

Katelyn Breivik

Center for Interdisciplinary Exploration and Research in Astrophysics, 2145 Sheridan Rd, Evanston, IL, 60208-3112

✉ katelynbreivik2013@u.northwestern.edu, katie.breivik@gmail.com 🏠 katiebreivik.github.io

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*

Publications

Combining Gaia and LISA Observations to Probe White Dwarf Binary Evolution *To Be Submitted Sep. 2017*
Breivik, K., KREMER, K., BUENO, M., LARSON, S. L., KALOGERA, V

Impact of Binary Evolution on the Black Hole Population Observable by Gaia *To Be Submitted Sep. 2017*
Breivik, K., CHATTERJEE, S., LARSON, S. L.

Accreting Double White Dwarf Binaries: Implications for LISA *2017, ApJ, Accepted*
KREMER, K., Breivik, K., LARSON, S. L., KALOGERA, V

Measuring Accretion Impact Radii with Optical and Gravitational Wave Observations of Compact Binaries *2017, ApJ, In Review*
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.

Honors & Awards

2017 **NSF GK-12 'Reach for the Stars' Fellow**, K-12 Teaching Fellowship
2017 **Chambliss Astronomy Achievement Award**, Honorable Mention, 229th AAS Meeting
2016 **Northwestern Physics & Astronomy Rapid Fire Research**, 2nd Place
2014 **Illinois Space Grant Consortium Graduate Fellowship**, Award Amount: \$10,000
2010 **Undergraduate Teaching Fellowship**, Utah State University
2010 **Undergraduate Research and Creative Opportunities (URCO) Grant**, Award Amount: \$2,000
2008 **Presidential Fellowship - 4 years**, Utah State University

Invited Talks

Exploring stellar-mass compact binary astrophysics with LISA *Milwaukee, WI*
SEMINAR AT THE CENTER FOR GRAVITATION, COSMOLOGY, & ASTROPHYSICS AT UW MILWAUKEE *June 2017*

Contributed Presentations

Observing Mass-Transfer in Double White Dwarfs with LISA and Gaia *Pasadena, CA*
TALK AT 12TH EDOARDO AMALDI CONFERENCE ON GRAVITATIONAL WAVES *July 2017*

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, SUI*
POSTER SESSION AT 11TH INTERNATIONAL LISA SYMPOSIUM *Aug. 2016*

Variance in binary stellar population synthesis *Salt Lake City, UT*
TALK AT APS APRIL MEETING *April 2016*

Exploring galactic binary population variance with population synthesis

TALK AT MIDWEST RELATIVITY MEETING

Evanston, IL

Oct. 2015

Probing the Milky Way electron density using multi-messenger astronomy

TALK AT APS APRIL MEETING

Baltimore, MD

April 2015

Rapid Monte Carlo Simulation of Gravitational Wave Galaxies

POSTER SESSION AT 225TH MEETING OF THE AAS

Seattle, WA

Jan. 2015

Background Sky Variability for Multi-Messenger Follow-up Surveys

POSTER SESSION AT 219TH MEETING OF THE AAS

Austin, TX

Jan. 2012

Service and Engagement

CIERA Astronomer Evenings

FOUNDER AND LEAD ORGANIZER

Dearborn Observatory

Jan. 2016 - PRESENT

Astronomy on Tap - Chicago

FOUNDING MEMBER AND PRESENTER

Chicagoland area, IL

March 2016 - PRESENT

Physics & Astronomy Graduate Student Council

ASTRONOMY OUTREACH COMMITTEE HEAD

Evanston, IL

Dec 2015 - PRESENT

Astronomy Conversations

MONTHLY VISIT TO ADLER'S SPACE VISUALIZATION LAB FOR CONVERSATIONS WITH PLANETARIUM VISITORS

Adler Planetarium

March 2016 - PRESENT

Northwestern Center for Talent Development

COURSE DEVELOPER/LEADER FOR EXPLORATION OF ASTRONOMY USING CITIZEN SCIENCE FOR 5/6TH GRADERS

Evanston, IL

June 2017

General Science Outreach and Education

PARTICIPANT

2010-Present

- I've interacted with over 1500 members of the public through several events across the Greater Chicagoland and Salt Lake City areas and am happy provide more details on request

Experience

RESEARCH

Graduate Research Assistant

CIERA, NORTHWESTERN UNIVERSITY

Evanston, IL

June 2013 - Present

- Monte Carlo simulations of large, compact binary populations
- Effects of binary evolution on gravitational-wave observable populations

Undergraduate Research Assistant

UTAH STATE UNIVERSITY

Logan, UT

May 2011 - June 2012

- Characterizing background sky variations for multi-messenger follow up observations of gravitational wave events

Undergraduate Researcher

UTAH STATE UNIVERSITY

Logan, UT

Aug. 2010 - May 2011

- Used small remote telescopes to observe the precession of the inner Jovian moons as a probe of general relativity
- Funded by Undergraduate Research Creative Opportunities Award

TEACHING

Guest Lectures

Evanston, IL

2016-2017

NORTHWESTERN UNIVERSITY

- 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: General Physics and Astronomy Labs

Athens, GA

Aug. 2012 - May 2013

UNIVERSITY OF GEORGIA

Undergraduate Teaching Assistant: General Physics Labs

Logan, UT

Aug. 2011 - Jan. 2012

UTAH STATE UNIVERSITY

Observatory Teaching Assistant: General Astronomy Observation Labs

Logan, UT

Fall 2010, Fall 2011

UTAH STATE UNIVERSITY