

# YI-FEN LIN

Organismic and Evolutionary Biology  
University of Massachusetts, Amherst  
321 Morrill Science Center, Amherst, MA 01003  
(413) 230-8170 | [yifen@bio.umass.edu](mailto:yifen@bio.umass.edu)

## RESEARCH INTERESTS

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Biomechanics and functional morphology of vertebrate locomotor strategies  
Material and mechanical properties of biological systems  
Biomimetics

## EDUCATION

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2011- present Ph. D. Candidate, University of Massachusetts Amherst, OEB program  
2009 M. S., National Taiwan University, Ecology and Evolutionary Biology  
2005 B. S., National Taiwan University, Life Science

## GRANTS AND FELLOWSHIPS

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2014-2015 **National Science Foundation**, Doctoral Dissertation Improvement Grants, “Burrowing behavior of Eastern moles”. \$16,997  
2013 April **Natural History Collections**, Summer Scholarship, “Burrowing performance of North American moles (*Scalopus aquaticus* and *Condylura cristata*)”. \$4000  
2013 Jan **UMass OEB program**, 2013 Travel grants \$450  
2012 Dec **Sigma-Xi**, Grants-in-Aid of Research, “Burrowing performance in three American moles”. \$500  
2012 Jan **UMass OEB program**, 2012 Travel grants \$400  
2011-2012 **National Science Foundation**, Division of Biological Databases and Bioinformatics, “Biomesh: A digital resource collection on the biology-engineering interface”. Part-time research assistant \$3,917  
2011-2013 **Taiwan Ministry of Education**, Studying Abroad Scholarship, “Functional morphology and evolution of the second thoracic vertebra in small mammals”. \$32,000

## AWARDS AND HONORS

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2014 Apr **'OEB in Action' photo contest**, 1st prize for “[Mr. mole](#)”. \$150  
2014 Jun **AAAS/Science Program for Excellence in Science**, nominated by the College of Natural Sciences at UMass  
2014 Jan **New York Times**, press coverage and ScienceTake Video Channel, “[Uncovering the Secrets of Mole Motion](#)”.  
2012 Jun **Sigma-Xi**, Associate Membership  
2009 **Institute of Zoology (NTU)**, THE BEST THESIS AWARD in the College of Life Science at National Taiwan University. \$170  
2008 **Institute of Ecology and Evolutionary Biology (NTU)**, Dr. Da-qui Chei Memorial scholarship for the student who has special efforts on wild field in the College of Life Science at National Taiwan University. \$170  
2007 **National Taiwan University (NTU)**, Excellence TA Price -General Zoology laboratory, Given to TA with excellent performance in teaching. Only 36 quotas per semester. \$170

## PUBLICATIONS

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**Lin, Y.F.**, T.W. Lu, Dumont, E.R., L.L. Lee. Biomechanical function and behavioural implications of a sesamoid bone: leverage for a seductive neck in white-toothed shrews. (Under review)

## CONFERENCE PRESENTATIONS

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**Lin, Y.F.**, A.M. Horner, L. J. Ekstrom, T. J. Roberts, E.R. Dumont. 2014. How moles destroy your lawn: the “lateral stroke” of Eastern moles (*Scalopus aquaticus*). 2014 Society for Integrative and Comparative Biology, Austin, TX

**Lin, Y.F.**, T.W. Lu, Dumont, E.R., L.L. Lee. 2013. Sticking necks out: A novel sesamoid bone in crocidurine shrews. 2013 Society for Integrative and Comparative Biology, San Francisco, CA

**Lin, Y.F.**, Lu, T.W., Lee, L.L. 2011. Extreme neck extension of shrews. Joint Northeast Regional Divisional Meetings of Vertebrate Morphology and Comparative Biomechanics of the Society for Integrative and Comparative Biology, Kingston, RI

## RESEARCH EXPERIENCE

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2013 Jun	<b>Finite Element Analysis (FEA)</b> workshop, UMass, MA Simulated the strain of Eastern mole humerus by applying muscle force on it; software Geomagic Studio®, Mimics® and Strand® were used
2012 Sept	<b>Instron</b> User Group meeting, Norwood, MA
2012 Jun	<b>X-ray Reconstruction of Moving Morphology (XROMM)</b> Short Course, Brown University, RI
2006-2009 (M.S. research)	<b>Biomechanical analysis</b> Constructed 3D model by micro CT and Amira® to model the mechanical advantage of neck muscle in shrew species <b>Behavior experiment</b> Quantified the frequency and duration of head movement in shrew species <b>Comparative anatomy</b> Conducted double-stained method, musculoskeletal dissection and histological techniques to compare the morphological differences of shrews and moles in Taiwan

## TEACHING AND MENTORING EXPERIENCE

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2014	Mentor one high school student (summer college) and two undergrad students. One is awarded <b>Commonwealth Honors College Research Assistant Fellowship</b> . \$750
2014 Spring	Bio 153 lab, General Biology 152
2013	Bio 153 lab (spring); Biodiversity (fall)
2012	Bio 101 lab (spring); Biodiversity (fall)
2005-2009	Service and Learning - Museum of Zoology
2006-2008	Comparative Anatomy of Vertebrate laboratory
2005-2007	General Zoology laboratory
2002-2004	NTU Martial Art Team and Club