

YI-FEN LIN

Organismic and Evolutionary Biology
University of Massachusetts, Amherst
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RESEARCH INTERESTS

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

EDUCATION

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

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

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

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

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 | Finite Element Analysis (FEA) 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 | Instron User Group meeting, Norwood, MA |
| 2012 Jun | X-ray Reconstruction of Moving Morphology (XROMM) Short Course, Brown University, RI |
| 2006-2009
(M.S. research) | Biomechanical analysis
Constructed 3D model by micro CT and Amira® to model the mechanical advantage of neck muscle in shrew species
Behavior experiment
Quantified the frequency and duration of head movement in shrew species
Comparative anatomy
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 Commonwealth Honors College Research Assistant Fellowship . \$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 |