

MAYA FISHBACH

Assistant Professor ◊ Canadian Institute for Theoretical Astrophysics ◊ University of Toronto

<https://mayafishbach.me>

EMPLOYMENT

Assistant Professor	<i>2022–</i>
Canadian Institute for Theoretical Astrophysics (CITA), University of Toronto	
NASA Hubble Fellowship Program Einstein Postdoctoral Fellow	<i>2020-2022</i>
CIERA, Northwestern University	
NSF Graduate Research Fellow	<i>2017-2020</i>
Astronomy & Astrophysics, University of Chicago	

EDUCATION

University of Chicago , PhD in Astronomy & Astrophysics	<i>August 2020</i>
Thesis: “Astronomy and Cosmology with Gravitational Waves”	
Supervisor: Daniel Holz	
Yale University , B.S. Physics (Intensive); Mathematics <i>cum laude</i>	<i>May 2015</i>

GRANTS AND FELLOWSHIPS

Connaught New Researcher Award	<i>2024-2026</i>
Proposal: “Probing Black Holes Over Cosmic History with Gravitational Waves”	
Award: 25,000 CAD over 2 years	
Scialog Fellowship: Early Science with the LSST	<i>2024-2026</i>
Cohort of 50 fellows selected for RCSA science dialog initiative	
Sloan Research Fellowship	<i>2024-2026</i>
Award: 75,000 USD over 2 years	
NSERC Research Tools and Instruments (RTI) , Co-Investigator	<i>2024</i>
Proposal: “Developing accurate radiative transport methods with GPU-accelerated computing”	
Award: 150,000 CAD over 1 year	
NSERC Discovery Grant	<i>2023-2028</i>
Proposal: “Black Hole Astrophysics and Cosmology with Gravitational Waves”	
Award: 227,500 CAD over 5 years	

AWARDS

John Charles Polanyi Prize in Physics , Council of Ontario Universities	<i>2023</i>
William Rainey Harper Dissertation Fellowship , University of Chicago	<i>2019-2020</i>
Gravitational-Wave Astrophysics Award , Aspen Center for Physics	<i>February 2019</i>
Blue Apple Award for best student talk, APS Division of Gravitational Physics	<i>October 2018</i>
Howard L. Schultz Prize , Yale University Department of Physics	<i>May 2015</i>

PUBLICATION SUMMARY

View on ADS

50 short-author list publications (with preprints), including **17 first-author**, **21 second-author**
15 LIGO-Virgo-KAGRA (LVK) collaboration papers with significant contributions

Number of citing papers: 12,586 (excluding LVK papers without significant contributions)

h-index: 39 (excluding LVK papers without significant contributions)

PRESENTATIONS SUMMARY

36 invited conference talks
43 invited seminars and colloquia

SELECTED PUBLIC OUTREACH

“Bending Light” Documentary Screening, Toronto *May 2024*
Panelist at Q&A following screening of documentary featuring interviews with me

Astronomy on Tap, Toronto *March 2024*
Delivered 10-minute talk, one of three keynote speakers. Over 450 attendees.

De Leidsche Flesch visit to CITA *May 2023*
Co-organized panel discussion at CITA for 30 students from Leiden University

Queen’s Space Conference, Kingston ON *February 2023*
Invited talk at undergraduate conference, 50 audience members

AAS Journal Author Series [link](#) *July 2022*
Interview on black hole results in Fishbach & Kalogera (2022)

Naperville Astronomical Association *June 2022*
In-person public talk and Q&A, 50 audience members

Star-B-Q Speaker, Astronomy Ireland *October 2021*
Livestreamed public talk and Q&A, 250 audience members

Alan Alda’s Science Clear & Vivid Podcast [link](#) *July 2021*

Bad Astra YouTube Interview [link](#) *February 2021*

Ask-a-Scientist Speaker, Fermilab *November 2019*
Public talk and lab tours, 126 visitors

Soapbox Science Speaker, Navy Pier *July 2018*
Science demonstrations and soapbox talk, 400 visitors

Astronomy Conversations Presenter, Adler Planetarium *2016- 2020*
Bimonthly, 2-hour sessions with planetarium visitors at the Space Visualization Lab

PRESS

Click publication name for link to article

Hierarchical Black Hole Mergers

AAS Nova (*October 2022*); University of Birmingham News (*July 2021*); AAS Nova (*May 2017*); Science News (*January 2017*)

Big Black Holes and Pair Instability Mass Gap

Symmetry Magazine (*December 2020*); Sky & Telescope (*November 2020*); Astrobit.es (*September 2017*)

Gravitational-Wave Discoveries from LIGO-Virgo-KAGRA’s Third Observing Run

Sky & Telescope (*June 2022*); CNN (*November 2021*); NPR (*June 2021*); Science Magazine (*June 2021*); Quanta Magazine (*February 2021*); Science Magazine (*October 2020*); Nature.com (*October 2020*); APS News (*June 2020*)

Gravitational-Wave Discoveries from LIGO-Virgo’s Second Observing Run

AAS Nova (*April 2020*); Sky & Telescope (*December 2018*); AAS Nova (*September 2018*); Sky & Telescope (*June 2017*)

Gravitational-Wave Cosmology

APS News (*June 2019*); UChicago News (*October 2018*); UChicago News (*September 2018*); The Daily Beast (*February 2018*)

CONFERENCE PLANNING

KITP conference co-organizer The Lifecycle of Stellar Black Holes	2024-2025
ICERM workshop co-organizer Scientific Machine Learning for Gravitational Wave Astronomy	2024-2025
Lorentz Center workshop co-organizer Challenges and future perspectives in gravitational-wave astronomy	2023-2024
GWPAW 2024 Science Organizing committee	2024
Amaldi 15 Conference Science Organizing Committee	2023
GWPAW 2022 Science Organizing Committee	2022

COMMITTEES AND PROFESSIONAL SERVICE

LIGO Scientific Collaboration , member since 2016, PI of CITA group since 2022	2016–
LIGO-Virgo-KAGRA Rates & Populations subgroup co-chair	2022–
CITA Seminar Committee chair	2024–
Graduate Admissions Committee member, University of Toronto Astronomy	2024–
CITA Postdoc Selection Committee member	2022–
NASA Peer Review subject-matter expert reviewer	2023
DGRAV Executive Committee student representative	2020-2022
Referee: The Astrophysical Journal, The Astrophysical Journal Letters, Monthly Notices of the Royal Astronomical Society, Journal of Cosmology and Astroparticle Physics, Physical Review D, Nature Astronomy, Science	

TEACHING

<i>Upcoming: Prospects in Theoretical Physics</i> (IAS) Topic: Gravitational Waves from Theory to Observation Member of organizing committee and lecturer	July 2025
<i>Upcoming: Michigan Cosmology Summer School</i> (University of Michigan) Invited lecturer on cosmology with gravitational waves	June 2025
Nordic Winter School on Multimessenger Astrophysics (Niels Bohr Institute) One of four invited lecturers in week-long school for graduate students Topic: astrophysical populations of black holes	January 2024
AST3101 (University of Toronto) Mini Course: Black Holes and Neutron Stars	Fall 2023
Matched Filtering for Time Series Analysis Workshop LSST Data Science Fellowship Program Session 13	October 2021
DATA SCI 401 (Northwestern University) Data-Driven Research in Physics, Geophysics, and Astronomy	Winter-Spring 2021

FULL LIST OF INVITED CONFERENCE TALKS

Frontiers of Astrophysical Black Holes (Sexten Winter Workshop)	March 17-21, 2025
Picture an Astronomer Symposium (UChicago)	March 4-6, 2025
Fundamental physics and gravitational wave detectors (Pollica Physics Center) <i>Invited talk</i> , Gravitational waves and the stellar graveyard	Sep 9-20, 2024
TeV Particle Astrophysics Workshop (Chicago) <i>Invited keynote talk</i> , Astrophysics and cosmology with merging black holes	Aug 26-30, 2024
Gravitational Wave Astrophysics Conference (Jingzhou, China) <i>Invited talk (virtual)</i> , Astrophysical Lessons from LIGO-Virgo-KAGRAs Black Holes	Jun 29-Jul 4, 2024
20th Anniversary of the KICP (Chicago)	June 6-8, 2024

Invited talk, Listening to black holes with gravitational waves
Hotwiring the Transient Universe (Toronto) *May 13-16, 2024*

Invited talk, Peering into the stellar graveyard with gravitational waves
Gravitational waves: a new ear on the chemistry of galaxies (Lorentz Center) *Apr 29-May 3, 2024*

Invited talk, Introduction to gravitational-wave populations
MODEST-23: Star Clusters in the Post-Pandemic Era (Northwestern) *Aug 28-Sep 1, 2023*

Invited panelist, Compact Objects and Gravitational Wave Sources
Gravitational-wave populations: what's next? (University of Milano-Bicocca) *July 10-14, 2023*

Discussion chair, Mind the Outliers
Statistical Challenges in Modern Astronomy VIII (Penn State) *June 12-16, 2023*

Invited talk, Population properties of black holes inferred from gravitational waves
KICP Workshop (Chicago) *September 19-23, 2022*

The Quest for Precision Gravitational-Wave Cosmology
Invited talk, What to expect from O4 and O5
GMT Community Science Meeting (Sedona) *September 1-3, 2022*

Black Holes at All Scales
Invited talk, Astrophysical Implications of LIGO–Virgo–KAGRA’s Black Holes
Physics and Astrophysics at the eXtreme VIII (MIT) *August 1-3, 2022*

Invited speaker and panelist, Compact Binary Populations
EAS 2022: Shedding light on the dark side of the Universe with new cosmological probes (Valencia) *Jun 27-Jul 1, 2022*

Invited talk, Cosmology with gravitational-wave standard sirens
CIFAR Gravity and Extreme Universe Meeting (Montreal) *May 30-June 2, 2022*

Invited talk, Comparing black holes in gravitational-wave sources and X-ray binaries
Gravitational Waves Beyond the Boxes II (Perimeter Institute) *April 4-8, 2022*

Invited talk, Challenges for gravitational-wave cosmology
Heraeus Workshop (Bad Honnef, Germany) *April 25-28, 2022*

Gravitational-Wave and Multi-Messenger Astronomy
Invited talk, Black hole astrophysics with gravitational-wave populations
High Energy Astrophysics Division (HEAD) Special Session (Pittsburgh) *March 13-17, 2022*

Invited talk, LIGO-Virgo’s black holes and implications for dynamical assembly
LIGO/Virgo Paper Webinar *December 9, 2021*

Constraints on the cosmic expansion history from GWTC-3
IPAM Workshop (Los Angeles) *November 15-19, 2021*

Source Inference and Parameter Estimation in Gravitational Wave Astronomy
Invited talk, Black hole astrophysics with gravitational-wave catalogs
Physics and Astrophysics at the eXtreme VII *August 23-27, 2021*

Invited panelist, Compact Binaries
Amaldi Conference on Gravitational Waves *July 19-23, 2021*

Plenary talk, Astrophysics with Gravitational Waves
Marcel Grossman Relativity Meeting *July 5-10, 2021*

Invited talk, Lessons from LIGO-Virgo’s Biggest Black Holes
EAS 2021: Birth, Life, and Death of Black Holes *June 28-29, 2021*

Invited review talk, Black Hole Spin Measurements
APS April Meeting *April 17-20, 2021*

Invited talk, Cecilia Payne-Gaposchkin Doctoral Dissertation Award Finalist
Miami 2020 Conference *December 16, 2020*

Invited talk, Astrophysical Lessons from the Second Gravitational-Wave Transient Catalog
LIGO/Virgo Paper Webinar *November 12, 2020*

Population properties of Compact Objects from the Second Gravitational-Wave Transient Catalog
ICERM Workshop *November 16-20 2020*

Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects

Invited talk, Gravitational-wave population statistics

First Cosmic Explorer Conference

October 26-30, 2020

Invited panelist, Compact Binary Formation and Evolution

APS April Meeting (Washington, D.C.)

April 18-21, 2020

Invited talk, Astrophysical Lessons from LIGO/Virgo's Black Holes

Cosmic Controversies (KICP, Chicago)

October 5-8, 2019

Invited talk, Cosmology with Gravitational-Wave Standard Sirens

Merging Visions: Exploring Compact-Object Binaries with Gravity and Light (KITP, Santa Barbara)

June 24-27, 2019

Invited talk, Measurements of H_0 with GW170817

Recontres de Moriond - Gravitation (La Thuille, Italy)

March 24-30, 2019

Invited talk, Binary Black Hole Population Properties Inferred from the O1 and O2 Observations

Deep Learning for Multi-Messenger Astrophysics (NCSA, UIUC)

October 17-19, 2018

Invited panelist, Signal-processing Algorithms to Enable Real-time Gravitational Wave Discovery

Physics and Astrophysics at the eXtreme III (Penn State)

February 5-7, 2018

Invited panelist, Hubble Parameter

FULL LIST OF INVITED SEMINARS AND COLLOQUIA

Herzberg Astrophysics DAO Astronomy Colloquium	<i>April 8, 2025</i>
University of British Columbia Astronomy Colloquium	<i>April 7, 2025</i>
McMaster University Physics and Astronomy Colloquium	<i>October 30, 2024</i>
University of Michigan Astrophysics Seminar	<i>April 15, 2024</i>
Center for Computational Astrophysics Colloquium	<i>March 29, 2024</i>
Institute for Advanced Study Astrophysics Seminar	<i>March 28, 2024</i>
McGill Physics Colloquium	<i>January 19, 2024</i>
Queen's-RMC Astrophysics Seminar	<i>November 29, 2023</i>
York University Physics and Astronomy Colloquium	<i>September 26, 2023</i>
New York University Astrophysics Seminar	<i>April 25, 2023</i>
University of Virginia Gravity Seminar	<i>April 9, 2023</i>
University of Toronto Astronomy Colloquium	<i>February 15, 2023</i>
University of Southern California Astronomy Seminar	<i>January 27, 2023</i>
Columbia University Physics Colloquium	<i>November 21, 2022</i>
Monash University Gravitational-Wave Seminar	<i>June 2, 2022</i>
Caltech Astronomy Colloquium	<i>May 11, 2022</i>
Stanford Institute for Theoretical Physics Colloquium	<i>May 9, 2022</i>
CITA Seminar	<i>April 7, 2022</i>
Perimeter Institute Colloquium	<i>March 21, 2022</i>
Johns Hopkins Physics Theory Group Seminar	<i>March 8, 2022</i>
UT Austin Astronomy Colloquium	<i>February 28, 2022</i>
Northwestern Physics & Astronomy Colloquium	<i>February 23, 2022</i>
UC Berkeley Astronomy Colloquium	<i>February 17, 2022</i>
UCLA Astronomy Colloquium	<i>February 16, 2022</i>
CMU-Pitt Astro Colloquium	<i>February 10, 2022</i>
Cornell Physics Seminar	<i>January 31, 2022</i>
Georgia Tech School of Physics Seminar	<i>January 24, 2022</i>
Rice Astronomy Seminar	<i>December 3, 2021</i>
UC Berkeley TAC Seminar	<i>September 27, 2021</i>
Los Alamos Astrophysics Seminar	<i>September 9, 2021</i>
Fermilab CPC Seminar	<i>April 26, 2021</i>
Royal Observatory, Edinburgh Astronomy Colloquium	<i>February 24, 2021</i>

Princeton Gravity Initiative Seminar	February 22, 2021
Harvard ITC Colloquium	February 18, 2021
Perimeter Institute Strong Gravity Seminar	January 28, 2021
University of Florida Theoretical Astrophysics Seminar	October 14, 2020
JILA Astronomy Seminar	September 4, 2020
University of Portsmouth ICG Colloquium	September 3, 2020
University of Wisconsin, Milwaukee CGCA Seminar	November 18 2019
Harvard ITC Galaxies & Cosmology Lunch	November 12 2019
Albert Einstein Institute Relativistic Astrophysics seminar (Potsdam)	September 18, 2019
Caltech TAPIR seminar	December 14, 2018
UC Santa Cruz Astronomy Seminar	October 25, 2018

PUBLICATION LIST

- * indicates student project I supervised
- † indicates review article
- †† indicates invited editorial

Short author list publications

65. **Fishbach, M.**, “Probing cosmic chemical enrichment with next-generation gravitational-wave observatories,” arXiv:2411.08658. *Invited contribution for Classical & Quantum Gravity Focus Issue*
64. * Rao, A., Ye, C. S., **Fishbach, M.**, “Predicting the rate of fast radio bursts in globular clusters from binary black hole observations,” arXiv:2409.20564
63. † Chatziioannou, K., Dent, T., **Fishbach, M.**, Ohme, F., Pürrer, M., Raymond, V., Veitch, J., “Compact binary coalescences: gravitational-wave astronomy with ground-based detectors,” arXiv:2409.02037. *Invited review for Living Reviews in Relativity*
62. * Wu, T. Y., **Fishbach, M.**, “Are long gamma-ray bursts progenitors to merging binary black holes?” arXiv:2408.04064, ApJ accepted
61. Hanselman, A. G., Vijaykumar, A., **Fishbach, M.**, Holz, D. E., “Gravitational-wave dark siren cosmology systematics from galaxy weighting,” arXiv:2405.14818, ApJ accepted
60. Tong, H., Guttman, N., Clarke, T. A., Lasky, P. D., Thrane, E., Payne, E., Nathan, R., Farr, B., **Fishbach, M.**, Ashton, G., Di Marco, V., “Transdimensional inference for gravitational-wave astronomy with Bilby,” arXiv:2404.04460
59. †† **Fishbach, M.**, “Exploring the black hole population with an open mind,” Physics 17, 57, DOI: 10.1103/Physics.17.57
58. * Schiebelbein-Zwack, A., **Fishbach, M.**, “The Mass Density of Merging Binary Black Holes Over Cosmic Time,” ApJ 970 128 (2024)
57. Ye, C.S., **Fishbach, M.**, “The Redshift Evolution of the Binary Black Hole Mass Distribution from Dense Star Clusters,” ApJ 967 62 (2024)
56. †† **Fishbach, M.**, “Mystery in the ‘mass gap,’” Science 383 6680, DOI: 10.1126/science.adn1869
55. Vijaykumar, A., **Fishbach, M.**, Adhikari, S., Holz, D.E., “Inferring host galaxy properties of LIGO-Virgo-KAGRA’s black holes,” ApJ 972 157 (2024)
54. Essick, R., **Fishbach, M.**, “Ensuring Consistency between Noise and Detection in Hierarchical Bayesian Inference,” ApJ 962 169 (2024)

53. * Farah, A., **Fishbach, M.**, Holz, D.E., “Two of a Kind: Comparing big and small black holes in binaries with gravitational waves,” ApJ 962 69 (2024)
52. **Fishbach, M.**, van Son, L., “LIGO-Virgo-KAGRA’s Oldest Black Holes: Probing star formation at cosmic noon with GWTC-3,” ApJL 957 L31 (2023)
51. * Oh, M., **Fishbach, M.**, Kimball, C, Kalogera, V., Ye, C., “The role of natal kicks in forming asymmetric compact binary mergers,” ApJ 953 152 (2023)
50. **Fishbach, M.**, Fragione, G., “Globular cluster formation histories, masses and radii inferred from gravitational waves,” MNRAS stad1364 (2023)
49. Farah, A., Edelman, B., Zevin, M., **Fishbach, M.**, Ezquiaga, J.M., Farr, B., Holz, D.E., “Things that might go bump in the night: Assessing structure in the binary black hole mass spectrum,” ApJ 955 107 (2023)
48. Gair, J.R., . . . , **Fishbach, M.** . . . , “The Hitchhiker’s Guide to the Galaxy Catalog Approach for Dark Siren Gravitational-wave Cosmology,” ApJ 166 22 (2023)
47. Essick, R., Farr, W.M., **Fishbach, M.**, Holz, D.E., Katsavounidis, E., “(An)isotropy Measurement with Gravitational Wave Observations,” Phys. Rev. D 107, 043016 (2023)
46. * Gallegos-Garcia, M., **Fishbach, M.**, Kalogera, V., Berry, C.P.L., Doctor, Z., “Do high-spin high mass X-ray binaries contribute to the population of merging binary black holes?” ApJL 938 L19 (2022)
45. **Fishbach, M.**, Kimball, C., Kalogera, V., “Limits on hierarchical black hole mergers from the most negative χ_{eff} systems,” ApJL 935 L26 (2022)
44. Bavera, S., **Fishbach, M.**, Zevin, M., Zapartas, E., Fragos, T., “The $\chi_{\text{eff}} - z$ correlation of field binary black hole mergers and how 3G gravitational-wave detectors can constrain it,” A&A 665 A59 (2022)
43. * Ye, C., **Fishbach, M.**, “Inferring the neutron star maximum mass and lower mass gap in neutron star-black hole systems with spin,” ApJ 937 73 (2022)
42. † Moresco, M., . . . , **Fishbach, M.** . . . , “Unveiling the Universe with Emerging Cosmological Probes,” Living Reviews in Relativity 25, 6 (2022) **Wrote chapter on standard sirens**
41. * Farah, A., **Fishbach, M.**, Essick, R., Holz, D.E., Galaudage, S., “Bridging the Gap: Neutron Stars, Black Holes, or Both?,” ApJ 931 108 (2022)
40. **Fishbach, M.**, Kalogera, V., “Apples and Oranges: Comparing black holes in X-ray binaries and gravitational-wave sources,” ApJL 929 L26 (2022)
39. Essick, R., Farah, A., Galaudage, S., Talbot, C., **Fishbach, M.**, Thrane, E., Holz, D.E., “Probing Extremal Gravitational-Wave Events with Coarse-Grained Likelihoods,” ApJ 926 34 (2022)
38. **Fishbach, M.**, Kalogera, V., “The time delay distribution and formation metallicity of LIGO-Virgo’s binary black holes,” ApJL 914 L30 (2021)
37. † Gerosa, D., **Fishbach, M.**, “Hierarchical mergers of stellar-mass black holes and their gravitational-wave signatures,” Nature Astronomy (2021)
36. Palmese, A., **Fishbach, M.**, Burke, C. J., Annis, J. T., Liu, X. “Do LIGO/Virgo black hole mergers produce AGN flares? The case of GW190521 and prospects for reaching a confident association,” ApJL 914 L34 (2021)
35. * Ye, C., **Fishbach, M.** “Cosmology with Standard Sirens at Cosmic Noon,” Phys. Rev. D 104, 043507 (2021)

34. **Fishbach, M.**, Doctor, Z., Callister, C., Edelman, B., Ye, J., Essick, R., Farr, W.M., Farr, B., Holz, D.E. “When are LIGO/Virgo’s Big Black Hole Mergers?” ApJ 912 98 (2021)
33. **Fishbach, M.**, Holz, D.E. “Minding the Gap: GW190521 as a straddling binary,” ApJL 904 L26 (2020)
32. **Fishbach, M.**, Essick, R., Holz, D.E. “Does Matter Matter? Using the mass distribution to distinguish neutron stars and black holes,” ApJL 899 L8 (2020)
31. Olejak, A., **Fishbach, M.**, Belczynski, K., Holz, D. E., Lasota, J. -P., Miller, M. C., Bulik, T. “The Origin of Inequality: isolated formation of a 30+10 M_{\odot} binary black-hole merger,” ApJL 901 L39 (2020)
30. Farmer, R. and Renzo, M. and de Mink, S., **Fishbach, M.**, Justham, S. “Constraints from gravitational wave detections of binary black hole mergers on the $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ rate,” ApJL 902 L36 (2020)
29. Farah, A., Essick, R., Doctor, Z., **Fishbach, M.**, Holz, D.E. “Counting on Short Gamma-Ray Bursts: Gravitational-wave Constraints of Jet Geometry,” ApJ 895 108 (2020)
28. Gray, A., . . . , **Fishbach, M.**, . . . , “Cosmological inference using gravitational wave standard sirens: A mock data analysis,” Phys. Rev. D 101 12 (2020)
27. Callister, T., **Fishbach, M.**, Holz, D.E., Farr, W.M. “Shouts and Murmurs: Combining Individual Gravitational-Wave Sources with the Stochastic Background to Measure the History of Binary Black Hole Mergers,” ApJL 896 L32 (2020)
26. Adhikari, S., **Fishbach, M.**, Holz, D.E., Wechsler, R.H., Fang, Z. “The binary-host connection: astrophysics of gravitational wave binaries from their host galaxy properties,” ApJ 905 21 (2020)
25. **Fishbach, M.**, Farr, W.M., Holz, D.E. “The Most Massive Binary Black Hole Detections and the Identification of Population Outliers,” ApJL 891 L31 (2020)
24. **Fishbach, M.**, Holz, D.E. “Picky Partners: The Pairing of Component Masses in Binary Black Hole Mergers,” ApJL 891 L27 (2020)
23. Farr, W.M., **Fishbach, M.**, Ye, J., Holz, D.E. “A Future Percent-Level Measurement of the Hubble Expansion at Redshift 0.8 With Advanced LIGO,” ApJL 883 L2 (2019)
22. Lagos, M., **Fishbach, M.**, Landry, P., Holz, D.E. “Standard sirens with a running Planck mass,” Phys. Rev. D 99, 083504 (2019)
21. **Fishbach, M.**, et al. “A standard siren measurement of the Hubble constant from GW170817 without the electromagnetic counterpart,” ApJL 871 L13 (2019)
20. **Fishbach, M.**, Holz, D.E., Farr, W.M. “Does the Black Hole Merger Rate Evolve with Redshift?” ApJL 863 L41 (2018)
19. Pardo, K., **Fishbach, M.**, Holz, D.E., Spergel, D. N. “Limits on the Number of Spacetime Dimensions from GW170817,” JCAP 07 048 (2018)
18. Chen, H.-Y., **Fishbach, M.**, Holz, D.E. “A 2 per cent Hubble constant measurement from standard sirens within 5 years,” Nature 562 545-547 (2018)
17. **Fishbach, M.**, Holz, D.E. “Where are LIGO’s Big Black Holes?” ApJL 851 L25 (2017)
16. **Fishbach, M.**, Holz, D.E. Farr, B. “Are LIGO’s Black Holes Made From Smaller Black Holes?” ApJL 840 L24 (2017)

LIGO-Virgo-Kagra publications to which I contributed significantly

15. Abbott, R. et al. “Constraints on the cosmic expansion history from GWTC-3,” ApJ 949 76 (2023) **Member of paper writing team**
14. Abbott, R. et al. “The population of merging compact binaries inferred using gravitational waves through GWTC-3,” Phys. Rev. X 13, 011048 (2023)
13. Abbott, R. et al. “Upper limits on the isotropic gravitational-wave background from Advanced LIGO and Advanced Virgo’s third observing run,” Phys. Rev. D 104, 022004 (2021)
12. Abbott, R. et al. “Search for lensing signatures in the gravitational-wave observations from the first half of LIGO-Virgo’s third observing run,” ApJ 923 14 (2021)
11. Abbott, R. et al. “Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog,” ApJL 913 L7 (2021) **Chair of paper writing team**
10. Abbott, R. et al. “GW190412: Observation of a Binary-Black-Hole Coalescence with Asymmetric Masses,” Phys. Rev. D 102, 043015 (2020)
9. Abbott, B.P. et al. “A gravitational-wave measurement of the Hubble constant following the second observing run of Advanced LIGO and Virgo,” ApJ 909 218 (2021)
8. Abbott, B.P. et al. “Binary Black Hole Population Properties Inferred from the First and Second Observing Runs of Advanced LIGO and Advanced Virgo,” ApJL 882 L24 (2019) **Member of paper writing team**
7. Abbott, B.P. et al. “GWTC-1: A Gravitational-Wave Transient Catalog of Compact Binary Mergers Observed by LIGO and Virgo during the First and Second Observing Runs,” Phys. Rev. X 9 3 (2019)
6. Soares-Santos, M. et al. “First Measurement of the Hubble Constant from a Dark Standard Siren using the Dark Energy Survey Galaxies and the LIGO/Virgo Binary-Black-hole Merger GW170814,” ApJL 876 L17 (2019) **Member of paper writing team**
5. Abbott, B.P. et al. “Tests of General Relativity with GW170817,” Phys. Rev. Lett. 123, 011102 (2019)
4. Abbott, B.P. et al. “Properties of the Binary Neutron Star Merger GW170817,” Phys. Rev. X, 9, 011001 (2019)
3. Abbott, B.P. et al. “GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral,” Phys. Rev. Lett. 119, 161101 (2017)
2. Abbott, B.P. et al. “Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A,” ApJL 848, L13 (2017)
1. Abbott, B.P. et al. “A gravitational-wave standard siren measurement of the Hubble constant,” Nature 551, 8588 (2017)