio's Quirks and Quarks, talking about jumping lizards

TEACHING EXPERIENCE

Mount Holyoke College:

Biology 145, Comparative Vertebrate Physiology, Fall 2010, 2011

Biology 150, Solving Life's Problems, Fall 2002, 03, 04

Biology 160, Integrated Introduction to Biology and Chemistry, Fall 2006, 07, 08

Biology 321, Extreme Life, Fall 2004, 07, 10, 11, Spring 16

Biology 322, Comparative Biomechanics, Spring 2003, 05, 07, 09, 11, 15

Biology 335, Mammalian Anatomy, Spring 2004, 08, 10, 12, Fall 2014

Biology 295, Sarah Levine, Kristen Coakley (2002-2003); Deborah Crabtree, Brianna Hirsch (2003-2004); Lauren Bonvini, Deborah Crabtree, Emily Goldstein, Melanie Hnot, Lane Wallett, Dery Miller (2004-2005), Dery Miller (2005-2006), Allison Haley, Lindsay Goodale (2006-2007), Trupti Akelli, Rashmi Gunaratne, Addison Kemp (2007-2008), Rashmi Gunaratne, Alice (Kelsey) Lewis (2008-2009), Caitlin Parsley, Jessica Suhowsky, Rebekah Wieland (2009-2010); Gloria Boye, Rebecca Hicks, Hilary Katz, Kristen Koepsell, Erica Levin (2010-2011); Eleni Karagiannis (2011-2012)

Biology 395, Kristen Coakley, Jennifer Matera, Helen Moriera (2003-2004), Anneliese Lillinethal (2004-2005), Melanie Hnot (2005-2006), Lauren Bonvini, Emily Goldstein, Dery Miller (2006-2007), Lindsay Goodale, Allison Haley (2007-2008); Trupti Akella, Lauren Fields, Addison Kemp (2008-2009), Rashmi Gunaratne, Ebony Williams (2009-2010); Catherine Tierney (2010-2011); Gloria Boye, Erica Levin (2011-2012),

Eleni Karagiannis (2012-2013), Eleanor Maynard (2013-2014), Jessica Murray (2014-2015), Sarah Crocker (2015-2016)

Neuro 395, Laura Cirillo (2010-2011); Rebecca Hicks, Hilary Katz (2011-2012), Flynn Vickowski (2013-2014), Daniella Acosta (2014-2015)

Mount Holyoke Thesis Students Supervised:

- 2013-2014 Eleanor Maynard: “My tail costs an arm and a leg; effects of tail loss on locomotor kinematics in *Anolis carolinensis*”
- 2013-2014 Flynn Vickowski: “Importance of the tail in *Anolis carolinensis* for controlling in-air stability”
- 2012-2013 Eleni Karagiannis: “Does height matter? The effects of takeoff elevation on forelimb movements during jumping and landing in cane toads”
- 2011-2012 Rebecca Hicks: “Sticky and fast: jumping and landing of the Cuban tree frog (*Osteopilus septentrionalis*)”
- 2011-2012 Erica Levin: “A comparative study of forelimb muscle recruitment during landing in *Rana catesbeiana*, *Rana pipiens* and *Bufo marinus*”
- 2010-2011 Catherine Tierney: “The role of vision in coordinating prelanding forelimb muscle activity in hopping toads (*Bufo marinus*)”
- 2009-2010 Rashmi Gunaratne: “The effect of swimming speed on hindlimb muscle recruitment in the toad, *Bufo marinus*.”
- 2008-2009 Trupti Akella: “Function of pectoral and forelimb muscles during the aerial and landing phases of jumping in toads, *Bufo marinus*”
- 2008-2009 Lauren Fields: “Effects of temperature on antifreeze protein production in the longhorn sculpin (*Myoxocephalus octodecemspinosus*)”
- 2008-2009 Addison Kemp: “Kinematics of climbing and unconventional launching in the small marsupial sugar glider *Petaurus breviceps*”
- 2007-2008 Lindsay Goodale: “Kinematics of the chameleon feeding mechanism through ontogeny”
- 2006-2007 Lauren Bonvini: “Jumping behavior and the effects of caudal autotomy on performance in *Anolis carolinensis*”
- 2006-2007 Dery Miller: “Knee flexor muscle actions during swimming in the toad, *Bufo marinus*”
- 2005-2006 Melanie Hnot: “Muscle activation and strain in the guinea pig hindlimb”
- 2004-2005 Anneliese Lillienthal: “The art of biology: Exploring and illustrating the hindlimb morphology of the marine toad, *Bufo marinus*”
- 2003-2004 Kristen Coakley: “Effects of caffeine on exercise endurance and gait transition speeds in rats”

Other Thesis Students Supervised:

- 2017- Present Talia Weiss, Ph.D. Thesis Committee, Virginia Tech. University
- 2013-2017 Suzanne Cox, Director of Ph.D. Thesis Committee, OEB Dept. UMass Amherst
- 2013-2017 Yi-Fen Lin, Ph.D. Thesis Committee, OEB Dept. UMass Amherst
- 2009-2015 Chi-Yun Kuo, Ph.D. Thesis Committee, OEB Dept. UMass Amherst
- 2005-2009 Natasha Taft, Ph.D. Thesis Committee, OEB Dept. UMass Amherst
- 2006-2008 Philip Bergmann, Ph.D. Thesis Committee, OEB Dept. UMass Amherst
- 2004-2005 Nicole Danos, Master’s Thesis Committee, OEB Dept. UMass Amherst
- 2002-2004 Tobias Landberg, Master’s Thesis Committee, OEB Dept. UMass Amherst

2001-2002 John Flynn, Undergraduate Honors Thesis, Harvard University

Other teaching experience:

Princeton University: National Academies Education Fellow in the Sciences 2015-2016

Harvard University: Biology 21, Structure and Function of Vertebrates (Guest lecturer), 20-40 students, Fall 1999-2001

U.C. Irvine: Biology 169, Functional Human Anatomy, 250 students, Spring 1998

OTHER RELEVANT EXPERIENCE

College programs and committees:

2020-Present President's Cabinet
2020-2021 Covid-related Emergency Response teams: Travel, Classroom, Health/Safety
2019-2021 Operations Policy Council Executive Committee
2018-2019 Search Committee for Director of McCulloch Center for Global Initiatives
2017-2018 Search Committee chair for Director of Microscopy Facility
2017-18 Search Committee for Title IX and Section 504 Coordinator
2017-Present IACUC Chair
2016-17 Search Committee chair for Director of Pre-Health Office
2016-17 Search Committee chair for Director of Botanic Garden
2016-17 Search Committee for Director of Professional & Graduate Education
2015-Present Risk and Compliance Committee (as associate dean)
2015-Present Library and Information Technology Committee (as associate dean)
2015-Present Planning and Budget Committee (as associate dean)
2015-Present Technology and Accessibility Committee (as associate dean)
2014 Faculty Committee on Appeals
2014 Phi Beta Kappa Prize Committee
2013-2014 Faculty Conference Committee
2012 Dean of Faculty Search Committee
2011 Dean's Discussion presenter
2010 Research presentation for trustees
2010-2011 Peak performance workshops for Athletics department
2010 Advising table co-leader on difficult conversations with advisees
2010-2012 Faculty Affirmative Action Committee (Chair, 2011-2012)
2009 Presenter in First-year Lecture Series
2009 Plagiarism Website Committee
2007-2008 LITS Director Search Committee
2007 HHMI Biology/Physics Grant Steering/Writing Committee
2007 Institutional Animal Care and Use Committee (IACUC), Mt. Holyoke College
2007 Phi Beta Kappa Prize Committee
2005 Science Librarian Search Committee
2004-2007 LITS Committee (Chair, 2006-2007)
2004-2005.1 HHMI Biology/Chemistry Grant Steering Committee
2002-2003 Institutional Review Board (IRB)