

# Rebecca Zane Wolf

rzwolf@g.harvard.edu | 678.603.3358 | 26 Oxford St, Cambridge, MA 02138

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## EDUCATION

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### **HARVARD UNIVERSITY** | PH.D. STUDENT, DEPARTMENT OF Organismic and Evolutionary Biology

August 2016 - Present | Cambridge, Massachusetts

Research Adviser: Dr. George Lauder

### **GEORGIA INSTITUTE OF TECHNOLOGY** | B.Sc. APPLIED PHYSICS & BIOLOGY

August 2011 - May 2016 | Summa Cum Laude | Atlanta, Georgia

### **UNIVERSITY OF QUEENSLAND** | UNDERGRADUATE EXCHANGE PROGRAM

July - November 2012 | Brisbane, Queensland, Australia

### **GORDON STATE COLLEGE** | DUAL ENROLLMENT PROGRAM, HIGH SCHOOL

August 2009 - May 2011 | Barnesville, Georgia

## RESEARCH EXPERIENCE

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### **BIOMECHANICS: FISH LOCOMOTION**

DR. GEORGE LAUDER

August 2016-Present | Cambridge, MA

Exploring the use of soft robotics in understanding aquatic locomotion.

### **BIOMECHANICS: COCKROACH LOCOMOTION**

DR. DANIEL GOLDMAN AND SETH KIMBRELL

August 2015-Present | Atlanta, GA

Investigated and compared hind-leg extensor muscle activity over horizontal and vertical terrains using smart phones in place of traditional EMG technology.

### **ASTROPHYSICS: ACCRETING NEUTRON STAR SUPERBURSTS SIMULATIONS**

DR. DAVID BALLANTYNE AND DR. LAURENS KEEK

August 2014 - May 2016 | Atlanta, GA

Created and developed Python scripts utilizing Xspec and satellite specifications to model and assessed how three novel satellite will visualize superburst events. Modified fortran code to utilize Suleimanov models and spectra, as well as analyzed the resultant data.

### **PROTEIN BIOLOGY: EVOLUTIONARY MRFP DEVELOPMENT**

DR. ERIC GAUCHER AND RYAN RANDALL

April 2015-August 2015 | Atlanta, GA

Developed a protocol for qualitatively assessing the phenotypes of protein strains and analyzed results in combination with quantitative assessments.

### **ASTROPHYSICS: CHERENKOV TELESCOPE ARRAY ELECTRONICS**

DR. NEPOMUK OTTE AND STERLING PEET

January 2015 - May 2015 | Atlanta, GA

Programmed a prototype motherboard and electronics (T7 TARGET chip developed by Stanford collaborators) and analyzed potential signal noise contributions from cables and Peltier plates.

### **BEHAVIORAL BIOLOGY: GT COPEPOD LAB**

DR. JEANNETTE YEN AND LARISA PENDER-HEALY

June 2013 - June 2014 | Atlanta, GA & Palmer Station, Antarctica

Contributed to and organized the lab by maintaining healthy copepod and phytoplankton cultures and analyzed experimental results. Assisted Dr. Yen on her expedition to study pteropod locomotion and behavior using tomographic PIV at Palmer Station.

## PUBLICATIONS

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- L. Keek, **Z. Wolf**, and D.R. Ballantyne. Accretion disk signatures in Type I X-ray Bursts: prospects for future missions. *The Astrophysical Journal*, 826(1):79-92. 2016.
- L. Keek, A. Cumming, **Z. Wolf**, D. Ballantyne, *et al.* The imprint of carbon combustion on a superburst from the accreting neutron star 4U 1636-536. *MNRAS*, 454:3559-3566. 2016.

## PRESENTATIONS

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- 2017 **Society of Integrative and Comparative Biology** | Jan 4 - 8 | New Orleans, LA.  
"Integration of soft robotic actuators to investigate body-caudal-fin swimming in fishes."

## POSTERS

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- 2015 **College of Sciences Senior Research Symposium**, mRFP Phylogeny Research Poster  
2015 **EXPLORE Poster Symposium**, Neutron Star Superbursts Research Poster

## HONORS & AWARDS

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- 2016 **Theodore H. Ashford Graduate Fellowship in the Sciences**, Harvard University  
Merit fellowship awarded to incoming PhD students in the natural sciences
- 2016 **James Miller Pierce Fellowship**, Harvard University  
Merit fellowship awarded to incoming PhD students in the natural sciences, mathematics, and engineering
- 2016 **H. Fukuyo Outstanding Physics Undergraduate Award**, School of Physics, Georgia Tech  
Merit scholarship awarded to a rising senior whose achievements and character reflect honor upon Dr. Fukuyo
- 2016 **Outstanding Undergraduate Research Award**, School of Physics, Georgia Tech  
Merit award given on the basis of involvement in long-term research projects, published research papers, etc.
- 2016 **NSF Graduate Research Fellowship Program (GRFP) Honorable Mention**
- 2014 **Wartell & Brossette Scholastic Scholarship**, School of Biology, Georgia Tech  
Merit Scholarship awarded to a student conducting research at the intersection of Physics and Biology or Math and Biology

## COMMUNITY INVOLVEMENT AND OUTREACH

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### **SCIENCE IN THE NEWS** | WAVE CONTRIBUTOR

Aug 2016 – Present | Cambridge, MA

Writing short articles ("Waves") on current and rising high-profile scientific papers, published on the SITN website.

### **EXCELLENT ADVENTURES** | FOUNDER AND COORDINATOR

Aug 2014 – May 2016 | Atlanta, GA

Organized and hosted a seminar series, with talks given by upperclassmen in the School of Physics to underclassmen, topics ranging from Java and  $\LaTeX$  to Lagrangian Mechanics and Black Holes. With consent, lectures were recorded and uploaded to the GT SPS Youtube Page.

### **CLAYTON COUNTY SCIENCE DAY** | UNDERGRADUATE VOLUNTEER

Dec 2015 | Morrow, GA

Accompanied Dr. JC Gumbart from GT School of Physics to demonstrate the effects of liquid nitrogen at Morrow High School and to present on undergraduate research opportunities.

### **TECH TALKS EVENT COMMITTEE** | LOGISTICS COORDINATOR

Jan - May 2015 | Atlanta, GA

Coordinated a guest speaker for the speech competition event and negotiated corporate sponsors to provide food, drinks, and competition reward money.

## WORK EXPERIENCE

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**GEORGIA TECH** | STUDENT AMBASSADOR

Aug 2015 - May 2016 | Atlanta, GA

**ZOO ATLANTA** | INTERN, BIRD DEPARTMENT

Aug 2013 - Dec 2013 | Atlanta, GA

**STONE SUMMIT** | GYM EMPLOYEE

April 2012 - Aug 2013 | Atlanta, GA

## TEACHING EXPERIENCE

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**PHYSICS GT 1000** | TEAM LEADER

Aug 2015- Dec 2015 | Atlanta, GA

**ACADEMIC TUTOR** | MATHEMATICS

Cardinal Scholars | Aug 2013-April 2014 | Atlanta, GA

Gordon State College | Jan 2010-May 2011 | Barnesville, GA

## MEDIA COVERAGE

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Boltz, P. Outstanding Alumni: Zane Wolf. Cover. Gordon State College President's Report. 2016.