

# Yang Ding

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## Research Interest

Physical principles in biomechanics, locomotion in complex environments, bio-fluid, bio-inspired robotics, neuromechanical control, granular media.

## Current Position

**Beijing Computational Science Research Center**, Beijing, China *Mar 2015 - present*

- Assistant Professor (Principal Investigator)

## Previous Positions

**Beijing Computational Science Research Center**, Beijing, China *May 2014 - Mar 2015*

- Research Assistant Professor (Principal Investigator)

**University of Southern California**, Los Angeles, California, USA *Nov 2012 - May 2014*

- Postdoctoral Fellow in the AME department Advisor: Eva Kanso

**Georgia Institute of Technology**, Atlanta, Georgia, USA *Dec 2011 - Nov 2012*

- Postdoctoral Fellow Advisor: Daniel Goldman

## Education

**Georgia Institute of Technology**, Atlanta, Georgia, USA *Aug 2005 - Dec 2011*

- Ph.D. in Physics Advisor: Daniel I. Goldman,

**University of Science and Technology of China**, Hefei, Anhui, China *Sep 2001 - Jun 2005*

- B.S. in Physics

## Refereed Publications

- Yang Ding, Janna C. Nawroth, Margaret J. McFall-Ngai and Eva Kanso, Mixing and transport by ciliary carpets: a numerical study, *Journal of Fluid Mechanics*, 743, 124-140 (2014).
- Yang Ding, Chen Li, and Daniel I. Goldman, Swimming in the desert, *Physics Today*, 66(11), 68 (2013).
- Yang Ding, Sarah S. Sharpe, Kurt Wiesenfeld, and Daniel I. Goldman, Emergence of the advancing neuromechanical phase in a resistive force dominated medium, *Proceedings of the National Academy of Sciences*, 110(25), 10123 (2013).
- Ross Hatton, Yang Ding, Howie Choset, and Daniel I. Goldman, Geometric visualization of self-propulsion in a complex medium, *Physical Review Letters*, 110, 078101 (2013).
- Fabricio Q. Potiguar and Yang Ding, Lift and drag in intruders moving through hydrostatic granular media at high speeds, *Physical Review E*, 88, 012204 (2013).
- Yang Ding, Sarah S. Sharpe, Andrew Masse, Daniel Goldman, Mechanics of Undulatory Swimming in a Frictional Fluid, *Plos Computational Biology*, 8(12), e1002810 (2012) (Cover).

- Sarah S. Sharpe, Yang Ding, and Daniel I. Goldman, Environmental interaction influences muscle activation strategy during sand-swimming in the sandfish lizard (*Scincus scincus*), *Journal of Experimental Biology*, 216, 260 (2012).
- Yang Ding, Nick Gravish and Daniel I. Goldman, Drag induced lift in granular media, *Physical Review Letters*, 106, 028001 (2011).
- Yang Ding, Nick Gravish, Chen Li, Ryan D. Maladen, Nicole Mazouchova, Sarah S. Sharpe, Paul B. Umbanhowar, and Daniel I. Goldman, Comparative studies reveal principles of movement on and within granular media, *IMA, Workshop on Locomotion*(2011).
- Ryan D. Maladen, Paul B. Umbanhowar, Yang Ding, Andrew Masse and Daniel I. Goldman, Lift control in a sand-swimming robot, *IEEE: International Conference on Robotics and Automation*, (2011).
- Ryan D. Maladen, Yang Ding, Paul B. Umbanhowar, and Daniel I. Goldman, Undulatory swimming in sand: experimental and simulation studies of a robotic sandfish, *International Journal of Robotics Research*, (2011).
- Ryan D. Maladen, Yang Ding, Paul B. Umbanhowar, Adam Kamor, and Daniel I. Goldman, Mechanical models of sandfish locomotion reveal principles of high performance subsurface sand-swimming, *J. R. Soc. Interface*, 8:1332-1345 (2011) (Cover).
- Ryan D. Maladen, Yang Ding, Paul B. Umbanhowar, Adam Kamor and Daniel I. Goldman, Biophysically inspired development of a sand-swimming robot, *Robotics: Science & Systems conference*, (2010).
- Ryan Maladen, Yang Ding, Chen Li and Daniel I. Goldman, Undulatory swimming in sand: subsurface locomotion of the sandfish lizard, *Science*, 325, 314 (2009).

## Awards

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|---------------------------------------------------------|------|
| • the Recruitment Program of Global Young Experts       | 2015 |
| • Amelio Fellowship for Excellence in Graduate Research | 2011 |
| • SAIC-Georgia Tech Student Paper Competition Award     | 2011 |
| • Robotics: Science & Systems Best paper award          | 2010 |

## Services

- Reviewer: Proceedings of the Royal Society Interface, PLOS ONE, International Conference on Automation Science and Engineering, Climbing and Walking Robots (CLAWAR) meeting, Central European Journal of Physics.
- Session chair: American Physical Society (APS) DFD meeting 2012; International Conference on Robotics and Automation (ICRA) 2011.
- Judge: Society for Integrative and Comparative Biology Annual Meeting, 2013; Georgia Tech Graduate Research and Innovation Conference, 2012.
- Committee member: International Program Committee of the CLAWAR conference (2014, 2015).

## Professional Affiliations

- American Physical Society (APS)
- Society for Integrative and Comparative Biology
- Climbing and Walking Robots (CLAWAR) Association