

Katelyn Breivik

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Education

PRESENT **Ph.D. student in Physics and Astronomy**, Northwestern University *Evanston, IL*
2012-2013 **Ph.D. student in Physics**, University of Georgia *Athens, GA*
2012 **B.S. in Physics with Professional Emphasis, Cum Laude**, Utah State University *Logan, UT*

Experience

RESEARCH

Graduate Research Assistant *Evanston, IL*
CIERA, NORTHWESTERN UNIVERSITY *June 2013 - Present*
• Monte Carlo simulations of large, compact binary populations and concomitant gravitational wave detection catalogs

Undergraduate Research Assistant *Logan, UT*
UTAH STATE UNIVERSITY *May 2011 - June 2012*
• Characterized background sky variations for multi-messenger follow up observations of gravitational wave events

Undergraduate Researcher *Logan, UT*
UTAH STATE UNIVERSITY *Aug. 2010 - May 2011*
• Used small remote telescopes to observe the precession of the inner Jovian moons as a probe of general relativity

TEACHING

Guest Lecturer *Evanston, IL*
NORTHWESTERN UNIVERSITY *2016-2017*
• Nov. 11, 2017: Overview of the atomic model for introductory, concept-based physics course (Phys 103)
• May 25, 2017: Introduction to gravitational waves for upper division undergraduate astronomy course (Astron 331)

Graduate Teaching Assistant *Athens, GA*
UNIVERSITY OF GEORGIA *Aug. 2012 - May 2013*
• Lead introductory astronomy labs and student observations
• Lead introductory physics labs for science and engineering majors

Undergraduate Teaching Assistant *Logan, UT*
UTAH STATE UNIVERSITY *Aug. 2011 - Jan. 2012*
• Lead introductory undergraduate physics labs for life science majors

Observatory Teaching Assistant *Logan, UT*
UTAH STATE UNIVERSITY *Fall 2010, Fall 2011*
• Operated 20" telescope for introductory astronomy labs

Undergraduate Teaching Fellow *Logan, UT*
UTAH STATE UNIVERSITY *Jan. 2010 - May 2011*
• Guided students through group problem solving exercises in introductory physics courses for science and engineering majors

Publications

Double white dwarf binaries accreting through direct-impact: Implications for LISA

To be submitted June 2017

KREMER, K., Breivik, K., LARSON, S. L., KALOGERA, V

Measuring Accretion Impact Radii with Optical and Gravitational Wave Observations of Compact Binaries

2017, ApJ, submitted

ADDISON, E., Breivik, K., LARSON, S. L.

Distinguishing between Formation Channels for Binary Black Holes with LISA

2016, ApJ, 830L, 18B

Breivik, K., RODRIGUEZ, C. L., LARSON, S. L., KALOGERA, V., RASIO, F. A.

Presentations

Distinguishing Between Formation Channels for Binary Black Holes with LISA

Grapevine, TX

POSTER SESSION AT 229TH MEETING OF THE AAS

Jan. 2017

Distinguishing Between Formation Channels for Binary Black Holes with LISA

Zurich, SWI

POSTER SESSION AT 11TH INTERNATIONAL LISA SYMPOSIUM

Aug. 2016

Variance in binary stellar population synthesis

Salt Lake City, UT

CONTRIBUTED TALK AT APS APRIL MEETING

April 2016

Exploring galactic binary population variance with population synthesis

Evanston, IL

CONTRIBUTED TALK AT MIDWEST RELATIVITY MEETING

Oct. 2015

Probing the Milky Way electron density using multi-messenger astronomy

Baltimore, MD

CONTRIBUTED TALK AT APS APRIL MEETING

April 2015

Rapid Monte Carlo Simulation of Gravitational Wave Galaxies

Seattle, WA

POSTER SESSION AT 225TH MEETING OF THE AAS

Jan. 2015

Background Sky Variability for Multi-Messenger Follow-up Surveys

Austin, TX

POSTER SESSION AT 219TH MEETING OF THE AAS

Jan. 2012

Honors & Awards

2017	Chambliss Astronomy Achievement Award , Honorable Mention	<i>229th AAS Meeting</i>
2016	Northwestern Physics & Astronomy Rapid Fire Research , 2nd Place	<i>Evanston, IL</i>
2014	Illinois Space Grant Consortium Graduate Fellowship , Northwestern University	<i>Evanston, IL</i>
2010	Undergraduate Teaching Fellowship , Utah State University	<i>Logan, UT</i>
2010	Undergraduate Research and Creative Opportunities (URCO) Grant , Utah State University	<i>Logan, UT</i>
2008	Presidential Fellowship - 4 years , Utah State University	<i>Logan, UT</i>

Science Education and Public Outreach

CIERA Astronomer Evenings

Dearborn Observatory

PRIMARY ORGANIZER

Jan. 2016 - PRESENT

Astronomy on Tap

Chicagoland area, IL

ORGANIZER AND PRESENTER

March 2016 - PRESENT

Physics & Astronomy Graduate Student Council

Evanston, IL

ASTRONOMY OUTREACH COMMITTEE HEAD

Dec 2015 - PRESENT

Astronomy Conversations

Adler Planetarium

PRESENTER

March 2016 - PRESENT

- Conversations with planetarium visitors about anything astronomy, from light pollution in the city to my research on gravitational waves

Ravinia Astronomy Night

Ravinia Park, IL

PRESENTER

July 2016

- Presented a hands-on space-time gravity table demonstration at a performance of Holst's "The Planets" at the Ravinia outdoor concert venue

Science Olympiad

Wilmette Jr High School

COURSE CO-LEADER

Dec. 2015 - Feb. 2016

- Co-lead Science Olympiad course in Experimental Design for 6 5th-8th grade students at Wilmette Jr High School
- Two students participated in a local competition and placed 2nd in their division

Einstein Evenings

Dearborn Observatory

PRESENTER

Feb., March, Aug., Nov. 2015

- Presented a public lecture followed by Q&A at Dearborn Observatory to celebrate the centennial of general relativity

Adler Summer of Science Kickoff

Adler Planetarium

PRESENTER

June 2015

- Facilitated FUSE studio activities for visitors to the planetarium as part of their 'Summer of Science'

'HackLabs' Hack-a-Thon with the Shedd+Adler

Shedd Aquarium

MENTOR

Feb. 2015

- Mentored a team of 4 middle school students in a hack-a-thon to create a tutorial for the Zooniverse project Snapshot Serengeti

Girls Do Hack

Adler Planetarium

WORKSHOP CO-LEADER

Nov. 2014

- Ran a workshop designed for young women explore skills that are employed in different areas of scientific research through hands-on FUSE studio activities

Graduate Student Panel for Physical Sciences

Northwestern University

PANEL MEMBER

Sept. 2014

- Participated in a student-run panel for the Northwestern Graduate School Orientation for incoming graduate students

Planetary Nebulae: The mysterious death shrouds of stars

Cache Valley Astronomers Meeting

PUBLIC LECTURE

May 2012

- Met with the Cache Valley amateur astronomy club to talk with 20 members about planetary nebulae

Science Unwrapped

Utah State University

UNDERGRADUATE VOLUNTEER

Oct. 2011

- Ran booth with hands-on demonstrations of gravitational wave physics including a space-time gravity table demo and a compact binary inspiral demo

Engagement

Graduate Student Multicultural Dialog Group

Evanston, IL

FACILITATOR

Jan. 2017 - PRESENT

- Organize activities and discussion topics for weekly meetings of graduate students with over 15 different nationalities

Exploring Racial Experiences in College STEM and Developing Racial Competence

Evanston, IL

WORKSHOP ATTENDEE

Oct. 2016

- Focused on how racism manifests itself the college environment
- Brainstormed ways to mitigate problems that underrepresented minorities in STEM face in the classroom

Prospect High School Women in STEM Panel

Prospect, IL

COORDINATOR AND PANEL MEMBER

Nov. 2015, Dec. 2016

- Talked with 30 young women about opportunities for careers in academia and science
- Suggested ways to overcome difficulties that face women in STEM environments