# Dr. Jessica McIver

Senior Postdoctoral Scholar in Experimental Physics at the California Institute of Technology
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## EDUCATION

University of Massachusetts Amherst

- Ph.D. in Physics - 2015
  *The impact of terrestrial noise on the detectability and reconstruction of gravitational wave signals from core-collapse supernovae*
- M.S. in Physics - 2014

Syracuse University

- B.S. in Physics - College of Arts and Sciences - 2009
- B.S. in Magazine Journalism - S.I. Newhouse School of Public Communications - 2009

## AWARDS

- Physics World 2017 Breakthrough of the Year awarded to the international team of astronomers and astrophysicists that contributed to the first ever multimessenger observation involving gravitational waves
- Princess of Asturias Award for Technical and Scientific Research and $12,000 prize awarded to the LIGO Scientific Collaboration in 2017
- Bruno Rossi Prize awarded by the High Energy Astrophysics Division of the American Astronomical Society in 2017 to the LIGO Scientific Collaboration
- UK Royal Astronomical Society 2017 Group Achievement Award in Astronomy awarded to the LIGO team
- Special Breakthrough Prize in Fundamental Physics and a share of $3,000,000 awarded to contributors to the gravitational wave discovery in 2016
- Physics World 2016 Breakthrough of the Year awarded to the LIGO Scientific Collaboration
- 2016 Gruber Foundation Cosmology Prize awarded to the LIGO team
- Distinguished Science Award awarded by the National Space Club - Huntsville Chapter to the LIGO team in 2016
- American Physical Society Gravitation and General Relativity Travel Award, 2014
- Arthur Quinton award for outstanding teaching assistants, 2010
- Best data analysis poster award for *The Detchar Times* at the March 2010 LIGO-Virgo Collaboration meeting

## RESEARCH EXPERIENCE

**Postdoctoral Scholar in Experimental Physics** - LIGO Laboratory - Caltech - August 2015 to present

- Co-wrote *GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral*, the discovery of gravitational waves from a binary neutron star system by the LIGO and Virgo collaborations. Published October 16, 2017; accumulated 1250 citations as of October 2018.
- Led the *Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914* paper, which details why we are confident the first direct observation of gravitational waves was astrophysical. Downloaded over 8,000 times from Classical and Quantum Gravity, 118 citations.

- Editor of the Dawn IV report; a summary of recommendations from 100 experts for the future of third generation terrestrial gravitational wave detectors. The Dawn IV aims to help guide the international community, including funding agencies, toward a global network of instruments which could observe all stellar black hole mergers in the observable Universe.
- Enabled the discovery of five binary black hole systems with the Advanced LIGO interferometers and the first multi-messenger observation of a neutron star merger through key interferometer noise studies.
- Co-leader of the LIGO detector characterization group, one of five major data analysis working groups within the LIGO Scientific Collaboration, since March 2017.
    - Detector characterization enables the robust identification of gravitational wave signals and accurate inference of their physical parameters by evaluating and mitigating sources of noise harmful to the astrophysical analyses.
    - Responsible for vetting gravitational wave signal candidates and helping to produce high-quality interferometer data.
- Led efforts to study the effect of known transient noise sources in the LIGO interferometers on the parameter estimation of compact binary coalescence (CBC) gravitational wave sources. I am also investigating the use of deep learning to characterize the performance of the LIGO interferometers.
- Co-mentored student projects investigating multi-messenger astrophysics with galactic core-collapse supernovae, novel tests of general relativity, machine learning for signal detection, and machine learning for interferometer characterization.
- Member of the 3G collaboration's Supernovae and Detector Networks working groups. I'm interested in building a strong case for and preparing to analyze data from the next generation of gravitational wave detectors.

Research Assistant - University of Massachusetts Amherst - August 2009 - August 2015

- Led of the instrument subgroup of the LIGO detector characterization group and liaison to instrument scientists and commissioners.
    - Spearheaded characterizing the performance of the Advanced LIGO detector subsystems ahead of the first observing run.
    - Responsible for interfacing between the Detector Characterization group and the LIGO lab and for the first standardization of Advanced LIGO subsystem characterization.
- Investigated the ability of model-agnostic waveform reconstruction techniques to accurately extract gravitational wave signals from core-collapse supernovae and discovered a fundamental limitation to these algorithms in recovering the structure of waveforms with complex structure.
- Served as the seismic isolation subsystem lead to the detector characterization group and liaison to the seismic isolation instrumental scientists from May 2012 to June 2016. Responsible for diagnosing and tuning seismic and suspensions instrumentation to improve astrophysical search performance.

## GRANTS and GRANT WRITING

- Co-investigator of three-year grant proposal to the NSF physics division entitled **The effects of extreme gravity on eccentric binaries observable with LISA**. PI: Smadar Naoz, UCLA. PENDING.
- Co-investigator of three-year grant proposal to the NSF physics division entitled **Discovery science with LIGO**. PI: Alan Weinstein, Caltech. PENDING.

- Co-investigator of $64,000 grant proposal entitled **Pragadh: Indo-US Centre for Pan-Astronomical Deep Learning** submitted to the Indo-US science and Technology Forum. PIs: Ajit Kembhavi, IUCAA (Pune, India) and Ashish Mahabal, Caltech. FUNDED in 2017.
- Awarded $1,000 **University of Massachusetts Amherst Graduate School Dissertation Research Grant** to support research travel to LIGO-Livingston in 2013.
- Successfully acquired $20,000 annual budget in funding for the Graduate Women in STEM organization from **external funding sources**, including the Women for UMass Fund, as well as the College of Natural Sciences, College of Engineering, College of Information and Computer Sciences, College of Social and Behavioral Sciences, and the Graduate School at UMass Amherst.
- Physics Graduate Student Travel Grant, 2012 and 2013.
- Experience with the NSF FastLane system.
- Participated in UMass Office of Professional Development workshops: Introduction to Grant Searching and Introduction to Grant Writing.
- Assisted in writing successful NSF grant proposals for Laura Cadonati's research groups at Georgia Tech and the University of Massachusetts Amherst.

## SELECT PUBLIC TALKS, SEMINARS, and COLLOQUIA

- *Title TBD.* **Computational challenges in Gravitational wave astronomy conference, UCLA**, January 2019 - **INVITED.**
- *Gravitational wave astrophysics: a new era of discovery.* Physics of the Universe seminar at the **University of Oregon**, November 2018 - **INVITED.**
- *Gravitational wave astrophysics: a new era of discovery.* Colloquium **Los Alamos National Laboratory**, October 2018 - **INVITED.**
- *Gravitational wave astrophysics: a new era of discovery.* Astronomy department seminar at **Radboud University, Njimegen, the Netherlands**, October 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Physics department seminar **at Charles University, Prague, Czech Republic**, October 2018 - **INVITED.**
- *Astrophysics with LIGO and gravitational waves.* **Public lecture at Charles University, Prague, Czech Republic**, October 2018 - **INVITED.**
- *Mitigating Noise Artifacts in LIGO data*. **Swinburne-Caltech Data Science Workshop, Caltech**, September 2018 - **INVITED.**
- *Introduction to GWpy.* LIGO-Virgo meeting in **Maastricht, the Netherlands**, September 2018.
- *Progress on action items in the Dawn III report.* **Dawn IV: Global strategies for Gravitational Wave Astronomy, Amsterdam, the Netherlands**, August 2018.
- *Gravitational wave astrophysics with LIGO and Virgo*. Seminar at **UCLA**, August 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Invited lecture at the **46th SLAC summer institute**, August 2018 - **INVITED**.
- *The LIGO detectors and the frontier of gravitational wave astronomy.* Physics seminar at the **University of Washington Bothell**, July 2018 - **INVITED.**

- *Gravitational waves and black holes.* **Open Questions in Theoretical Astrophysics Conference, DARK Cosmology Center, Neils Bohr Institute**, Copenhagen, Denmark, July 2018 - **INVITED.**
- *Making history: the science behind the LIGO-Virgo discoveries.* Physics department seminar **Cal Poly Pomona**, May 2018 **- INVITED.**
- *LIGO strain data and data quality.* Lecture at the first **LIGO-Virgo Open Data Workshop**, **Caltech**, March 2018 - **INVITED**.
- *Gravitational wave astrophysics: a new era of discovery.* Physics seminar at the **University of California San Diego**, March 2018
- *Gravitational wave astrophysics: a new era of discovery.* Public seminar at **Mount Holyoke College**, March 2018 - **INVITED.**
- *Gravitational wave astrophysics: a new era of discovery.* Astronomy department colloquium at the **University of California Santa Cruz**, February 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Physics department seminar at the **University of Memphis**, February 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Gravitation AstroParticle Physics (GRAPPA) seminar at the **University of Amsterdam**, February 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Physics and astronomy department seminar at the **University of Mississippi**, February 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Physics colloquium at **Michigan State University**, February 2018.
- *Gravitational wave astrophysics: a new era of discovery.* Seminar at the **University of Washington Bothell**, January 2018.
- *Einstein, black holes, and gravitational waves* - The **2017 Mandel Lecture at the Rio Theatre** in Santa Cruz sponsored by the UC Santa Cruz department of astronomy, June 2017 - **INVITED.**
- *LIGO and the beginning of gravitational wave astronomy* - public colloquium at **Brookhaven National Lab**, September 18 2016 - **INVITED.**
- *Gravitational waves and a new era of astrophysics* - The **Doc Morris John D. Schopp Memorial Lecture** Public Lecture at San Diego State University, April 2017 - **INVITED.**
- *Preparing to analyze Advanced LIGO data: from detectors to first observations* - **American Physical Society** meeting, April 2014 - **INVITED.**
- *Gravitational wave observations* - **Fifty-One Erg international supernova workshop**, June 2017 - **INVITED review talk.**
- *GW170817: gravitational waves from the merger of two neutron stars* - **Caltech/JPL Association for Gravitational-Wave Research (CaJAGWR) seminar**, October 2017 - **INVITED.**
- *Gravitational wave search background outliers* - **Time Series Analysis for Synoptic Surveys and Gravitational Wave Astronomy meeting in Bangalore, India**, March 2017 - **INVITED.**
- *The LIGO detectors* - Astrophysics in the Era of Gravitational Wave and Multi-messenger Observations **Joint Space-Science Institute (JSI) workshop**, November 2016 - **INVITED.**
- *The Advanced LIGO Detectors and a New Era of Astronomy* - **SACNAS National Conference**, October 2016 - **INVITED.**

- *Gravitational wave astronomy with Advanced LIGO: beyond the first observing run* - public colloquium at **Embry-Riddle Aeronautical University**, October 28, 2016 - **INVITED.**
- *LIGO and the future of gravitational wave astronomy* - public colloquium at the **Rochester Institute of Technology**, September 22, 2016 - **INVITED.**
- *Introduction to gravitational wave interferometers* and *Advanced LIGO challenges* - Astrophysics at Mayacamas, March 2016 - **INVITED.**
- *Gravitational Wave Burst Analysis* - Lectures at the **Caltech Gravitational Wave Astrophysics School**, July 2015 - **INVITED.**
- *The road to Advanced LIGO's first observations* - The **Numerical and Analytical Relativity and Data Analysis (NARDA) meeting**, August 2014 - **INVITED.**
- *Characterizing the Advanced LIGO interferometers for transient gravitational waves* - seminar at the **University of Florida**, November 2014 - **INVITED.**
- *Advanced LIGO detector characterization ahead of the first observing run* - LIGO-Virgo Collaboration meeting, August 2015 - **PLENARY**.
- *LIGO detector characterization* - LIGO-Virgo Collaboration meeting, August 2014 - **PLENARY**.
- *Data Quality Studies: Methods and Milestones* - Amaldi 9 and NRDA conference, July 2011 - **PLENARY**.
- *Challenges for LIGO data analysis* - **Kavli Summer Program in Astrophysics 2017 in Copenhagen, Denmark**, July 2017.
- *Transient noise in the LIGO detectors* - The **Statistical and Applied Mathematical Sciences Institute** ASTRO program transition workshop, **Research Triangle, North Carolina**, May 2017.
- *Exploring the impact of Advanced LIGO transient noise on the estimation of astrophysical parameters of binary black hole coalescences* - American Physical Society meeting, **Washington D.C.**, April 2017.
- *Detector characterization: Lessons learned from O1 and preparing for O2* - LIGO-Virgo Collaboration meeting, **Glasgow, Scotland**, August 2016.
- *Transient noise in Advanced LIGO's first observing run* - Gravitational Wave Physics and Astronomy Workshop (GWPAW), **Hyannis, Massachusetts**, June 2016.
- *Characterization of the Advanced LIGO detectors during their first observing run* - American Physical Society meeting, **Salt Lake City, Utah**, April 2016.
- *The impact of non-stationary ground motion on transient h(t) noise during O1* - LIGO-Virgo Collaboration meeting, **Caltech**, March 2016.
- *Reconstructing core-collapse supernovae waveforms with advanced era interferometers* - American Physical Society meeting, **Baltimore, Maryland**, April 2015.
- *Characterizing the aLIGO seismic isolation system* - LIGO-Virgo Collaboration meeting, **Budapest, Hungary**, August 2015.
- *Recent seismic isolation detector characterization* - LIGO-Virgo Collaboration meeting, **Stanford University, Palo Alto**, August 2014.
- *An Advanced LIGO seismic isolation and suspensions tutorial for data analysts tutorial* - **Syracuse University**, February 2014.
- *Single interferometer burst pipeline comparison* - LIGO-Virgo Collaboration meeting, **Caltech**, March 2013.

- *Update on investigations by the detector characterization working group on the Advanced LIGO seismic isolation subsystem* - LIGO-Virgo collaboration meeting, **Hannover, Germany**, September 2013.
- *Advanced LIGO Seismic Isolation* - Physics Graduate Student Organization Seminar, **University of Massachusetts Amherst**, September 2012.
- *Data Quality Studies on LIGO interferometers* - Physics Graduate Student Organization seminar, **University of Massachusetts Amherst**, August 2011.
- *LIGO burst data quality* - LIGO-Virgo collaboration meeting, **Caltech**, March 2010.

## SCIENTIFIC ORGANIZATIONS and SERVICE

- Scientific Organizing Committee - **Aspen Center for Physics: Astrophysics with Gravitational-Wave Populations**, January 2019
- Scientific Organizing Committee - **Gravitational Wave Physics and Astronomy Workshop (GWPAW)**, December 2018
- Co-chair, Scientific Organizing Committee - **Dawn IV in Amsterdam, the Netherlands**, August 2018
- Member, **LISA Consortium** (since 2018)
- Executive Committee - **Caltech/JPL Association for Gravitational-Wave Research (CaJAGWR)** (since 2018)
- Article referee, **Monthly Notices of the Royal Astronomical Society** (since 2018)
- Scientific Organizing Committee - **LIGO-Virgo's First Open Data Workshop**, March 2018
- Executive Committee, Member at large - **APS Division of Gravitation (DGRAV)**, 2018-2021
- Member, **Gravitational Wave International Committee 3G science case team** (since 2017)
- Article referee, **AAS Astrophysical Journal Supplement Series** (since 2017)
- Member (non-voting), **LIGO Scientific Collaboration's Executive Committee** (since 2017)
- Member, **LIGO-Virgo Meeting Organization Committee** (since 2017)
- Executive Committee, Student representative - **APS Division of Gravitation (DGRAV)**, 2015-2017
- Article referee, **Classical and Quantum Gravity** (since 2012)
- Member, **American Physical Society** (since 2011)
- Member, **LIGO Scientific Collaboration** (since 2007)

## MENTORING

- **Co-mentored two student projects** during the 2018 **Caltech Summer Undergraduate Research Fellowship** program. Sarah McCarthy, from Grinnell College, worked on a machine learning project using image classification to distinguish low threshold signals from noise, and Ayon Biswas, from the Indian Institute of Technology Guwahati, worked on a machine learning project to predict interferometer performance based on subsystem and environment trends. **Biswas has a paper in progress based on this work.**

- **Co-mentored two student projects** at the **Kavli Summer Program in Astrophysics 2017**; one investigating novel tests of general relativity with gravitational wave signals, and the other exploring the supernova rate local to the Earth within the Milky Way and associated probes of supernova physics using gravitational waves.
- Mentored a **LIGO Summer Undergraduate Research Fellow** (SURF) student at Caltech on a project studying nonlinear seismic noise the the Advanced LIGO detectors in summer 2016, and assisted in mentoring two SURF student projects in summer 2017.
- **Mentored and trained five graduate students and postdocs serving as LSC fellows at the LIGO Livingston detector** in fall 2015. The LSC fellows program is intended to support the astrophysical searches by embedding scientists with diverse specialties at the detector to improve the quality of the data.
- **Mentored and trained dozens of LIGO data quality shifters**, volunteer scientists from LIGO data analysis and instrument science charged with monitoring evaluating the impact of noise on the astrophysical analyses throughout the Advanced LIGO observing runs.
- **Mentored more than ten graduate students and postdocs working on LIGO detector characterization** through project placement, guiding investigations, and advising on dissemination of their results.
- **Mentored, directly supervised, and developed** the research projects of **six undergraduate students** at the University of Massachusetts Amherst and remotely.

## TEACHING EXPERIENCE at the UNIVERSITY OF MASSACHUSETTS AMHERST

Introductory Physics II Laboratory, Fall 2009

Lectured and supervised introductory physics laboratory course on optics, electromagnetism, and atomic physics for science majors.

From the Big Bang to Black Holes, Spring 2011

Teaching assistant for a writing-based general education course covering popular physics from quantum mechanics to cosmology aimed at students studying the humanities.

Seeing the Light, Fall 2011 and Fall 2012

Teaching assistant for a general education course addressing the physics of light focusing on applications such as lighting in theatre design and photography.

Introductory Physics I - Flipped Classroom, Spring 2014

Part of a team of faculty and teaching assistants that developed content for and executed a flipped classroom course in which the students watched video lectures outside of class and allotted lecture time was used for active learning through interactive team-based problem solving.

Introductory Physics I - Traditional Lecture, Fall 2012

Held open office hours and contributed to lecture preparation for an introductory mechanics course for science majors outside of physics.

Writing in Physics for Majors, Spring 2014

Used my background in writing and communication to help upper level physics major hone their technical writing skills — included a wide variety of target audiences and advanced physics topics.

## OTHER TEACHING EXPERIENCE

**The ABCs of course design** - Caltech, November 2017

Attended a short course sponsored by the Caltech Center for Teaching, Learning and Outreach. We covered "backwards" course design, learning outcomes, incorporating active learning, developing assessments, inclusive teaching, and class structure.

**Workshop on inclusive teaching practices** - Caltech, April 2017

Gave an hour-long workshop on strategies for fostering a welcoming environment for a diverse student population, including first-generation college students, to fellow postdocs at Caltech.

**Lectures on data analysis techniques** - Caltech, July 2016

Lectured students attending the LIGO SURF program on basic signal processing, discretized functions, frequency transforms, and gravitational wave data analysis techniques.

**Invited lecture on gravitational wave burst data analysis** - Caltech, July 2015

Gave a lecture on the recovery of arbitrary short-duration gravitational wave burst waveforms from the data of terrestrial interferometers at the Caltech Gravitational Wave Astrophysics School. https://www.cgwas.org/lectures_and_handson.html

**Invited lectures series on detector characterization** - KAIST in Daejeon, Korea, July 2015

Delivered a three pedagogical lectures on the characterization of the Advanced LIGO detectors to improve the sensitivity of the transient astrophysical analyses and enable confidence source detection and accurate parameter estimation at the 2015 International School on Numerical Relativity and Gravitational Waves.

**The Situation Room: Teaching for Every Classroom** workshop - Amherst, Massachusetts, 2014

Participated in a master class format workshop simulating common university science teaching settings: laboratory, small advanced lecture, large introductory lecture, and discussion section.

**Teaching at teaching-intensive institutions** workshop - Boston, Massachusetts, 2014

Attended the regional teaching workshop hosted by Bridgewater State University. Acquired skills for using a culturally inclusive pedagogy in teaching science and how to effectively mentor student researchers.

**Physics coach for Introductory Physics II discussions** - Syracuse University, 2006-2008

Worked directly with students to help them solve challenging electromagnetism problems in the format of a flipped-classroom setting.

## BROADER IMPACTS

- Interviewed in a live Google Hangout event on LIGO & Gravitational Waves for the Deep Astronomy series that has been **viewed 13,300 times**, February 2016.
- Authored the blog piece for CQG+ 'How do we know LIGO detected gravitational waves?' that accompanied the detector characterization companion paper to the GW150914 discovery. According to the CQG editor, it remains t**he most popular CQG+ blog piece to date.**
- Participated in 2017 Northwestern program to **reach minority-serving schools** by speaking about gravitational wave research and careers with students, physics departments, and their local community; reached three schools and over 200 students.
- Leader of the **LIGO-Virgo (LVC) Allies** since March 2016. [lvcallies.org]

- Founding member and elected executive chair of the **Graduate Women in STEM (GWIS) organization at UMass Amherst**. GWIS grew to serve a community of over a thousand graduate students in the College of Natural Sciences and the College of Engineering by providing professional development, mentoring, and outreach opportunities. [blogs.umass.edu/gwis]
- Through my work with the Graduate Women in STEM (GWIS) organization I have planned and participated in stellar outreach programs like **Eureka!, which supported dozens of middle-school-aged girls from urban Holyoke** to spend a month on the UMass campus participating in hands-on science and math workshops. I have also helped plan and implement faculty luncheons for women graduate students: opportunities to connect with faculty members.
- As President of Women and Minorities in Physics (WMP) at UMass I secured funding to support the WMP library, sponsored student seminar talks, **hosted an invited speaker from the UMass psychology department for a workshop on social bias in academia**, and organized meetings to discuss issues important for women and minorities in the physics department.
- Gave talks on gravitational wave astrophysics to **100 first-year Earth Science students** at Mohonasen Senior High School, December 2016.
- Ran a **coding workshop on how to build a website for high school girls** at Mohonasen Senior High School, December 2016.
- Gave a talk on LIGO and the GW150914 discovery to a high school physics class at **Cobleskill-Richmondville High School in New York,** December 2016.
- Gave an invited lecture at the **WISRD Community Lecture Series** at Wildwood School on General Relativity, gravitational waves, the LIGO detectors, and the GW150914 discovery, May 2016.
- Served as a STEM Superstar for the **Project STEM program** aimed at middle-school-aged girls interested in science. Did demos on spacetime and waves and discussed the recent gravitational wave detections, June 2016 and June 2017.
- Volunteered at **Science Saturday at the LIGO Livingston detector**, guiding visitors on a tour of the facility and answering questions about the science of gravitational waves and LIGO, February 2016.
- Designed a **data analysis workshop for K-12** exploring search algorithms and finding weak signal in noisy data. Given at Mohonasen High School in May 2014, and Cobleskill-Richmondville High School in May 2015.
- Developed and ran a day-long physics event exploring waves, sound, light, gravity, and LIGO research at a summer science program for incoming **fifth grade girls** at Bard College at Simon's Rock, June 2012.
- *Spacetime, black holes, and cosmic explosions!* - **Geeks Night Out public talk** at the Amherst Brewing Company, Fall 2014
- Talks at schools: *Gravitational Waves, LIGO, and Communicating Science* at **Mohonasen Senior High School**, May 2013; *Communication in Science at* **Draper Middle School**, December 2012.

## SELECT LIST OF PUBLICATIONS

*Google scholar statistics: 19,456 total citations, h-index: 51*

*Indicates refereed publications

1. *The impact of transient noise on the parameter estimation of gravitational waves from binary black holes.* J. McIver, T.J. Massinger, D. Davis, L. Nuttall, V. Raymond, R. Smith. In prep.
2. *New methods to diagnose the impact of seismic events on the LIGO detectors.* A. Biswas, J. McIver, A. Mahabal. In prep.
3. *Global strategies for gravitational wave astronomy.* J. McIver, editor. Report from the Dawn IV workshop; Amsterdam August 30-31 2018. In prep.
4. *Diagnostic Methods for gravitational-wave detectors.* J. McIver et al. Advanced Interferometric Gravitational-Wave Detectors - Volume 1: Essentials of gravitational-wave detectors. Editors: P. Saulson, D. Reitze, H. Grote. Final book proofs submitted - to be published soon.
5. * *GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral.* B.P. Abbott et al. *PRL 119, 161101* (2017) - LIGO-Virgo paper writing team member
6. * *Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914.* B. P. Abbott et al. Class. Quantum Grav. 33 134001 (2016) - Lead author
7. *Mitigation of the instrumental noise transient in gravitational-wave data surrounding GW170817.* C. Pankow, K. Chatziioannou, E.A. Chase, T. B. Littenberg, M. Evans, J. McIver, et al. Preprint: arXiv 1808.03619 (2018)
8. * *Effects of transients in LIGO suspensions on searches for gravitational waves.* M. Walker, T. D. Abbott, S. M. Aston, G. González, D. M. Macleod, J. McIver, et al. Review of Scientific Instruments 88,124501 (2017)
9. * *Effects of Data Quality Vetoes on a Search for Compact Binary Coalescences in Advanced LIGO's First Observing Run.* B.P. Abbott et al. Class. Quantum Grav. 35, 6 (2017)
10. * *Observation of Gravitational Waves from a Binary Black Hole Merger.* B. P. Abbott et al. Phys. Rev. Lett. 116, 061102 (2016)
11. * *GW170817: Measurements of neutron star radii and equation of state.* B.P. Abbott et al. Phys. Rev. Lett. 121, 161101 (2018)
12. *Properties of the binary neutron star merger GW170817.* B.P. Abbott et al. Submitted (2018). Preprint: arXiv: 1805.11579
13. * *Multi-messenger Observations of a Binary Neutron Star Merger.* B.P. Abbott et al. Ap. J. Letters 848, 2. (2017)
14. * *Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A.* B.P. Abbott et al. Ap. J. Letters 848, 2 (2017)
15. * *A gravitational-wave standard siren measurement of the Hubble constant.* B.P. Abbott et al. Nature 551, 85–88 (2017)
16. * *GW170608: Observation of a 19-solar-mass Binary Black Hole Coalescence.* B.P. Abbott et al. Ap. J. Letters 851, 2 (2017)
17. * *GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence.* B.P. Abbott et al. Phys. Rev. Lett. 119, 141101 (2017)
18. * *GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2.* B. P. Abbott et al. Phys. Rev. Lett. 118, 221101 (2017)

19. * *GW151226: Observation of Gravitational Waves from a 22 Solar-mass Binary Black Hole Coalescence*. B. P. Abbott et al. Phys. Rev. Lett. 116, 241103 (2016)

20. * *Binary Black Hole Mergers in the first Advanced LIGO Observing Run*. B.P. Abbott et al. Phys. Rev. X 6, 041015 (2016)

21. * *Upper limits on the rates of binary neutron star and neutron-star--black-hole mergers from Advanced LIGO's first observing run.* B.P. Abbott et al. Ap. J. Letters 832, 2 (2016)

22. * *All-sky search for short gravitational-wave bursts in the first Advanced LIGO run*. B.P. Abbott et al. Phys. Rev. D 95, 042003 (2017)

23. * *Observing gravitational-wave transient GW150914 with minimal assumptions*. B.P. Abbott et al. Phys. Rev. D 93, 122004 (2016)

24. * *GW150914: First results from the search for binary black hole coalescence with Advanced LIGO*. B.P. Abbott et al. Phys. Rev. D 93, 122003 (2016)

25. * Identification and mitigation of narrow spectral artifacts that degrade searches for persistent gravitational waves in the first two observing runs of Advanced LIGO. P. Covas et al. Phys. Rev. D 97, 082002 (2018)

26. * *Improving the data quality of Advanced LIGO based on early engineering run results.* L. Nuttall et al. Class. Quant. Grav. 32, 24 (2015)

27.* *Characterization of the LIGO detectors during their sixth science run*. J. Aasi, et. al. Class. Quant. Grav. 32 115012 (2015)

28.* *Seismic isolation of Advanced LIGO: Review of strategy, instrumentation and performance*. F. Matichard et al. Class. Quant. Grav. 32 185003 (2015)

29. * *Data Quality Studies of Enhanced Interferometric Gravitational Wave Detectors*. Jessica McIver. Class. Quantum Grav. 29 124010 (2012)

30. * *All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run.* J. Abadie et al. Phys. Rev. D 85, 122007 (2012)

31. * *Search for gravitational waves from binary black hole inspiral, merger, and ring-down in LIGO- Virgo data from 2009-2010.* J. Aasi et. al. Phys. Rev. D 87, 022002 (2012)

32. * *Search for gravitational waves from low mass compact binary coalescence in LIGO's sixth science run and Virgo's science runs 2 and 3*. J. Abadie et al. Phys. Rev. D 85, 082002 (2012)

33.* *A hierarchical method for vetoing noise transients in gravitational-wave detectors*. J.R. Smith, T. Abbott, E. Hirose, N. Leroy, D. Macleod, J. McIver, P. Saulson, P. Shawhan. Class. Quantum Grav. 28 235005 (2011)

34. *Generating Event Triggers Based on Hilbert-Huang Transform and Its Application to Gravitational-Wave Data*. E. Son, W. Kim, Y. Kim, J. McIver, J.J. Oh, S. Oh. Submitted to CQG (2018). Preprint: 1810.07555.