

Michael J. Zevin || Curriculum Vitae

Northwestern University/CIERA, — 1800 Sherman Ave, Room 08029 — Evanston, IL 60201

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Ph.D. candidate in physics and astronomy at Northwestern University, studying gravitational-wave astrophysics, compact objects, stellar evolution, and star cluster dynamics. Numerous leadership roles and varied contributions in citizen science, science communication, and outreach.

Education

Academic Qualifications

Northwestern University **Ph.D.**, Matriculating Spring 2020
Evanston, IL **M.Sc.**, Fall 2016

Program: Physics and Astronomy
Certificates: Integrated Data Science
Thesis: Unveiling the Lives and Deaths of Stars through Compact Object Mergers
Advisor: Vicky Kalogera

University of Illinois **B.S.**, Spring 2012

Champaign, IL
Majors: Astronomy, Physics
Minor: Music Performance

Fellowships

- ▷ NSF IDEAS Fellowship 2016–Present
- ▷ Illinois Space Grant Consortium Fellowship 2017–Present
- ▷ NSF GK12 Fellowship 2017–2018
- ▷ Oxford Centre for Cosmological Studies Balzan Fellowship¹ 2018
- ▷ Kavli Summer Fellowship² 2017

Publications

First Author & Chaired Papers (with links)

Forward Modeling of Double Neutron Stars: Insights from Highly-Offset Short Gamma-ray Bursts 2019
[M. Zevin](#), L. Kelley, A. Nugent, W. Fong, C. Berry, V. Kalogera
The Astrophysical Journal Letters (submitted)
arXiv: 1910.03598

Can Neutron-Star Mergers Explain the r-process Enrichment in Globular Clusters? ApJ
2019
[M. Zevin](#), K. Kremer, D. M. Siegel, S. Coughlin, B. T.-H. Tsang, C. P. L. Berry, V. Kalogera
The Astrophysical Journal (in press)
arXiv: 1906.11299

Eccentric Black Hole Mergers in Dense Star Clusters: The Role of Binary-Binary Encounters ApJ
2019
[M. Zevin](#), J. Samsing, C. L. Rodriguez, C. J. Haster, E. Ramirez-Ruiz
The Astrophysical Journal **871**, 91
– Article in AAS Nova

¹Research Advisor: Dr. Chris Lintott (New College, University of Oxford)

²Research Advisor: Dr. Enrico Ramirez-Ruiz (University of California Santa Cruz)

- On the Progenitor of Binary Neutron Star Merger GW170817** ApJL
2017
The LIGO Scientific Collaboration and Virgo Collaboration³
The Astrophysical Journal Letters **850**, L40
- Constraining Formation Models of Binary Black Holes with Gravitational-Wave Observations** ApJ
2017
[M. Zevin](#), C. Pankow, C. R. Rodriguez, L. Sampson, E. Chase, V. Kalogera, F. A. Rasio
The Astrophysical Journal Letters **846**, 82
- Gravity Spy: Integrating Advanced LIGO Detector Characterization, Machine Learning, and Citizen Science** CQG
2017
[M. Zevin](#), S. Coughlin, S. Bahaadini, E. Besler, N. Rohani, S. Allen, M. Cabero, K. Crowston, A. K. Katsaggelos, S. L. Larson, T. K. Lee, C. Lintott, T. B. Littenberg, A. Lundgren, C. Østerlund, J. R. Smith, L. Trouille, V. Kalogera
Classical and Quantum Gravity **34**, 064003
– Covered by AAS Press

Second & Third Author Papers (with links)

- COSMIC: Open-Source Binary Population Synthesis**
K. Breivik, S. Coughlin, [M. Zevin](#), C. Rodriguez, C. Kimball, J. Andrews, M. Kurkowski, S. Larson, V. Kalogera 2019
Monthly Notices of the Royal Astronomical Society (submitted)
- Black Holes: The Next Generation** PRD
2019
C. Rodriguez, [M. Zevin](#), P. Amaro-Seoane, S. Chatterjee, K. Kremer, F. A. Rasio, C. S. Ye
Physical Review D **100**, 043027
- Illuminating Black Hole Binary Formation Channels with Spins in Advanced LIGO** ApJL
2016
C. Rodriguez, [M. Zevin](#), C. Pankow, V. Kalogera, F. A. Rasio
The Astrophysical Journal Letters **832**, L2

Contributed Papers (with links)

- The Missing Link in Gravitational-Wave Astronomy: Discoveries waiting in the decihertz range** ESA WP
2019
M. Arca Sedda, C. Berry, K. Jani, P. Amaro-Seoane, P. Auclair, J. Baird, T. Baker, E. Berti, K. Breivik, C. Caprini, X. Chen, D. Doneva, J. Ezquiaga, S. Ford, M. Katz, S. Kolkowitz, B. McKernan, G. Mueller, G. Nardini, I. Pikovski, S. Rajendran, A. Sesana, L. Shao, N. Tamanini, N. Warburton, H. Witek, K. Wong, [M. Zevin](#)
ESA's Voyage 2050 White Paper
- Knowledge Tracing to Model Learning in Online Citizen Science Projects** IEEE TLT
2019
K. Crowston, C. Østerlund, T. Lee, C. Jackson, M. Harandi, S. Allen, S. Bahaadini, S. Coughlin, A. Katsaggelos, S. Larson, N. Rohani, J. Smith, L. Trouille, [M. Zevin](#)
IEEE Transactions on Learning Technologies (accepted)
- Classifying the Unknown: Discovering Novel Gravitational-Wave Detector Glitches using Similarity Learning** PRD
2019
S. Coughlin, S. Bahaadini, N. Rohani, [M. Zevin](#), O. Patane, M. Harandi, C. Jackson, V. Noroozi, S. Allen, J. Areeda, M. Coughlin, P. Ruiz, C. P. L. Berry, K. Crowston, A. K. Katsaggelos, A. Lundgren, C. Østerlund, J. R. Smith, L. Trouille, V. Kalogera
Physical Review D **99**, 082002
- Post-Newtonian Dynamics in Dense Star Clusters: Binary Black Holes in the LISA Band** PRD
2019
K. Kremer, C. L. Rodriguez, P. Amaro-Seoane, K. Breivik, S. Chatterjee, M. L. Katz, S. Larson, F. A. Rasio, J. Samsing, C. S. Ye, [M. Zevin](#)
Physical Review D **99**, 063003
- Post-Newtonian Dynamics in Dense Star Clusters: Formation, Masses, and Merger Rates of Highly-Eccentric Black Hole Binaries** PRD
2018
C. L. Rodriguez, P. Amaro-Seoane, S. Chatterjee, K. Kremer, F. A. Rasio, J. Samsing, C. S. Ye, [M. Zevin](#)
Physical Review D **98**, 123005

³[M. Zevin](#): Chair of paper-writing team and analysis lead

DIRECT: Deep Discriminative Embedding for Clustering of LIGO Data S. Bahaadini, V. Noroozi, N. Rohani, S. Coughlin, M. Zevin , V. Kalogera, A. K. Katsaggelos 25th IEEE International Conference on Image Processing Proceedings	ICIP 2018
Machine Learning for Gravity Spy: Glitch Classification and Dataset S. Bahaadini, V. Noroozi, N. Rohani, S. Coughlin, M. Zevin , J. R. Smith, V. Kalogera, A. K. Katsaggelos Information Sciences Journal 444 , 172	ISJ 2018
Improvements in Gravitational-wave Sky Localization with Expanded Networks of Interferometers C. Pankow, E. A. Chase, S. Coughlin, M. Zevin , V. Kalogera The Astrophysical Journal Letters 854 , L25	ApJL 2018
Deep Multi-view Models for Glitch Classification S. Bahaadini, N. Rohani, S. Coughlin, M. Zevin , V. Kalogera, A. K. Katsaggelos IEEE International Conference on Acoustics, Speech, and Signal Processing Proceedings	ICASSP 2018
Incorporating Current Research into Formal Higher Education Settings using Astrobites N. E. Sanders, S. Kohler, C. Faesi, A. Villar, M. Zevin American Journal of Physics 85 , 741	AJP 2017
Astrophysical Prior Information and Gravitational-Wave Parameter Estimation C. Pankow, L. Sampson, L. Perri, E. A. Chase, S. Coughlin, M. Zevin , V. Kalogera The Astrophysical Journal 834 , 154	APJ 2017

Collaboration Papers (as part of the LIGO Scientific Collaboration, 2015–Present)

- Search for intermediate mass black hole binaries in the first and second observing runs of the Advanced LIGO and Virgo network⁴
- A guide to LIGO-Virgo detector noise and extraction of transient gravitational-wave signals
- A gravitational-wave measurement of the Hubble constant following the second observing run of Advanced LIGO and Virgo
- An Optically Targeted Search for Gravitational Waves emitted by Core-Collapse Supernovae during the First and Second Observing Runs of Advanced LIGO and Advanced Virgo
- Model comparison from LIGO-Virgo data on GW170817's binary components and consequences for the merger remnant
- Search for Eccentric Binary Black Hole Mergers with Advanced LIGO and Advanced Virgo during their First and Second Observing Runs
- Tests of General Relativity with GW170817
- All-sky search for short gravitational-wave bursts in the second Advanced LIGO and Advanced Virgo run
- All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO O2 data
- Searches for Gravitational Waves from Known Pulsars at Two Harmonics in 2015–2017 LIGO Data
- Search for gravitational waves from Scorpius X-1 in the second Advanced LIGO observing run with an improved hidden Markov model
- All-sky search for long-duration gravitational-wave transients in the second Advanced LIGO observing run
- First Measurement of the Hubble Constant from a Dark Standard Siren using the Dark Energy Survey Galaxies and the LIGO/Virgo BinaryBlack-hole Merger GW170814
- Search for sub-solar mass ultracompact binaries in Advanced LIGO's second observing run
- Low-latency Gravitational-wave Alerts for Multimessenger Astronomy during the Second Advanced LIGO and Virgo Observing Run
- Search for Gravitational Waves from a Long-lived Remnant of the Binary Neutron Star Merger GW170817
- Searches for Continuous Gravitational Waves from 15 Supernova Remnants and Fomalhaut b with Advanced LIGO
- Search for Transient Gravitational-wave Signals Associated with Magnetar Bursts during Advanced LIGOs Second Observing Run
- All-sky search for long-duration gravitational-wave transients in the second Advanced LIGO observing run
- Directional limits on persistent gravitational waves using data from Advanced LIGO's first two observing runs
- Tests of General Relativity with the Binary Black Hole Signals from the LIGO-Virgo Catalog GWTC-1
- A search for the isotropic stochastic background using data from Advanced LIGO's second observing run

⁴[M. Zevin](#): Parameter estimation lead for highest-significance IMBH trigger

- Constraining the *p*-Mode-*g*-Mode Tidal Instability with GW170817
- Narrow-band search for gravitational waves from known pulsars using the second LIGO observing run
- Properties of the Binary Neutron Star Merger GW170817
- A Fermi Gamma-Ray Burst Monitor Search for Electromagnetic Signals Coincident with Gravitational-wave Candidates in Advanced LIGO’s First Observing Run
- Search for Multimessenger Sources of Gravitational Waves and High-energy Neutrinos with Advanced LIGO during Its First Observing Run, ANTARES, and IceCube
- Search for Substellar-Mass Ultracompact Binaries in Advanced LIGO’s First Observing Run
- Binary Black Hole Population Properties Inferred from the First and Second Observing Runs of Advanced LIGO and Advanced Virgo⁵
- GWTC-1: A Gravitational-Wave Transient Catalog of Compact Binary Mergers Observed by LIGO and Virgo during the First and Second Observing Runs
- GW170817: Measurements of Neutron Star Radii and Equation of State
- Search for Tensor, Vector, and Scalar Polarizations in the Stochastic Gravitational-Wave Background
- Full band all-sky search for periodic gravitational waves in the O1 LIGO data
- Constraints on cosmic strings using data from the first Advanced LIGO observing run
- Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA
- GW170817: Implications for the Stochastic Gravitational-Wave Background from Compact Binary Coalescences
- Effects of data quality vetoes on a search for compact binary coalescences in Advanced LIGO’s first observing run
- All-sky search for long-duration gravitational wave transients in the first Advanced LIGO observing run
- First Search for Nontensorial Gravitational Waves from Known Pulsars
- First narrow-band search for continuous gravitational waves from known pulsars in advanced detector data
- First low-frequency Einstein@Home all-sky search for continuous gravitational waves in Advanced LIGO data
- GW170608: Observation of a 19 Solar-mass Binary Black Hole Coalescence
- Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817
- Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated with GW170817
- Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory
- On the Progenitor of Binary Neutron Star Merger GW170817
- A gravitational-wave standard siren measurement of the Hubble constant
- Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A
- Multi-messenger Observations of a Binary Neutron Star Merger
- GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral⁶
- GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence
- All-sky search for periodic gravitational waves in the O1 LIGO data
- Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-based Cross-correlation Search in Advanced LIGO Data
- Search for high-energy neutrinos from gravitational wave event GW151226 and candidate LVT151012 with ANTARES and IceCube
- Search for intermediate mass black hole binaries in the first observing run of Advanced LIGO
- GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2
- Search for gravitational waves from Scorpius X-1 in the first Advanced LIGO observing run with a hidden Markov model
- Search for Gravitational Waves Associated with Gamma-Ray Bursts during the First Advanced LIGO Observing Run and Implications for the Origin of GRB 150906B
- Effects of waveform model systematics on the interpretation of GW150914
- Search for continuous gravitational waves from neutron stars in globular cluster NGC 6544
- First Search for Gravitational Waves from Known Pulsars with Advanced LIGO
- Directional Limits on Persistent Gravitational Waves from Advanced LIGO’s First Observing Run
- Upper Limits on the Stochastic Gravitational-Wave Background from Advanced LIGO’s First Observing Run
- Calibration of the Advanced LIGO detectors for the discovery of the binary black-hole merger GW150914
- All-sky search for short gravitational-wave bursts in the first Advanced LIGO run
- Exploring the sensitivity of next generation gravitational wave detectors
- The basic physics of the binary black hole merger GW150914

⁵M. Zevin: Education and Public Outreach Liaison

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- Supplement: *The Rate of Binary Black Hole Mergers Inferred from Advanced LIGO Observations Surrounding GW150914* (2016, ApJL, 833, L1)
- *The Rate of Binary Black Hole Mergers Inferred from Advanced LIGO Observations Surrounding GW150914*
- *Upper Limits on the Rates of Binary Neutron Star and Neutron Star-Black Hole Mergers from Advanced LIGOs First Observing Run*
- *Results of the deepest all-sky survey for continuous gravitational waves on LIGO S6 data running on the Einstein@Home volunteer distributed computing project*
- *First targeted search for gravitational-wave bursts from core-collapse supernovae in data of first-generation laser interferometer detectors*
- *Binary Black Hole Mergers in the First Advanced LIGO Observing Run*
- *Improved Analysis of GW150914 Using a Fully Spin-Precessing Waveform Model*
- *Directly comparing GW150914 with numerical solutions of Einstein's equations for binary black hole coalescence*
- *Comprehensive all-sky search for periodic gravitational waves in the sixth science run LIGO data*
- *Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914*
- Supplement: *Localization and Broadband Follow-up of the Gravitational-wave Transient GW150914* (2016, ApJL, 826, L13)
- *Localization and Broadband Follow-up of the Gravitational-wave Transient GW150914*
- *GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence*
- *Properties of the Binary Black Hole Merger GW150914*
- *Tests of General Relativity with GW150914*
- *High-energy neutrino follow-up search of gravitational wave event GW150914 with ANTARES and IceCube*
- *Search for transient gravitational waves in coincidence with short-duration radio transients during 2007-2013*
- *Observing gravitational-wave transient GW150914 with minimal assumptions*
- *GW150914: First results from the search for binary black hole coalescence with Advanced LIGO*
- *GW150914: The Advanced LIGO Detectors in the Era of First Discoveries*
- *GW150914: Implications for the Stochastic Gravitational-Wave Background from Binary Black Holes*
- *All-sky search for long-duration gravitational wave transients with initial LIGO*
- *Astrophysical Implications of the Binary Black-hole Merger GW150914*
- *Observation of Gravitational Waves from a Binary Black Hole Merger*
- *Prospects for Observing and Localizing Gravitational-Wave Transients with Advanced LIGO and Advanced Virgo*

Presentations

Invited Talks

Colombia Astronomy Seminar	Seminar
<i>Getting the boot: Lonely GRBs, enigmatic r-process, and the birth of neutron stars</i>	October 2019
New York, NY	
MIT GRITTS Seminar	Seminar
<i>Unveiling the Lives and Deaths of Stars through Compact Object Mergers</i>	October 2019
Cambridge, MA	
CfA High Energy Astrophysics Seminar	Seminar
<i>Deciphering the Landscape of Binary Black Hole Formation Channels</i>	October 2019
Cambridge, MA	
CGCA Seminar	Seminar
<i>Unveiling the Lives and Deaths of Stars through Compact Object Mergers</i>	March 2019
Milwaukee, WI	
IGC Seminar	Seminar
<i>From the Detected to the Detectors: Using Gravitational Waves to Enable Insights from the Stellar Graveyard & the Next Generation of Citizen Science</i>	March 2018
Portsmouth, UK	

SPI-MAX Seminar <i>From the Detected to the Detectors: Using Gravitational Waves to Enable Insights from the Stellar Graveyard & the Next Generation of Citizen Science</i> Oxford, UK	Seminar February 2018
Contributed Talks & Posters.....	
Aspen Winter Conference <i>Eccentric Black Hole Mergers in Dense Star Clusters: Post-Newtonian Effects & Higher Multiplicity Encounters</i> Aspen, CO	Talk February 2019
AAS 233 <i>Eccentric Black Hole Mergers in Dense Star Clusters: The Role of Binary-Binary Encounters</i> Seattle, WA	Talk January 2019
NSF Research Traineeship Annual Meeting <i>Gravity Spy: Integrating Gravitational-Wave Astrophysics, Machine Learning, and Citizen Sciences</i> Washington, DC	Poster September 2018
MODEST-18 <i>The Role of Binary-Binary Interactions in Inducing Eccentric Black Hole Mergers</i> Santorini, Greece	Talk June 2018
APS April Meeting <i>On the Progenitor of Binary Neutron Star Merger GW170817</i> Columbus, OH	Talk April 2018
Detecting the Unexpected: Discovery in the Era of Astronomically Big Data <i>The Future of Citizen Science: Coupling Crowdsourcing and Machine Learning</i> Baltimore, MD	Talk March 2017
APS April Meeting <i>Discriminating Formation Channels of Binary Black Hole Systems with Advanced LIGO</i> Washington, DC	Talk January 2017
AAS 229 <i>Discriminating Formation Channels of Binary Black Hole Systems with Advanced LIGO</i> Grapevine, TX	Talk January 2017
AAS 229 <i>Astrobites: Engaging Undergraduate Science Majors with Current Astrophysical Research</i> Grapevine, TX	Workshop & Poster January 2017
AAS 228 <i>Gravity Spy — Integrating aLIGO detector characterization, machine learning, and citizen science</i> San Diego, CA	Talk June 2016
Northwestern Computational Research Exposition <i>Integrating aLIGO detector characterization, machine learning, and citizen science</i> Evanston, IL – Awarded first prize in poster competition	Poster April 2016
Midwest Relativity Meeting <i>LIGO glitch classification through the combination of machine learning and citizen science</i> Evanston, IL	Talk September 2015

Outreach & Public Engagement

Science Communication

Astrobitess	Blog
Author, Administrator, & Leadership Team	2014–Present
<ul style="list-style-type: none"> – Astronomy blog partnered with the AAS, provides daily summaries of recent astronomy research articles – Initiated the “Beyond” series, which covers topics on career advice, graduate school applications, and diversity, equity, and inclusivity in astronomy 	
ComSciCon	Workshop
Organizer, Attendee	2017–Present
<ul style="list-style-type: none"> – National graduate-student run science communication workshop for graduate students in STEM fields 	
Astronomy on Tap	Public Event
Co-founder, organizer, host, speaker	2015–Present
<ul style="list-style-type: none"> – Co-founded the Chicago branch of Astronomy on Tap, which hosts astronomy talks and space-based trivia at bars and breweries in the Chicago-land area 	
Rapid Fire Research	Departmental Event
Founder, Chair	2016–Present
<ul style="list-style-type: none"> – Annual research presentation event for graduate and undergraduate students in Northwestern Department of Physics and Astronomy 	
Machine Learning Meetups	Public Event
Organizer, Host	2016–2018
<ul style="list-style-type: none"> – Quarterly interdisciplinary colloquia on data science and machine learning topics 	
Chicagoland Science Penpals	Event
Participant	2017
<ul style="list-style-type: none"> – Correspondence with students in Chicago public schools about scientific research and science as a profession, using handwritten letters 	

Public Talks & Lectures

Astronomer Conversations	Lecture Series
Adler Planetarium, Space Visualization Laboratory	2014–Present
<ul style="list-style-type: none"> – Monthly public presentations at the Adler Planetarium for museum guests 	
Astronomer Evenings	Lecture Series
Northwestern University, Dearborn Observatory	2016–Present
<ul style="list-style-type: none"> – Presentations during public observing hours at the Dearborn Observatory 	
Chipping Norton Amateur Astronomy Group	Keynote Lecture
Chipping Norton, UK	February 2018
Take Our Children to Work Day	Lecture
Northwestern University	April 2016, 2018
Haven Midde School	Invited Speaker
Evanston, IL	April 2017, 2018
Chicago Astronomical Society	Keynote Lecture
Adler Planetarium	May 2017
Avery Coonley School	Invited Speaker
Downers Grove, IL	May 2017
Seven Minutes of Science: An Interdisciplinary Symposium	Public Talk
Northwestern University	April 2017
Highcrest Elementary	Invited Speaker
Wilmette, IL	March 2017

Einstein Evenings Northwestern University, Dearborn Observatory – Monthly presentations during observing hours on LIGO discoveries in celebration of the 100th anniversary of General Relativity	Lecture Series 2015–2016
Nettlehorst Elementary Chicago, IL	Invited Speaker February 2016

Publications

Astrobites Authored over 20 blog posts on current research in astrophysics (Link)	Blog 2014–Present
LIGO Science Summary Companion science summary to the LIGO-Virgo O2 Populations paper (Link) Companion science summary to the GW170817 Detection paper (Link)	Article November 2018 October 2017
LIGO Magazine The Gravity Spy Project - Machine Learning and Citizen Science (Link)	Magazine Article March 2017
Helix Magazine The Legacy of Scientific Discovery (Link)	Magazine Article March 2017

Teaching

Northwestern University Introduction to Astronomy, Stellar Astrophysics, Data-Driven Research in Astronomy – Guest lectured, developed assignments, graded, and ran telescope observing sessions	Lecture/TA 2015–Present
GK12 Fellowship Reach for the Stars; Evanston, IL – Co-taught astronomy classes at Evanston Township High School – Developed curriculum, coding-based lessons, and visualizations for high-school students	Teaching 2017–2018
Kids Science Labs Lead Teacher; Chicago, IL – Taught classes of 3-12 year old students in hands-on, experiential science classes – Designed curriculum for science summer camps	Teaching 2013–2015
Adler Planetarium Science Leadership Corps Instructor, Mission Specialist; Chicago, IL – Designed educational programming – Facilitated exhibits, performed experiments, and gave astronomy talks to the public – Led under-represented students in designing experiments for high-altitude balloon launches	Teaching 2012–2014

Students Mentored

Michael Kurkowski Pair Instability Supernova Prescriptions in Binary Population Synthesis; CIERA REU Student	Undergraduate 2019
Jared Machtinger Population properties of binary black holes detected by LIGO; CIERA Summer Student	High School 2019
Danai Avdela Population properties of binary black holes detected by LIGO; CIERA Summer Student	High School 2019
Isaac Rivera Offset distributions of short gamma-ray bursts; CIERA REU Student	Undergraduate 2018
Grace Kern Optimization of Gravity Spy image retirement; CIERA Summer Student	High School 2018

Hannah Stein <i>Optimization of Gravity Spy image retirement; CIERA Summer Student</i>	High School 2018
Yuqi Yun <i>Gaussian Process regression of black hole mass distributions; CIERA REU Student</i>	Undergraduate 2016
Sophie Haight <i>Gaussian Process regression of binary stellar evolution sequences; CIERA Summer Student</i>	High School 2016

Awards & Honors

▷ Avery Coonley School, Graduate Keynote Speaker	June 2018
▷ American Astronomical Society, Media Intern	June 2016
▷ Breakthrough Prize in Fundamental Physics (<i>as part of the LIGO-Virgo Collaboration</i>)	May 2016
▷ National Science Foundation Graduate Research Fellowship (<i>honorable mention</i>)	April 2016
▷ First Place, Poster Competition (<i>Computational Research Day, Northwestern University</i>)	April 2016
▷ High Distinction in Physics (<i>University of Illinois Urbana-Champaign</i>)	May 2012

Affiliations & Leadership Positions

▷ Astrobites: Administrator, Author	2014–Present
▷ ComSciCon National: Organizer	2017–Present
▷ LIGO Scientific Collaboration: Member	2015–Present
▷ American Astronomical Society: Junior Member	2016–Present
▷ American Physical Society: Member	2016–Present
▷ CIERA Compact Objects Coffee: Founder, chair	2018–Present
▷ Chicago Metropolitan Symphony Orchestra: Double Bassist	2014–Present
▷ Physics and Astronomy Graduate Student Council: Quality of Life Chair	2016–2018
▷ Rapid Fire Research: Founder, chair	2016–2018

Service Work

Peer Reviewer for:	2017–Present
– The Astrophysical Journal	
– The Astrophysical Journal Letters	
– Astronomy and Astrophysics	