

Wen-fai Fong

Northwestern University

Physics & Astronomy

Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA)

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<https://sites.northwestern.edu/wfong/>

SCIENTIFIC INTERESTS

I use observations across the electromagnetic spectrum to study the connections between gamma-ray bursts, fast radio bursts, compact objects, gravitational waves, and other cosmic explosions.

EDUCATION

Harvard University	Cambridge, MA
Ph.D., Astronomy & Astrophysics	2014
– Thesis: “ <i>Unveiling the Progenitors of Short-duration Gamma-ray Bursts</i> ”	
Advisor: Edo Berger	
A.M., Astronomy & Astrophysics	2010
Massachusetts Institute of Technology	Cambridge, MA
S.B., Physics	2008
– Thesis: “ <i>Extrasolar Planet Transit Photometry at Wallace Astrophysical Observatory</i> ”	
Advisor: James L. Elliot	
S.B., Biology	2008

PRE-DOCTORAL AWARDS & HONORS

- **Edward L. Fireman Fellowship**, Harvard Department of Astronomy 2014

AWARDS & HONORS

- **Packard Fellowship for Science and Engineering** 2021
- **NSF Faculty Early Career Development Program (CAREER) Award** 2021
- **NASA Agency Honor Award for Group Achievement** 2020
- **National Academy of Sciences Kavli Fellow** 2018
- **NASA Hubble Postdoctoral Fellowship** 2017–2018
- **APS Cecilia Payne-Gaposchkin Doctoral Dissertation Award in Astrophysics** 2016
- **Research Corporation for Science Advancement Scialog Fellow** 2016
- **NASA Einstein Postdoctoral Fellowship** 2014–2017

APPOINTMENTS

Assistant Professor of Physics & Astronomy, Northwestern University	2018–Present
Hubble Postdoctoral Fellow , Department of Physics & Astronomy, Northwestern University	2017–2018
Einstein Postdoctoral Fellow , Steward Observatory, University of Arizona	2014–2017
Graduate Research Fellow , Center for Astrophysics, Harvard University	2008–2014

PRINCIPAL INVESTIGATOR GRANTS

Research Funding: *Sponsors include the David & Lucile Packard Foundation, National Science Foundation, NASA, Smithsonian Astrophysical Observatory, and the Space Telescope Science Institute.*

Career total: **28** grants, **\$3,596,900**

Diversity, Equity & Inclusion Funding: *Sponsors include American Physical Society, Illinois Space Grant Consortium, Research Corporation for Science Advancement, and various Northwestern offices.*

Career total: **8** mini-grants, **\$36,817**

List of Proposals:

David & Lucile Packard Foundation

- **Packard Fellowship for Science and Engineering** \$875,000
“Unveiling the Origins of the Universe’s Fastest Explosions” 2021–2026

National Science Foundation

- **Faculty Early Career Development Program (CAREER)** \$777,186
“Navigating the Environments of the Universe’s Fastest Transients” 2021–2026
- **Astronomy & Astrophysics Grant, #AST-1909358** \$300,024
“Searches After Gravitational Waves Using Arizona’s Observatories (SAGUARO)” 2019–2022
- **Astronomy & Astrophysics Grant, #AST-1814782** \$449,069
“Unfolding the Dynamic and Colorful Lives of Compact Object Mergers” 2018–2021

National Science Foundation & National Radio Astronomy Observatory

- **NRAO Student Observing Support Grant, #VLA/20B-057** \$28,877
“Elucidating the Explosion and Jet Properties of Cosmological Short GRBs with the VLA” 2020–2022
- **NRAO Student Observing Support Grant, #VLA/19A-124** \$30,792
“Exploring Extreme Explosions from the Cosmic Dawn” 2019–2021

NASA & Smithsonian Astrophysical Observatory

- **Chandra X-ray Observatory Director’s Discretionary** (Science PI: A. Rouco Escorial) \$25,420
“Tracking the X-ray Emission of the Remarkable SGRB 211106A” 2022–2023
- **Chandra X-ray Observatory Director’s Discretionary** (Science PI: G. Schroeder) \$22,970
“The wide angle outflow of SGRB 210726A” 2022–2023
- **Chandra X-ray Observatory** \$56,244

<i>“The Next Breakthroughs Community Program: Chandra-VLA Observations of Compact-Object Mergers”</i>	2022–2024	
• Chandra X-ray Observatory		\$58,780
<i>“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”</i>	2022–2024	
• Chandra X-ray Observatory (Science PI: A. Rouco Escorial)		\$68,200
<i>“Cooling emission from highly magnetized neutron-star crusts”</i>	2022–2024	
• Chandra X-ray Observatory (Science PI: T. Eftekhari)		\$52,920
<i>“Toward an FRB Progenitor: Elucidating the FRB-AGN Connection with Chandra”</i>	2022–2024	
• Chandra X-ray Observatory		\$62,229
<i>“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”</i>	2021–2022	
• Chandra X-ray Observatory, #G00-21041X		\$43,610
<i>“Revisiting the Mysterious X-ray Excess of SGRB 130603B”</i>	2019–2021	
• Chandra X-ray Observatory, #G00-21042X		\$53,070
<i>“The Late-time X-ray Behavior of Short GRBs: Implications for Energetics and Rates”</i>	2019–2021	
• Chandra X-ray Observatory (approved but never initiated program)		\$60,233
<i>“The Next Breakthroughs: Chandra-VLA Observations of Neutron Star Mergers”</i>	2019–2021	
• Chandra X-ray Observatory, #G09-20058A		\$36,605
<i>“Late-time monitoring of GW170817 Across the Electromagnetic Spectrum”</i>	2019–2021	
• Chandra X-ray Observatory, #DD7-18095X		\$26,500
<i>“Continued X-Ray Monitoring of GW170817 with Chandra”</i>	2018–2020	
• Chandra X-ray Observatory, #DD8-19100X		\$34,000
<i>“Continued X-Ray Monitoring of GW170817 with Chandra”</i>	2018–2020	
• Chandra X-ray Observatory, #G07-18024X		\$48,179
<i>“Tracking the Evolution of an X-ray Counterpart to a Gravitational Wave Event”</i>	2018–2019	
• Chandra X-ray Observatory, #G08-19025X		\$59,493
<i>“The Late-time X-ray Behavior of Short GRBs: Implications for Energetics and Rates”</i>	2018–2019	
• Chandra X-ray Observatory (approved but never initiated program)		\$74,429
<i>“Tracking the Evolution of an X-Ray Counterpart to a Gravitational Wave Event”</i>	2017–2019	

NASA & Space Telescope Science Institute

• Hubble Space Telescope, #HST-AR-16136 (Science PI: C. Kilpatrick)		\$89,627
<i>“Using the full power of the HST Archive to Address the Red Supergiant Problem”</i>	2020–2023	
• Hubble Space Telescope, #HST-GO-16303		\$15,483
<i>“Fine-Tuned Search for Kilonova Emission in a Short Gamma-Ray Burst: Implications for the Progenitors, GW Sources, and r-Process Nucleosynthesis”</i>	2020–2022	
• Hubble Space Telescope, #HST-GO-15886		\$90,006
<i>“1000 Days of GW170817: A Deep Multi-Band View of the First NS Merger with HST”</i>	2021–2022	
• Hubble Space Telescope, #HST-GO-15606		\$27,331
<i>“Late-time monitoring of GW170817 Across the Electromagnetic Spectrum”</i>	2019–2020	
• Hubble Space Telescope, #HST-GO-14685		\$76,932

“Underlying Hosts or Highly-Kicked? Determining the Nature of Host-less SGRBs with HST” 2017–2019

NASA (general)

- **XMM-Newton Observatory** \$64,075
“XMM-Newton Observations of Jets in Short Gamma-ray Bursts” 2020–2022
- **XMM-Newton Observatory, #80NSSC18K0189** \$57,296
“The Late-time X-ray Behavior of Short GRBs: Implications for Energetics and Rates” 2018–2021

Awards or Diversity, Equity & Inclusion Grants

- **American Physical Society, #CWC-031/PHY-1622510** \$13,250
“Conference for Undergraduate Women in Physics (CUWiP)” 2018–2019
- **NASA/Illinois Space Grant Consortium, #NNX154AAI05H** \$6,067
“Supporting a Conference for Undergraduate Women in Physics” 2018–2019
- **Research Corporation for Science Advancement Cottrell Scholars Collaborative** \$2,500
“Supporting a Conference for Undergraduate Women in Physics” 2018–2019
- **Northwestern University (various offices)** \$15,000
Mini-grants awarded in support of Northwestern’s 2019 Conference for Undergraduate Women in Physics, from the Office of the Provost, Weinberg College of Arts & Sciences, The Graduate School, Office for Research, and the Women’s Center. 2018–2019

PRINCIPAL INVESTIGATOR TELESCOPE PROPOSALS

Career total: **63** telescope proposals won through internal, national and/or international competitions.

List of Proposals:

† indicates that the proposal PI is student or post-doctoral associate/collaborator of the Fong group.

- **Very Large Array 2022A, 4.5 hr** 2022
“Constraining the Environment of a Remarkable Repeating Fast Radio Burst”
- † **Very Large Array 2022A, 4.5 hr (PI: T. Eftekhari)** 2022
“The First High Frequency Search for Persistent FRB Counterparts”
- † **Hubble Space Telescope Cycle 29 Mid-Cycle, GO-16877 (PI: A. Mannings)** 2022
“Determining the host sub-structure and local environment characteristics of highly-active FRB 20201124A”
- **Gemini-South Observatory 2022A, 7.8 hr, GS-2022A-Q-112** 2022
Gemini-North Observatory 2022A, 7.9 hr, GN-2022A-Q-110
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- † **Chandra X-ray Observatory Cycle 23 Director’s Time Cycle 23, 40 ksec, Proposal 22408825 (PI: G. Schroeder)** 2022
“The wide angle outflow of SGRB 210726A”
- † **Chandra X-ray Observatory Cycle 23 Director’s Time Cycle 23, 40 ksec, Proposal 22408828 (PI: A. Rouco Escorial)** 2022
“Tracking the X-ray Emission of the Remarkable SGRB 211106A”
- **Chandra X-ray Observatory Cycle 23 Cycle 23, 340 ksec, Proposal 23510318** 2022
“The Next Breakthroughs Community Program: Chandra-VLA Observations of Compact-Object Mergers”

- **Chandra X-ray Observatory** Cycle 23, 65 ksec, Proposal 23400449 2022
“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”
- † **Chandra X-ray Observatory** Cycle 23, 55 ksec, Proposal 23700039 (PI: T. Eftekhari) 2022
“Toward an FRB Progenitor: Elucidating the FRB-AGN Connection with Chandra”
- † **Chandra X-ray Observatory** Cycle 23, 120 ksec, Proposal 23400537 (PI: A. Rouco Escorial) 2022
“Cooling emission from highly magnetized neutron-star crusts”
- **Gemini-South Observatory** 2021B, 8.0 hr, GS-2021B-Q-111 2021
Gemini-North Observatory 2021B, 6.2 hr, GN-2021B-Q-109
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- **Southern Astrophysical Research (SOAR) Telescope** 2021B, 15 hr, NOIRLab2021B-151 2021
“Navigating the Environments of Fast Radio Burst Host Galaxies with SOAR”
- **Very Large Array** 2022A+B, 40 hr 2022
“The Next Breakthroughs Community Program: Chandra-VLA Observations of Compact-Object Mergers”
- † **Nuclear Spectroscopic Telescope Array (NuSTAR)** Cycle 7, 20 ksec (PI: C. Kilpatrick) 2021
“A Search for the First X-ray Counterpart to an Extragalactic FRB”
- **Very Large Array** 2021B+2022A, 19 hr 2021
“Elucidating the Explosion Properties of Cosmological Short GRBs with the VLA”
- † **Very Large Array** 2021B, 10 hr (PI: G. Schroeder) 2021
“Uncovering Evidence for the Birth of a Magnetar in SGRB 200522A”
- **Chandra X-ray Observatory** Cycle 22, 65 ksec, Proposal 22400461 2021
“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”
- **Gemini-South Observatory** 2021A, 7.6 hr, GS-2021A-Q-112 2021
Gemini-North Observatory 2021A, 7.6 hr, GN-2021A-Q-109
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- † **Hubble Space Telescope** Cycle 28, Archival proposal, GO-16136 (PI: C. Kilpatrick) 2021
“Using the full power of the HST Archive to Address the Red Supergiant Problem”
- † **Keck Observatory** 2021A, 4 nights, 2021A_O316 (PI: K. Paterson) 2021
“The NU-Keck Environments of Extreme Transients Program”
- † **Las Cumbres Observatory**, 13 hr, NOAO2021A-016 (PI: C. Kilpatrick) 2021
“Constraining Supernova Progenitor Systems with the LCO Global Telescope Network”
- † **Southern Astrophysical Research (SOAR) Telescope** 2021A, 4 hr, 2021A-N0132 (PI: C. Kilpatrick) 2021
“Mapping the Explosion Site of a Short Gamma-ray Burst with SOAR”
- **Southern Astrophysical Research (SOAR) Telescope** 2021A 5 hr, NOAO-2021A-138 2021
“Navigating the Environments of Fast Radio Burst Host Galaxies with SOAR”
- **Chandra X-ray Observatory** Cycle 21, 65 ksec, Proposal 21400447 2020
“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”
- **Chandra X-ray Observatory** Cycle 21, 40 ksec, Proposal 21400435 2020
“Revisiting the Mysterious X-ray Excess of SGRB 130603B”
- **Gemini-South Observatory** 2020B, 7.6 hr, GS-2020B-Q-114 2020
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- † **Gemini-South Observatory** 2020B, 3 hr, GS-2020B-Q-229 (PI: K. Paterson) 2020

- “Uncovering a high redshift population of short gamma-ray bursts”*
- † **Gemini-South**, 3 hr, GS-2020B-Q-121 (PI: C. Kilpatrick) 2020
“Identifying the Progenitors of Astrophysical Transients”
 - † **Las Cumbres Observatory**, 21 hr, NOAO2020B-009 (PI: C. Kilpatrick) 2020
“Constraining Supernova Progenitor Systems with the LCO Global Telescope Network”
 - † **Neil Gehrels Swift Observatory** (joint with XMM-Newton), 65 ksec (PI: A. Rouco Escorial) 2020
“The quest for Be/X-ray transients: how do highly magnetized neutron stars cool?”
 - † **Southern Astrophysical Research (SOAR) Telescope**, 2020A, 4 hr, 2020B-N0198 (PI: C. Kilpatrick) 2020
“Mapping the Explosion Site of a Short Gamma-ray Burst with SOAR”
 - **Very Large Array**, 17.5 hr, 20B-057 2020
“Elucidating the Explosion Properties of Cosmological Short GRBs with the VLA”
 - † **XMM-Newton Observatory** AO-20, 70 ksec, Proposal 088335 (PI: A. Rouco Escorial) 2020
“The quest for Be/X-ray transients: how do highly magnetized neutron stars cool?”
 - **Atacama Large Millimeter Array** Cycle 7, 6.3 hr, 2019.1.00863.T 2019
“Unveiling the First Short Gamma-ray Burst Millimeter Afterglows with ALMA”
 - **Chandra X-ray Observatory** Cycle 20 Large Program, 620 ksec, Proposal 20500312 (co-PI’s: D. Haggard, R. Margutti) 2019
“The Next Breakthroughs: Chandra-VLA Observations of Neutron Star Mergers”
 - **Chandra X-ray Observatory** Cycle 19, 200 ksec, Proposal 20500299 (co-PI: R. Margutti) 2019
“Late-time monitoring of GW170817 across the electromagnetic spectrum”
 - **Gemini-South Observatory** 2019A, 5.1 hr, GS-2019A-Q-124 2019
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
 - † **Gemini-South Observatory** Fast-turnaround, 1.5 hr, GS-2019A-FT-107 (PI: K. Paterson) 2019
“Determining the redshift of GRB181123B”
 - **Hubble Space Telescope** Cycle 24, 13 orbits, GO-15886 2019
“1000 Days of GW170817: A Deep Multi-Band View of the First Neutron Star Merger with HST”
 - **Hubble Space Telescope** (joint with Chandra), 6 orbits, GO-15606 (co-PI: R. Margutti) 2019
“Late-time monitoring of GW170817 across the electromagnetic spectrum”
 - † **Keck Observatory** 2019A, 3.5 nights, 2019A_O329 (PI: K. Paterson) 2019
“The NU-Keck Environments of Extreme Transients Program”
 - † **Keck Observatory** 2019B, 0.5 nights, 2019B_O295 (PI: K. Paterson) 2019
“The Infant Stages of Explosive Transients with Keck ToO Observations”
 - † **Nuclear Spectroscopic Telescope Array (NuSTAR)** DDT, 50 ksec (PI: A. Rouco Escorial) 2019
“Observation of GX 304-1 in its cold-disc accretion stage”
 - **Very Large Array**, 17.5 hr, 19B-217 2019
“Elucidating the Explosion Properties of Cosmological Short GRBs with the VLA”
 - **Very Large Array** (joint with Chandra), 10 hr, SK0299 (co-PI: R. Margutti) 2019
“Late-time monitoring of GW170817 across the electromagnetic spectrum”
 - † **Very Large Array** 2019A, 46 hr, 19B-258 (PI: K. Alexander) 2019
“Pinpointing the Radio Emission from NS Mergers in LIGO/Virgo’s 3rd Observing Run”

- **XMM-Newton Observatory** AO-19, 89 ksec, Proposal 086286 2019
“XMM-Newton Observations of Jets in Short Gamma-ray Bursts”
- **Atacama Large Millimeter Array** Cycle 6, 6.3 hr, 2018.1.01204.T 2018
“Unveiling the First Short Gamma-ray Burst Millimeter Afterglows with ALMA”
- **Chandra X-ray Observatory** Cycle 19, 75 ksec, Proposal 19400228 2018
“Tracking the Evolution of an X-ray Counterpart to a Gravitational Wave Event”
- **Chandra X-ray Observatory** Cycle 19, 65 ksec, Proposal 19400201 2018
“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”
- **Gemini-South Observatory** 2018A, 7.9 hr, GS-2018A-Q-127 2018
Gemini-North Observatory 2018A, 7.9 hr, GN-2018A-Q-121
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- **Gemini-South Observatory** Fast-turnaround, 1.8 hr, GS-2018A-FT-110 2018
“Confirming a Distant Short Gamma-ray Burst with Gemini Near-Infrared Spectroscopy”
- **Gemini-South Observatory** 2018B, 5.0 hr, GS-2018B-Q-112 2018
Gemini-North Observatory 2018B, 5.0 hr, GN-2018B-Q-117
“Probing the Properties of Neutron Star Mergers: Rapid Observations of Short Gamma-ray Bursts”
- **Gemini-South Observatory** Fast-turnaround, 1 hr, GS-2018B-FT-205 2018
“Determining the Origin of Optical Emission from the SGRB 180727A”
- **Keck Observatory** 2018B, 0.5 nights, 2018B_NW249 2018
“The Infant Stages of Explosive Transients with Keck ToO Observations”
- **Very Large Array**, 18 hr, 18B-168 2018
“The Remnants of Neutron Star Mergers: A Late-time Survey of Nearby Short GRBs”
- **Chandra X-ray Observatory** Cycle 18, 75 ksec, Proposal 18400052 2017
“Tracking the Evolution of an X-ray Counterpart to a Gravitational Wave Event”
- **Gemini-South Observatory** 2017B, 4.9 hr, GS-2017B-Q-12 2017
“Probing the Properties of Compact Object Mergers: Rapid Observations of Short Gamma-ray Bursts”
- **Very Large Array**, 19 hr, 17A-218 2017
“Uncovering the Explosion Properties of Short Gamma-ray Bursts with the VLA”
- † **Very Large Array**, 17 hr, 17B-201 (PI: C. Kilpatrick) 2017
“Late-Time Radio Emission from Type II_n/II-L Supernovae with the VLA”
- **Hubble Space Telescope** Cycle 24, 12 orbits, GO-14685 2016
“Underlying Hosts or Highly-Kicked? Determining the Nature of Host-less Short Gamma-ray Bursts with HST”
- **XMM-Newton Observatory** AO-15, 89 ksec, Proposal 07822501 2015–2018
“The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates”

PRESS RELEASES

4 press releases resulting from work led by PI or research group members as a faculty member at Northwestern. The combined releases have hit every continent except Antarctica.

1. **“Hubble Tracks Down Fast Radio Bursts to Galaxies’ Spiral Arms”** 5/2021
Based on Mannings, A. G.; Fong, W.; Simha, S. et al. 2021. [Link to paper]

- Led by NASA/Space Telescope Science Institute, jointly released by [Northwestern News](#) and University of California, Santa Cruz
 - **120** media mentions including [CNN](#), [CBS News](#)
2. **“NASA’s Hubble Sees Unexplained Brightness from Colossal Explosion”** 11/2020
*Based on **Fong, W.**; Laskar, T.; Rastinejad, J. et al. 2021. [\[Link to paper\]](#)*
 - Led by NASA/Space Telescope Science Institute, jointly released by Keck Observatory and Northwestern News
 - Result featured on Northwestern University homepage and [NSF Research News Highlight](#)
 - **121** media mentions including [Forbes](#), [CNET](#), [Smithsonian Magazine](#), [LiveScience](#)
 3. **“Gemini Observatory’s Quick Reflexes Capture Fleeting Flash”** 7/2020
Based on Paterson, K.; Fong, W.; Nugent, A. E. et al. 2020. [\[Link to paper\]](#)
 - Led by NSF’s Optical and Infrared Astronomy Lab, jointly released by Keck Observatory and Northwestern News
 - Subject of NSF’s OIRLab [Mirror Magazine](#) highlighting best Gemini results of 2020
 - **93** media mentions including [CNN](#), [CNET](#), United Press International (UPI), MSN, and IFL Science
 4. **“Afterglow sheds light on the nature, origin of neutron star collisions”** 9/2019
*Based on **Fong, W.**; Blanchard, P. K.; Alexander, K. D. et al. 2019. [\[Link to paper\]](#)*
 - Led by Northwestern News
 - **34** media mentions

INVITED PRESENTATIONS

Invited research review talks at conferences, departmental seminars and colloquia.

Career total: **76** invited presentations

List of Presentations:

- Colloquium at University of California Santa Cruz, Santa Cruz, CA Fall 2022
- Colloquium at University of California San Diego, San Diego, CA 2/2022
- Colloquium at University of California Los Angeles, Los Angeles, CA 2/2022
- Colloquium at Kavli Institute for the Physics and Mathematics of the Universe (IPMU), Tokyo, Japan (virtual) 1/2022
- Review talk at NASA *Swift* Observatory Senior Review Strategy Session (virtual) 11/2021
- Review talk at Dawn VI meeting on Next Generation Gravitational Wave Observatories (virtual) 10/2021
- Review talk at 238th American Astronomical Society LAD Meeting (virtual) 6/2021
- Seminar at Center for Astrophysics | Harvard & Smithsonian (virtual) 2/2021
- Review talk at 237th American Astronomical Society Meeting (virtual) 1/2021
- Review talk at APS Prairie Section Meeting (virtual) 11/2020
- Colloquium at University of Illinois Urbana-Champaign, Champaign, IL (virtual) 10/2020
- Colloquium at University of Washington, Seattle, WA (virtual) 10/2020
- Review talk at European Astronomy Society Symposium, Leiden, Netherlands (virtual) 7/2020
- Review talk at American Physical Society April Meeting (virtual) 4/2020
- Review talk at Astrophysics of Fast Radio Bursts, Flatiron Institute, NYC 2/2020
- Colloquium at Michigan State University, East Lansing, MI 1/2020

- Review talk at ESO's Extragalactic Explosive Universe, Garching, Germany 9/2019
- Moderator at Hot-wiring the Transient Universe, Evanston, IL 8/2019
- Review talk at the MMT 40th Anniversary Symposium, Tucson, AZ 5/2019
- Seminar at the Institute for Advanced Study, Princeton, NJ 5/2019
- Colloquium at University of Florida, Gainesville, FL 4/2019
- Colloquium at Dunlap Institute for Astronomy Astrophysics, Toronto, ON 3/2019
- Review talk at GW Populations, Aspen, CO 2/2019
- Colloquium at University of Rochester, Rochester, NY 2/2019
- Colloquium at Carnegie Observatories, Pasadena, CA 2/2019
- Review talk at 233rd American Astronomical Society Meeting, Seattle, WA 1/2019
- Review talk at Chinese-American Kavli Frontiers of Science, Nanjing, China 10/2018
- Seminar at Northwestern, Illinois Space Grant Program, Evanston, IL 7/2018
- Review talk at 10th Harvard-Smithsonian Sackler Conference, Cambridge, MA 5/2018
- Colloquium at University of Oklahoma, Norman, OK 5/2018
- Invited talk at Neil Gehrels Memorial Symposium, Washington, DC 5/2018
- Review talk at European Week of Astronomy and Space Science, Liverpool, UK 4/2018
- Colloquium at University of Connecticut, Storrs, CT 3/2018
- Invited talk at Hubble Fellows Symposium, Baltimore, MD 3/2018
- Moderator/session lead at 3rd PAX Workshop, State College, PA 2/2018
- Colloquium at CU Boulder, Boulder, CO 1/2018
- Panelist at AAS Multi-messenger/LIGO Special Session, National Harbor, MD 1/2018
- Review talks at Deciphering the Violent Universe, Playa del Carmen, Mexico 12/2017
- Review talk at GW170817: The First DNS Merger, KITP, Santa Barbara, CA 12/2017
- Invited talk at NASA Marshall Space Flight Center, Huntsville, AL 11/2017
- Colloquium at University of Pittsburgh, Pittsburgh, PA 11/2017
- Colloquium at Northwestern University, Evanston, IL 10/2017
- Moderator at eXtreme Matter meets eXtreme Gravity, Bozeman, MT 8/2017
- Review talk at Fifty-One Erg 2017, Corvallis, OR 6/2017
- Colloquium at Columbia University, New York City, NY 5/2017
- Colloquium at Penn State University, State College, PA 4/2017
- Colloquium at NRAO/University of Virginia, Charlottesville, VA 3/2017
- Colloquium at Steward Observatory, University of Arizona, Tucson, AZ 2/2017
- Colloquium at IfA, University of Hawaii, Honolulu, HI 2/2017
- Colloquium at University of Amsterdam, Netherlands 1/2017
- Special Seminar, Northwestern University, Evanston, IL 11/2016
- Review talk at JSI workshop, Annapolis, MD 11/2016

- Colloquium at Physics Dept, University of Arizona, Tucson, AZ 9/2016
- Talk at “Fellows at the Frontiers” conference, Evanston, IL 8/2016
- Astrophysics Seminar at CIERA, Northwestern University, Evanston, IL 5/2016
- Review talk at Sackler Conference, “The Transient Sky”, Cambridge, MA 5/2016
- TAPIR Seminar group, Caltech, Pasadena, CA 5/2016
- APS Dissertation Prize talk, Salt Lake City, UT 4/2016
- Colloquium at Steward Observatory, University of Arizona, Tucson, AZ 2/2016
- Seminar at NSSTC, Huntsville, AL 2/2016
- Seminar at University of Rochester, Rochester, NY 10/2015
- Seminar at Ohio University, Athens, OH 4/2015
- Seminar at Arizona State University, Tempe, AZ 3/2015
- Colloquium at University of Illinois, Urbana-Champaign, IL 11/2014
- Colloquium at University of Nevada, Las Vegas, NV 11/2014
- Review talk at 2nd Annual GMT Community Science Meeting, DC 10/2014
- Seminar at Joint Institute for Nuclear Astrophysics, Michigan State University 9/2014
- Review talk at “Multi-Messenger Transient Astrophysics”, KIAA, Beijing, China 5/2013
- General Colloquium at Bishop’s University, Quebec 10/2012
- Review talk at “Chirps, Mergers and Explosions”, KITP Santa Barbara, CA 8/2012
- Guest lecture for “Fundamentals of Contemporary Astronomy”, Harvard 7/2012
- Review talk at “LIGO-Virgo” telecon, MIT 6/2012
- Review talk at “General Relativity Informal Tea-Time Series”, MIT 5/2012
- Review talk at “Physics of Astronomical Transients”, Aspen Center for Physics 1/2012
- Review talk at “LIGO-Virgo” telecon, MIT 6/2011
- Review talk at “Gravitational Research Astro Informal Lunch Series”, MIT 5/2011

LEADERSHIP & PROFESSIONAL SERVICE

• Scientific Leadership and Membership Roles

Leadership and membership roles in the physics and astrophysics communities.

- **Co-leader**, Fast and Fortunate Fast Radio Burst Collaboration 2020–
International collaboration to follow fast radio bursts and their host galaxies.
- **Co-founder and co-PI**, Searches After Gravitational Waves Using Arizona Observatories (SAGUARO) Collaboration 2018–
Unique network of telescopes in pursuit of counterparts to gravitational wave events.
- **Member**, The Commensal Real-time ASKAP Fast Transients Survey 2020–
The premier discovery experiment for localizing fast radio bursts.
- **Member**, NASA StarBurst Multimessenger Pioneer 2020–
Mission concept selected in 1/2021 for the competitive NASA Astrophysics Pioneers program, membership on science team.

- **Member**, NASA STAR-X Mission Concept 2019–
NASA MIDEX Mission Concept team member.
- **External Service**
Invited positions for service external to Northwestern.
 - **Member**, Chandra Time-domain Science Working Group 2021–
 - **Panelist**, NSF Astronomy & Astrophysics Grant Review 2021–
 - **Reviewer**, Canadian Time Allocation Committee Proposal Reviewer 2021
 - **Reviewer**, Israeli Science Foundation Grant Reviewer 2021
 - **Reviewer**, NASA Review Panels, NASA and NSF Graduate or Postdoctoral Fellowships 2017–
 - **Member** of 6 Scientific Organizing Committees including Chandra Frontiers, Keck Science, 40th Anniversary of the VLA Meetings 2018–
 - **Reviewer** for Nature, Science, Astrophysical Journal Letters, Astrophysical Journal, Monthly Notices of the Royal Astronomical Society 2015–
 - **Author**, NSF’s Optical and Infrared Astronomy Lab *Mirror* Magazine feature 2021
Paterson & Fong: [“Uncovering the Population of Short Gamma-ray Bursts at \$z > 1.5\$ ”](#)
Invited feature highlighting one of four most important NSF OIRLab results in 2020.
 - **Member**, NASA Gravitational Wave-Electromagnetic Wave Task Force 2019–2020
6-person designated committee by NASA HQ, resulted in published report of NASA facility engagement over the next decade
 - **External Examiner** for University of Sydney Thesis Committee (1 student) 2020
 - **Author**, Astro-2020 White Paper, [“X-ray follow-up of extragalactic transients”](#) 2019
 - **Chair**, National Radio Astronomy Observatory Telescope Allocation Committee Panel 2016–2019
 - **Co-chair**, American Physical Society Conference for Undergraduate Women in Physics 2018–2019
 - **Member**, Chandra X-ray Observatory Telescope Allocation Committee Panel 2018
 - **Reviewer**, Swiss National Science Foundation 2017–2019
 - **Member**, Hubble Space Telescope Telescope Allocation Review Panel 2017

TEACHING & COURSE DESIGN

- **ASTRON 325/425 – Stellar Astrophysics**
Core course for upper-level undergraduates and 1st, 2nd and 3rd year PhD students
 - 25 students, Course rating: 5.27/6, Instructor rating: 5.60/6 Fall 2018
 - 19 students, Course rating: 5.43/6, Instructor rating: 5.71/6 Fall 2019
 - 21 students, Course rating: 5.80/6, Instructor rating: 5.93/6 (**taught virtually**) Fall 2020
- **ASTRON 441-0 – Advanced Topics: Time-Domain Astronomy**
New discussion-based course for 1st year PhD students
 - 9 students, Course rating: 5.75/6, Instructor rating: 6.00/6 Spring 2019
- **ASTRON 110-6 – First-Year Seminar: The Energetic and Explosive Universe**
New discussion-based course for 1st and 2nd year undergraduates
 - 15 students, Course rating: 5.10/6, Instructor rating: 5.50/6 Winter 2021
- **ASTRON 110-6-1 – First-Year Seminar: The Diverse Origins of Modern Astrophysics**
New discussion-based course for 1st and 2nd year undergraduates
 - 17 students, Course ongoing Fall 2021

ADVISING & MENTORING

- **Post-doctoral Associates**

2 post-doctoral associates as part of core research group.

- **Alicia Rouco Escorial** (X-ray observer) 2019–
gamma-ray bursts, Be/X-ray transients, fast radio bursts
- **Kerry Paterson** (optical and near-IR observer, image processing) 2018–
gravitational waves counterparts with SAGUARO, short gamma-ray bursts, cataclysmic variables

- **Post-doctoral Collaborators**

2 post-doctoral fellows for which Fong plays a mentorship role.

- **Tarraneh Eftekhari** (radio observer, CIERA Fellow) 2021–
fast radio bursts, supernovae, tidal disruption events, CMB surveys
- **Charles Kilpatrick** (optical observer, CIERA Fellow) 2020–
gravitational wave counterparts, supernova progenitors, fast radio bursts

- **Graduate Students - Advisory Role**

5 PhD students as part of core research group.

- **Anya Nugent** (4th year, Claire Booth Luce Fellow) 2018–
modeling of short gamma-ray burst host galaxies to place constraints on the evolution of neutron star binaries and mergers
- **Genevieve Schroeder** (4th year) 2018–
exploring how radio observations of long and short gamma-ray bursts can be used as probes of star formation and neutron star properties
- **Jillian Rastinejad** (3rd year) 2019–
quantifying the outflow properties of neutron star mergers with optical and near-infrared observations
- **Alexa Gordon** (2nd year) 2020–
modeling the host galaxy environments of well-localized fast radio bursts to determine their progenitors
- **Yuxin (Vic) Dong** (1st year, NSF Graduate Research Fellow) 2021–
multi-wavelength counterpart searches to fast radio bursts

- **Graduate Students - Co-advisory Role**

3 PhD students co-advised on projects which resulted in publications toward their PhD theses.

- **Alexandra Mannings** (3rd year at UC Santa Cruz); Advisor: J. X. Prochaska 2020–
exploring the local environments of fast radio bursts with high-resolution Hubble Space Telescope imaging
- **Michael Zevin** (now a Hubble Fellow at U. Chicago); Advisor: V. Kalogera 2018–2020
forward modeling of neutron star binaries to determine the progenitor properties of highly-offset short gamma-ray bursts
- **Shi (Claire) Ye** (PhD student at Northwestern); Advisor: F. Rasio 2018–2020
determining the rates of neutron star mergers in globular clusters using state-of-the-art simulations

- **Undergraduate Students**

12 undergraduate students advised within the core research group.

- **Olivia Guerra** (now a sophomore at Northwestern) 2021–
building a pipeline for EM counterparts to gravitational wave events

- **Saarah Hall** (REU student, now a senior at UPenn) Summer 2021
building a pipeline for EM counterparts to gravitational wave events
- **Jason Vazquez** (REU student, now a senior at UIUC) Summer 2021
HST data analysis of supernova progenitors
- **David Velasco** (now a senior at DePaul) 2021
building a pipeline for rapid optical and infrared data reduction
- **Yuxin (Vic) Dong** (Illinois Space Grant Fellow; now an **NSF Graduate Fellow** at NU) 2020–2021
modeling of short gamma-ray burst and fast radio burst host galaxies
- **Maura Lally** (Senior thesis awardee; now a **NSF Graduate Fellow** at Cornell) 2018–
modeling of dark gamma-ray burst host galaxies
- **Armaan Goyal** (now a PhD student at Indiana University) 2019–2020
analysis of gamma-ray burst host galaxy spectroscopy
- **Sarah Popp** (CIERA REU; now a PhD student at Indiana University) Summer 2020
X-ray observations of short gamma-ray bursts
- **Owen Eskandari** (LSST Fellow; now a senior at Dartmouth) 2018–2020
training machine learning algorithms for gravitational wave event searches
- **Dylan Cornish** (Illinois Space Grant Fellow; now a data systems analyst) 2018–2020
X-ray observations of short gamma-ray bursts
- **Carlo Esquivia** (CIERA REU; now a financial analyst) Summer 2018
modeling of gravitational wave counterpart afterglow light curves
- **Susana Torres-Londono** (now an **NSF Graduate Fellow** at Caltech) Summer 2018
analysis of Hubble Space Telescope host galaxy observations
- **High School Students**
2 high school students as part of the CIERA “REACH” High School Program.
 - **Joshua Ahn** (now an undergraduate at University of Chicago) 2019
inspection and analysis of template images for gravitational wave survey SAGUARO
 - **Stevia Ndoe** (now an undergraduate at New York University) 2019
identifying optical transients in gravitational wave survey SAGUARO data

DEPARTMENT, COLLEGE & UNIVERSITY SERVICE

- **Northwestern Departmental Service**
Service internal to the Department of Physics & Astronomy or CIERA.
 - **Member**, Physics & Astronomy Faculty Search Committee 2021–
 - **Chair**, CIERA Astrophysics Seminar Committee 2020–
 - **Member**, CIERA Undergraduate Recruitment Committee 2020–
 - **Member**, Astronomy Graduate Admissions Committee 2021–
 - **Member**, Astronomy Faculty Search Committee 2021
 - **Coordinator**, CIERA Remote Observing Room 2019–
 - **Member**, PhD Candidacy or Thesis Committees (6 students) 2018–
 - **Chair**, CIERA Social Justice Training Task Force 2020
 - **Member**, Astronomy Graduate Admissions Committee 2020
 - **Chair**, CIERA Telescope Allocation Committee 2019–

- **Northwestern Representative**, Keck Scientific Steering Council 2018–2020
- **Member**, Astronomy Graduate Admissions Committee 2019
- **Member**, CIERA Fellowship Postdoctoral Search Committee 2018

COMMUNITY ENGAGEMENT

- Keck Observatory Virtual Astronomy Talk (virtual, 250-person attendance) 9/2020
- CIERA Research Experience for Undergraduates Seminar (virtual) 8/2020
- CIERA High School Summer Research Program Seminar, Evanston, IL 7/2019
- STEM Superstars Lecture for Project Scientist, Irvine, CA 6/2018
- Panelist at The Chicago Network panel on GW170817, Evanston, IL 5/2018
- Panelist at Peering into the Cosmic Maelstrom, Northwestern, Evanston, IL 11/2017
- Public talk at Astronomy on Tap, Evanston, IL 11/2017
- Public Lecture at Lake County Astronomical Society, Ingleside, IL 10/2017
- Public Evening Lecture, Steward Observatory, Tucson, AZ 4/2017
- Huachuca Astronomy Club Meeting, Cochise College, Sierra Vista, AZ 8/2016