ALESSANDRA CORSI, Ph.D.

Curriculum vitae et studiorum – Last updated: May 25, 2022

CONTACT INFORMATION

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EDUCATION AND ACADEMIC POSITIONS

- 2003: Laurea in Physics cum laude, University of Rome Sapienza.
- 2007: Ph.D. in Astronomy, University of Rome Sapienza.
- 2007 2008: Post-doc, National Inst. for Astrophysics (Rome, Italy), University of Rome Sapienza.
- 2008 2010: Post-doc, University of Rome Sapienza, Pennsylvania State University.
- 2010 2012: Post-doc, California Institute of Technology.
- 2012 2014: Assistant Professor of Physics, The George Washington University.
- 2014 2018: Assistant Professor of Physics, Texas Tech University.
- 2016 2018: Honorary Adjunct Assistant Professor of Math. and Stat., Texas Tech University.
- 2018 present: Associate Professor of Physics, Texas Tech University.

SUMMARY OF INTERESTS, ACTIVITIES, AND ACCOMPLISHMENTS

- Research interests and leadership roles: I work on time-domain multi-messenger astronomy. I have vast experience with radio observations of astrophysical transients, and follow-up of gravitational wave (GW) events. My expertise includes X-ray observations and optical photometry. I also work on detection algorithms for GW data, and semi-analytical models for highly-magnetized neutron stars. I play multiple key roles across the astronomy and gravitational physics communities.
- Honors and awards: I am a Fellow of the APS; my awards include a New Horizons Prize in Physics (Breakthrough Foundation); a TAMEST Edith and Peter O'Donnell award in Science; an NSF CAREER award; a L'Oreal-UNESCO award for Women in Science.
- Publications: Co-authored $\gtrsim 280$ peer-reviewed journal articles; h-index: 93 (as of 05/2022).
- Media communications: I have experience interviewing with journalists ranging from tiny local newspapers to international documentary production teams for public television. In 2017, I reported on the discovery of the radio afterglow of GW170817 at the National Press Club in Washington D.C.
- Research funding: I have secured ≈ 1.7 million USD total as Principal Investigator via grants of the National Science Foundation, and NASA (*Swift* and *Chandra* GI programs).
- Observing proposals: I have secured $\approx 850 \, \text{hrs}$ total on radio observing facilities (Karl G. Jansky VLA and ALMA) as Principal Investigator.
- Conference talks, seminars, colloquia, and lectures 31 invited colloquia/seminars; 38 invited talks at conferences; 3 invited lectures.
- Research supervision: Primary research advisor of 4 post-docs; 6 graduate students; 20 undergraduate students; 3 high-school students.
- Diversity, equity, and inclusion: I lead several educational initiatives involving minority serving institutions (TTU-RADIAL/NINE); I give public talks in small and large venues specifically targeting minorities.
- Public Outreach: I have experience engaging the general public and students at all levels (including high school and age 50+ seniors), and have partnered with local schools and community.
- **Teaching**: My teaching experience includes large general education Astronomy courses; advanced undergraduate and graduate level Astrophysics and Physics courses; Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP).
- Service to profession and university: I routinely serve on award/conference organization/time allocation committees, and grant review panels; and as referee for several major astronomy journals; I have experience chairing several departmental university committees.

PROFESSIONAL LEADERSHIP ROLES AND MEMBERSHIPS

- Cosmic Explorer: Management team member as multi-messenger science liaison (2022-present); consortium member (2020-present).
- Rubin LSST: Users Committee member (2022-present); CEC (International in-kind Contribution Evaluation Committee) alternate member and chair of the follow-up sub-committee (2021-present); TVS collaboration member (2021-present).
- LIGO Scientific Collaboration (LSC): Burst Review Committee co-chair (2020-present); Burst Benchmark Committee member (2022-present); Program Committee member (2018-2020); Publication & Presentation Committee co-chair (2016-2018).
- National Radio Astronomy Observatory (NRAO): VLA/VLBA to ngVLA Transition Advisory Group (TAG) co-chair (2022-present); NRAO/GBO Users Committee member (2020-present); CASA Users Committee member (2019-present).
- **JAGWAR** (Jansky VLA Mapping of Gravitational Wave Bursts as Afterglows in the Radio) cochair (2019-present).
- Laser Interferometer Space Antenna (LISA): Consortium associate member (2020-present).
- Palomar Transient Factory / Zwicky Transient Facility (PTF/ZTF): Collaboration member (2010-present).
- Global Relay of Observatories Watching Transients Happen (GROWTH): Member (2015-2020).
- Virgo Collaboration: Member (2007-2010).
- American Physical Society (APS): Member (2012-present); Division of Astrophysics, Executive Committee deputy treasurer (2021-present); Division of Gravitational Physics, Executive Committee member-at-large (2019-2022).
- American Astronomical Society (AAS): Member (2013-present).

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HONORS, AWARDS, AND SCHOLARSHIPS

Individual Honors and Awards

- New Horizons in Physics Prize of the Breakthrough Foundation "for leadership in laying foundations for electromagnetic observations of sources of gravitational waves, and leadership in extracting rich information from the first observed collision of two neutron stars" (2022).
- President's Excellence in Research Professorship, Texas Tech University (since 2020).
- 2020 SN 10: Scientists to Watch list by Science News (2020).
- Edith and Peter O'Donnell Award in Science from TAMEST (The Academy of Medicine, Engineering and Science of Texas) "for her paradigm-shifting research on the merger of stars and black holes" (2020).
- Fellow of the APS "for major contributions to the discovery of both gravitational wave sources and their electromagnetic counterparts" (since 2019).
- NSF Early CAREER Awardee (2015-2021).
- Fellow of the Research Corporation for Science Advancement (Scialog) (TDA, 2015-2016).
- Distinguished Ph.D. scholar award, Rome University Sapienza Ph.D. program 30th anniversary (2014).
- Distinguished invitee of the President of the Italian Republic Prof. Giorgio Napolitano, women's day celebration at the Quirinale (2009).
- Italian l'Oréal-UNESCO National Awardee "For Women in Science" (2008).

Team Awards (as part of the LIGO Scientific Collaboration)

- Einstein Medal (2017).
- Princess of Asturias Award for Technical and Scientific Research (2017).
- AAS Bruno Rossi Prize for high-energy astrophysics (2017).
- UK Royal Astronomical Society Group Achievement Award in Astronomy (2017).
- Gruber Cosmology Prize (2016).
- Special Breakthrough Prize in Fundamental Physics (2016).

Scholarships

- Albert Einstein Institute, Max Planck (Hannover, Germany) 1 month visiting scholarship (2010).
- Penn State Institute for Gravitation and the Cosmos 1 month visiting scholarship (2009).
- Angelo Della Riccia Foundation post-doctoral scholarship (2009).
- Angelo Della Riccia Foundation post-doctoral scholarship (2008).
- INFN scholarship for graduate students (2006).
- INFN (Italian National Institute for Nuclear Physics) scholarship for graduate students (2005).

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PUBLICATIONS

- Co-authored more than 280 peer-reviewed journal articles.
- h-index: 93 (as of 05/2022).

Publication record as returned by NASA/ADS or Google Scholar can be accessed via the following links*:

- Link to NASA ADS list of refereed papers
- Link to Google Scholar entry

Selected Refereed Journal Articles

- Balasubramanian, Corsi, Mooley et al. Continued radio observations of GW170817 3.5 years postmerger. Astrophysical Journal Letters, 914:L20, 2021 (Note: Paper led by my graduate student) – NASA ADS link
- 2. **Corsi**, Hallinan, Lazzati et al. An Upper Limit on the Linear Polarization Fraction of the GW170817 Radio Continuum. **Astrophysical Journal Letters**, 861:L10, 2018 NASA ADS link
- 3. Hallinan, Corsi, Mooley, Hotokezaka et al. A radio counterpart to a neutron star merger. Science, 358:1579, 2017 (Note: Hallinan and Corsi share first authorship on this paper) NASA ADS link
- 4. LSC and Virgo Collaboration. Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817. **Astrophysical Journal Letters**, 851:L16, 2017 (**Note: I contributed substantially to this paper as a memebr of the paper writing team**) NASA ADS link
- 5. LSC and Virgo Collaboration, Fermi Gamma-Ray Burst Monitor, INTEGRAL. Gravitational Waves and Gamma-rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A. Astrophysical Journal Letters, 848:L13, 2017 (Note: I contributed substantially to this paper as a member of the LVC paper review team) NASA ADS link
- 6. LSC and Virgo Collaboration, et al. Multi-messenger Observations of a Binary Neutron Star Merger. Astrophysical Journal Letters, 848:L12, 2017 (Note: I contributed substantially to this paper by providing the radio data) NASA ADS link

^{*}These links select also some papers from another A. Corsi. They are not about astronomy so they are easy to identify.

- 7. Coyne, **Corsi**, and Owen. Cross-correlation method for intermediate-duration gravitational wave searches associated with gamma-ray bursts. **Physical Review D**, 93:104059, 2016 (**Note: Paper led by my graduate student**) NASA ADS link
- 8. **Corsi**, Gal-Yam, Kulkarni et al. Radio Observations of a Sample of Broad-line Type Ic Supernovae Discovered by PTF/IPTF: A Search for Relativistic Explosions. **Astrophysical Journal**, 830:42, 2016 NASA ADS link
- 9. **Corsi**, Ofek, Gal-Yam et al. A Multi-wavelength Investigation of the Radio-loud Supernova PTF11qcj and its Circumstellar Environment. **Astrophysical Journal**, 782:42, 2014 NASA ADS link
- 10. **Corsi**, Ofek, Gal-Yam et al. Evidence for a Compact Wolf-Rayet Progenitor for the Type Ic Supernova PTF10vgv. **Astrophysical Journal Letters**, 747:L5, 2012 NASA ADS link
- 11. LSC and Virgo Collaboration, et al. Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts. Astronomy & Astrophysics, 539:124, 2012 (Note: I led the Palomar Transient Factory contribution to this paper) NASA ADS link
- 12. **Corsi** and Owen. Maximum gravitational-wave energy emissible in magnetar flares. **Physical Review D**, 83:104014, 2011 NASA ADS link
- 13. Corsi, Guetta, Piro. High-energy Emission Components in the Short GRB 090510. Astrophysical Journal, 720:1008, 2010 NASA ADS link
- 14. **Corsi** and Mészáros. Gamma-ray Burst Afterglow Plateaus and Gravitational Waves: Multi-messenger Signature of a Millisecond Magnetar? **Astrophysical Journal**, 702:1171, 2009 NASA ADS link
- 15. Virgo Collaboration. Search for gravitational waves associated with GRB 050915a using the Virgo detector. Classical and Quantum Gravity, 25:225001, 2008 (Note: I am the corresponding author for this paper) NASA ADS link

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SELECTED MEDIA COMMUNICATIONS

- Interviewee, documentary movie on GW170817, NHK Japanese Public TV (2018).
- Invited panel member, Discovery of GW170817, USA National Press Club (2017).
- Interviewee, TTU "Communicator in a Cart" (2017).
- Interviewee, Radio discovery of GW170817, Newsweek (2017).
- Interviewee, Radio discovery of GW170817, NRAO Press Release (2017).
- Interviewee, Radio discovery of GW170817, Optics and Photonics (2017).
- Interviewee, Radio discovery of GW170817, Nature News (2017).
- Interviewee, Radio discovery of GW170817, Science (2017).
- Interviewee, Radio discovery of GW170817, Physics Today (2017).
- Interviewee, Radio discovery of GW170817, Lubbock Avalanche Journal (2017).
- Interviewee, Radio discovery of GW170817, The Washington Post (2017).
- Interviewee, LIGO discovery of gravitational waves, **Nature News** (2016).
- Interviewee, LIGO discovery of gravitational waves, **APS News** (2016).
- Interviewee, LIGO discovery of gravitational waves, **Houston Chronicle** (2016).
- Interviewee, LIGO discovery of gravitational waves, Lubbock Avalanche Journal (2016).
- Interviewee, LIGO discovery of gravitational waves, KCBD TV news (2016).
- Radio Spot, LIGO discovery of gravitational waves, **KTTZ radio** (2016).
- Interviewee, TTU Arts and Sciences campaign (2016).
- Interviewee, "In-course Discoveries", PANORAMA magazine (Ed. Mondadori) (2009).
- Interviewee, "New Excellences", ELLE magazine (Ed. Hachette Rusconi) (2009).

• Interviewee, research accomplishments, Italian National Radio Tre station (2009).

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SELECTED (PI ONLY) APPROVED RESEARCH GRANTS

Note: ≈ 1.7 million USD total as Principal Investigator

- 1. NASA/Swift Cycle 18 GI, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (40 kUSD; 2022-2023).
- 2. NASA/Swift Cycle 17 GI, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (40.7 kUSD; 2021-2022).
- 3. **NSF-Gravity PHY-2011608**, "Unmasking the Remnants of Gamma-Ray Bursts in the Era of Gravitational Wave Astronomy" (**262.5** kUSD; 2020-2023).
- 4. **NSF AST-1907975**: "WoU-MMA: Collaborative Research: Combining Theory with Observations to Unlock the Multi-Messenger Physics of Compact Binary Mergers" (268.6 kUSD; 2019-2022).
- 5. NASA/Swift Cycle 16 GI, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (37.3 kUSD; 2020-2021).
- 6. **NSF-CAREER AST-1455090**, "CAREER: Radio and gravitational-wave emission from the largest explosions since the Big Bang" (**720 kUSD**; 2015-2021).
- 7. Chandra Cycle 19 GI, "Unraveling the physics of engine-driven SNe with ZTF+Chandra" (24 kUSD; 2018-2019).
- 8. Chandra Cycle 18 GI, "Chandra late-time observations of PTF11QCJ: CSM-interacting SN or off-axis GRB?" (35.8 kUSD; 2017-2018).
- 9. **Chandra DDT #17508570**, "iPTF17cw: A relativistic broad-lined type Ic supernovae discovered by iPTF" (**7.4 kUSD**; 2017-2018)
- 10. **ngVLA Community Study**, "Cosmic Explosions and Collisions in the ngVLA Era," NSF/NRAO (5.7 kUSD; 2016-2017).
- 11. NASA/Swift Cycle 12 GI, "Joint iPTF-VLA-Swift follow-up of aLIGO events" (39 kUSD; 2016-2017).
- 12. NASA/Swift Cycle 11 GI, "Unraveling the missing link between 1998bw-like SNe and GRBs" (40 kUSD; 2015-2016).
- 13. NASA/Swift Cycle 10 GI, "Unraveling the missing link between 1998bw-like SNe and GRBs" (30 kUSD; 2014-2015).
- 14. **NSF-Gravity PHY-1307623**, "Gravitational waves, gamma-ray bursts, and the multi-messenger exploration of the transient sky" (**126 kUSD**; 2013-2016).
- 15. Chandra DDT #501797, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (12.2 kUSD; 2011-2012).
- 16. Chandra DDT #501794, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (7 kUSD; 2011-2012).
- 17. Chandra DDT #501793, "Supernova PTF 11qcj: first discovery of a radio luminous Ic SN interacting with an He shell?" (10.1 kUSD; 2011-2012).
- 18. Spitzer proposal, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (2 kUSD; 2011-2012).
- 19. NASA/Swift Cycle 7 GI, "Millimeter and optical follow-up of Swift Gamma-Ray Bursts: reverse shock emission and high redshift events" (15 kUSD; 2011-2012).

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SELECTED (PI ONLY) APPROVED OBSERVING PROPOSALS

Note: $\approx 850\,\mathrm{hrs}$ allocated on the Karl G. Jansky VLA and ALMA as Principal Investigator

- VLA/22B-235, "Jansky VLA mapping of Gravitational Waves as Afterglows in Radio (JAGWAR)" (156 hrs).
- 2. VLA/22A-394, "Jansky VLA mapping of Gravitational Waves as Afterglows in Radio (JAGWAR)" (80 hrs).
- 3. SH0105, "A search for BL-Ic SNe with X-ray afterglows using ZTF+Swift" (9 hrs).
- 4. VLA/20B-472, "Long-term radio monitoring of GW170817: An emerging kilonova afterglow?" (14 hrs).
- 5. VLA/20B-149, "A VLA quest for relativistic explosions in the era of ZTF II" (48 hrs).
- 6. VLA/20A-568, "VLA follow-up of the nearby BL-Ic supernova ZTF20aazkjfv (SN2020jqm)" (10 hrs).
- 7. **SG0117**, "A search for BL-Ic SNe with X-ray afterglows using ZTF+Swift" (6 hrs).
- 8. VLA/19B-230, "A VLA+ZTF Systematic Quest for Relativistic Explosions" (20 hrs).
- 9. VLA/19A-094, "A radio polarization study of supernova PTF11qcj" (4.75 hrs).
- 10. VLA/18B-204, "Long-term radio monitoring of GW170817 with the Jansky VLA" (28 hrs).
- 11. VLA/18A-457, "Continued radio monitoring of GW170817 with the JVLA" (17.5 hrs).
- 12. VLA/18A-240, "Late-time VLA follow-up of the relativistic supernova iPTF17cw" (3.5 hrs).
- 13. VLA/18A-176, "A VLA+ZTF systematic quest for relativistic BL-Ic supernovae" (40 hrs).
- 14. VLA/17B-428, "Unveiling the radio signature of a relativistic SN associated with GRB 171205A" (7 hrs).
- 15. VLA/17A-237, "Radio follow-up of GWs during Advanced LIGO O3" (45 hrs).
- 16. **ALMA/2016.1.00950.T**, "Unraveling the physics of broad-line type Ic supernovae with ALMA" (4.6 hrs).
- 17. VLA/16B-044, "Discovering GBM GRB Afterglows with iPTF+VLA" (10.5 hrs).
- 18. **VLA/16B-043**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (18 hrs).
- 19. **ALMA/2015.1.00910.T**, "Unraveling the physics of broad-line type Ic supernovae with ALMA" (5.3 hrs).
- 20. VLA/16A-206, "Radio counterparts to gravitational waves in the Advanced LIGO Era" (36 hrs).
- 21. VLA/15B-288, "Probing the magnetar scenario for GRBs with the VLA" (2.5 hrs).
- 22. VLA/15A-339, "Radio fingerprints of relativistic explosions in the advanced LIGO era" (30 hrs).
- 23. **VLA/15A-314**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (28 hrs).
- 24. VLA/14B-490, "GRB 141121A: An ultra-long GRB with a reverse shock?" (12.5 hrs).
- 25. VLA/14A-476, "Long-term follow-up of the radio loud supernova PTF11qcj with the VLA" (8 hrs).
- 26. **VLA/14A-434**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (**36 hrs**).
- 27. VLA/14A-430, "Probing the composition of GRB jets with VLA: a quest for reverse shocks" (45 hrs).
- 28. VLA/13A-508, "Late-Time Follow-up of GRB 130215A with the VLA" (12.25 hrs).
- 29. VLA/13A-411, "Probing the composition of GRB jets with JVLA: a quest for reverse shocks" (45 hrs).

- 30. VLA/12B-195, "Radio follow-up of exotic Ic SNe discovered by PTF" (27 hrs).
- 31. VLA/11B-247, "PTF11QCJ: first discovery of a radio luminous Ibn SN" (15 hrs).
- 32. **VLA/11B-034**, "Radio Follow-up of Broad Line Ic SNe Discovered by the Palomar Transient Factory" (20 hrs).
- 33. VLA/11A-227, "Search for early and late radio emission from broad-line Ic SN detected by PTF" (12.5 hrs).
- 34. VLA/10C-227, "Late time follow-up of the broad-line Ic SN PTF10bzf" (2 hrs).

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SELECTED CONFERENCE TALKS, COLLOQUIA, SEMINARS, AND LECTURES

Invited Seminars and Colloquia

- 1. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", colloquium (Kavli Institute for Particle Astrophysics and Cosmology, **Stanford University**; planned for October 2022).
- 2. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", seminar (American Museum of Natural History; 2022).
- 3. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", colloquium (Department of Physics and Astronomy, University of New Mexico; 2022).
- 4. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", colloquium (Department of Physics, Columbia University in the City of New York; 2022).
- 5. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", seminar (Institute of Science and Technology Austria ISTA; 2022).
- 6. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", seminar (Department of Astronomy and Astrophysics, **Pennsylvania State University**; 2022).
- 7. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants", seminar (School of Physics, **Georgia Institute of Technology**; 2022)
- 8. "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants", seminar (Department of Physics and Astronomy, University of Kentucky; 2021).
- "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants", lunch talk (Center for computational relativity and gravitation, Rochester Institute of Technology; 2021).
- 10. "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants", colloquium (Physics Department, Carnegie Mellon University; 2021).
- 11. "Unmasking progenitors & remnants of the most relativistic cosmic bangs via MMA", colloquium (Physics and Astronomy Department, **York University**; 2021).
- 12. "Multi-messenger exploration of the transient radio sky", colloquium (Physics and Astronomy Department, University of Texas Rio Grande Valley; 2020).
- 13. "Multi-messenger exploration of the transient radio sky with LIGO", colloquium (Physics Department, University of Missouri in St. Louis; 2020).
- 14. "Multi-messenger time-domain astronomy: GW170817 and the future", seminar (Department of Physics and Astronomy, **Rice University**; 2018).
- 15. "Multi-messenger time-domain astronomy: GW170817 and the future", colloquium (Physics Department, University of Oregon; 2018).

- 16. "Radio and GW observations of the transient sky: GW170817 and future prospects", colloquium (University of Arizona, Steward Observatory; 2018).
- 17. "Multi-messenger time-domain astronomy: GW170817 and the future", colloquium (School of Physics and Astronomy, **University of Minnesota**; 2018).
- 18. "Radio and gravitational wave studies of cosmic explosions and collisions", colloquium, (Physics Department, **Texas A&M Commerce**; 2017).
- 19. "Radio and gravitational wave studies of cosmic explosions and collisions", colloquium, (Physics and Astronomy Department, University of Texas San Antonio; 2017).
- 20. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky", colloquium (Physics and Astronomy Department, **Texas A&M**; 2014).
- 21. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky", colloquium (Physics Department, Florida Atlantic University; 2014).
- 22. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky", colloquium (Physics Department, **Texas Tech University**; 2014).
- 23. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky", colloquium (ITC, **Harvard-Smithsonian Center for Astrophysics**; 2013).
- 24. "LIGO and the multi-messenger exploration of the transient sky", seminar (LIGO Laboratory, Caltech; 2011).
- 25. "LIGO in the multi-messenger astrophysics era", IGC colloquium (Penn Sate University; 2010).
- 26. "Gamma-Ray Bursts and Gravitational Waves: a tool for multi-messenger astrophysics", colloquium (Astro-Particle and Cosmology Institute, **CNRS Paris**; 2009).
- 27. "Gamma-Ray Bursts and Gravitational Waves: a tool for multi-messenger astrophysics", colloquium (Max Planck Institute for Gravitational Wave Physics, Hannover, Germany; 2009).
- 28. "Search for Gravitational Waves associated with GRB 050915a using the Virgo detector", seminar (Center for Gravitational Wave Physics, **Penn State University**; 2008).
- 29. "Exploring the nature of GRB progenitors: afterglow analysis and search for gravitational waves", seminar (National Institute for Nuclear Physics, Frascati, Rome, Italy; 2008).
- 30. "Gamma-Ray Burst afterglows: fireball physics & clues to the progenitor", seminar (Osservatorio Astronomico di Brera, Italy; 2007).
- 31. "Gamma-Ray Burst afterglows: fireball physics & clues to the progenitor", seminar (**Istituto** Nazionale di Astrofisica, Rome; 2007).

Invited Conference Contributions

- 1. "Merger-Driven Transients: NS-NS, NS-BH, BH-BH", **NASA Time Domain and Multi-Messenger** (**TDAMM**) Initiative Workshop (Annapolis, MD; August 2022).
- 2. "Multi-messenger Astrophysics", discussion panel for the 8th PAX (Physics and Astrophysics at the Extreme) workshop, Massachusetts Institute of technology (Cambridge, MA; August 2022).
- 3. "Multi-messenger observations of gravitational-wave transients", **GWADW2022** Approaching the low-frequency design sensitivity of ground-based detectors (Tokyo via Zoom; May 2022).
- 4. "Prospects for multi-messenger astronomy in the era of 3G detectors", Next-generation gravitational wave observatories session of the **April APS meeting** (New York City, NY; April 2022).
- 5. "Observations of GW Afterglows", **IAU Symposium 363** Neutron Star Astrophysics at the Crossroads: Magnetars and the Multi-messenger Revolution (on Zoom; December 2021).
- 6. "The transient radio sky in the era of multi-messenger astronomy", Plenary session of the **2021 IEEE International Conference on Antenna Measurements and Applications** (Antibes Juan-les-Pins, France via Zoom; November 2021)

- 7. "Multi-messenger time-domain astronomy: GW170817 and the future", **Gravitational Waves**Astrophysics Conference 2021, (Hefei, China via Zoom; June 2021).
- 8. "Multi-messenger time-domain astronomy: GW170817 and the future", Spring 2021 National Meeting of the American Chemical Society (on Zoom; April 2021).
- 9. "Multi-messenger exploration of the transient radio sky with LIGO", keynote talk, 2021 virtual **National Radio Science Meeting** (on Zoom; January 2021).
- 10. "Multi-messenger Observations", discussion panel for the **First Cosmic Explorer Conference**, member (on Zoom; October 2020).
- 11. "Stellar-mass BBH and their electromagnetic counterparts", discussion panel on electromagnetic follow-up for the **13th LISA Symposium**, member (on Zoom; September 2020).
- 12. "Stellar Compact Objects mergers and short Gamma-Ray Bursts", **Compact Objects and Energetic Phenomena in the Multi-Messenger Era** Virtual mini conference (on Zoom; July 2020).
- 13. "Summary of LIGO BNS, NS-BH detections/candidates", **TCAN workshop** on BNS/BH-NS mergers (on Zoom; July 2020).
- 14. "Multi-messenger time-domain astronomy: GW170817, current GW+EM searches, and the future", 2019 Joint Fall Meeting of the **Texas Sections of APS, AAPT and Zone 13 of the SPS** (Lubbock, TX; 2019).
- 15. "Radio follow-up of gravitational waves in the Advanced LIGO/Virgo era", Cospar 2018 42nd Assembly, Caltech / JPL (Pasadena, CA; July 2018).
- 16. "Gravitational-Wave Astronomy with Advanced LIGO: Detections, Implications, and Future Prospects", Cospar 2018 42nd Assembly, Caltech / JPL (Pasadena, CA; July 2018).
- 17. "Gravitational Waves and associated emissions", Cospar 2018 42nd Assembly, Caltech / JPL (Pasadena, CA; July 2018).
- 18. "Long GRBs and core-collapse SNe in the ngVLA era", **Astrophysics Frontiers in the next decade** (Portland, OR; 2018).
- 19. "Radio counterparts from GW events", **Vulcano Workshop** Frontier Objects in Astrophysics and Particle Physics (Vulcano, Italy; 2018).
- 20. "VLBI Futures: LIGO and GRB follow-up", VLBI Futures Workshop (Lubbock, TX; 2018).
- 21. "Gravitational-Wave Astronomy with Advanced LIGO: Detections, Implications, and Future Prospects", Simons Institute for the Theory of Computing Workshop, UC Berkeley, CA; 2018).
- 22. "Cosmic Collisions (and explosions) in the ngVLA Era", **Developing the ngVLA science program workshop** (Socorro, NM; 2017).
- 23. "LIGO Gravitational Wave Detection and Future Plans", **XIth International Conference of Interconnections between Particle Physics and Cosmology** (Corpus Christi, TX; 2017).
- 24. "Supernovae driven by Relativistic Engines," **Boutiques & Experiments** 2016: Radio Astronomy, CalTech (Pasadena, CA; 2016).
- 25. "The future of ground based GW astrophysics", 2016 **April APS meeting** (Salt Lake City, UT; 2016).
- 26. "Radio and gravitational waves from the most relativistic cosmic explosions", **Building Astronomy** in Texas Symposium (Texas A&M; 2015).
- 27. "Electromagnetic follow-up of gravitational waves", Paving the Way to multi-Wavelength Astronomy Workshop (Leiden, The Netherlands; 2015).
- 28. "Astrophysics of Gravitational Wave Transients", Planning for the post-detection era in gravitational wave detectors and astrophysics Workshop (Silver Springs, MD; 2015).

- 29. "Gravitational Waves from Gamma-ray bursts", **Ioffe Workshop on GRBs and other explosive transients: Twenty Years of Konus-Wind Experiment** (St. Petersburg, Russia; 2014).
- 30. "Compact-object Models and Astrophysics Extraction", **GR meeting**, panel discussion member (South Padre Island, TX; 2013).
- 31. "Joining the Electromagnetic and Gravitational Wave Skies", **January AAS meeting**, panel discussion member (Long Beach, CA; 2013).
- 32. "Gravitational Waves from Gamma-ray Bursts", Fall 2012 GRB Symposium (Malaga, Spain; 2012).
- 33. "Electromagnetic follow-up of Gravitational Wave events", Gravitational-wave Physics & Astronomy Workshop (Hannover, Germany; 2012).
- 34. "Gravitational Waves from Gamma-ray Bursts", **Swift & Fermi Gamma-ray Burst Conference** (Munich, Germany; 2012).
- 35. "Gravitational waves from Supernovae and Gamma-Ray Bursts", **IAU Symposium 279** (Nikko, Japan; 2012).
- 36. "GW and EM Messengers from Magnetars and GRBs", Inaugural Workshop on Astrophysical Multi-messenger Observatory Network (State College, PA; 2011).
- 37. "Gravitational Waves and High energy emission from GRBs: an observational review", **COSPAR** meeting (Bremen, Germany; 2010).
- 38. "High energy emission from short GRBs", 7th AGILE Workshop (Rome, Italy; 2009).

Invited Lectures

- 1. "Multi-messenger exploration of the Transient Radio Sky", **16th Synthesis Imaging Workshop** (Socorro, NM; 2018).
- 2. "Multi-messenger exploration of the transient sky with LIGO and the VLA", **15th Synthesis** Imaging Workshop (Socorro, NM; 2016).
- 3. "Electromagnetic follow-up and Transients Astronomy", lecture, Caltech International Gravitational Wave Astrophysics School (Pasadena, CA; 2015).

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RESEARCH SUPERVISION AS PRIMARY ADVISOR

Post-doctoral Scholars

- 1. Dr. Dario Carbone, Texas Tech University (2017-2019).
- 2. Dr. Nipuni Palliyaguru, Texas Tech University (2015-2017).
- 3. Dr. Robert Coyne, Texas Tech University (2015-2017).
- 4. Dr. Peter Veres, The George Washington University (2013-2014).

Graduate Students

- 1. Avery Cook, Texas Tech University (2022-present).
- 2. Tanazza Khanam, Texas Tech University (2019-present).
- 3. Arvind Balasubramanian, Texas Tech University (2018-present).
- 4. Deven Bhakta, Texas Tech University (2017-2020).
- 5. Eric Sowell, Texas Tech University (2016-2020).
- 6. Robert Coyne, The George Washington University (2012-2015).

Research Undergraduate Students

- 1. Avery Cook, Texas Tech University (2020-2021).
- 2. Heather Harbin, Texas Tech University (2018-present).
- 3. Pryia Rajkumar, Texas Tech University (2018-2021).
- 4. Anthony Rushing, Texas Tech University (2018-2019).
- 5. Connor Grandorf, Texas Tech University (2018-2019).
- 6. Eric Garcia, Texas Tech University (2018).
- 7. Connor Spinuzzi, Texas Tech University (2018).
- 8. Rachel Smith, Texas Tech University (2017-2018).
- 9. Kyle Artkop, Texas Tech University (2017-2018).
- 10. Deven Bhakta, Texas Tech University (2014-2017).
- 11. Chance Norris, Texas Tech University (2015-2016).
- 12. Brody Moore, Texas Tech University (2015).
- 13. Carrah Osborn, Texas Tech University (2015).
- 14. Kyle Stewart, Texas Tech University (2015).
- 15. Matteo Di Giovanni, Texas Tech University (Summer 2015).
- 16. Derek Brehm, The George Washington University (2012-2014).
- 17. Ajayi Scott-Robinson, The George Washington University (2013-2014).
- 18. Igor Andreoni, The George Washington University (Summer 2013).
- 19. Maria Concetta Tringali, California Institute of Technology (Summer 2011).
- 20. Sibilla Di Pace, University of Rome Sapienza (2009).

Research High-School Students

- 1. Joseph McCarty, Clark Scholar and Student Researcher, Texas Tech University (2019-2020).
- 2. Nishit Mishra, Clark Scholar, Texas Tech University (2016-2017).
- 3. Frank Padgett, The George Washington University (2014).

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CONTRIBUTIONS TO DIVERSITY, EQUITY, AND INCLUSION

- Director of the TTU-Hub for the National and International Exchange Program (NINE) within the NRAO Office of Diversity and Inclusion (2019-present).
- NRAO RADIAL Development Lab, MSI representative for TTU (2019-present).
- TTU Spanish Bucy Lecture, founder and chair (2019-present).
- UNM Womxn in Physics panel discussion (on Zoom, Spring 2022).
- NRAO Diversity, inclusion, and broader impacts review panel, member (2021).
- NRAO Student Observing Support (SOS) Committee, member (2020-2021).
- "RADIAL: Partnering with Minority Serving Institutions to Develop Innovations in STEM+C E-learning", Exhibitor Webinar presenter, 237th meeting of the American Astronomical Society (on Zoom; 2021).
- Volunteer lecturer, "Multi-messenger Time-domain Astronomy: GW170817 and the Future", Talkington School for Young Women Students (Lubbock, TX; 2020).
- Keynote speaker, "A global venture in Astrophysics and Higher Education", Regional Meeting of the Texas Women in Higher Education (2016).

• Career Panel member, the TTU Emmy Noether High School Mathematics Day (2015).

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PUBLIC OUTREACH

- Volunteer lecturer, Astronomy Club at Seven Lakes High School in Katy, TX (on Zoom, Spring 2021).
- Judge & Prize Sponsor, South Plains Regional Science and Engineering Fair (2017-present).
- Guest speaker, "VLA In-class Activity", Coronado High School, (Lubbock, TX; 2018).
- Keynote speaker, South Plains Regional Science and Engineering Fair (2017).
- Invited lecturer, "Solar system exploration: A journey through our cosmic neighborhood", TTU Osher Lifelong Learning Institute (2016).
- Volunteer participant, "2014 Astronomy Festival on the National Mall" (2014).
- Volunteer lecturer, "Hunting for the most powerful cosmic explosions: Gamma-ray bursts and their gravitational-wave fingerprints", TC Williams High School (Alexandria, VA; 2013).

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TEACHING EXPERIENCE

- Radiative Processes in Astrophysics (undergraduate and graduate level; Spring 2015, Fall 2020, Fall 2021).
- Special Topics: Radio Astronomy (undergraduate and graduate level; Spring 2020, Spring 2021, Spring 2022).
- Stellar Astronomy for non-science majors (≈ 120 students per semester, using clickers and "think-pair-share" technique; Spring 2018, Fall 2018, Spring 2019).
- Advanced Electricity and Magnetism II (graduate level; Fall 2017).
- Solar System Astronomy for non-science majors (≈ 130−180 students, using clickers, "think-pair-share" technique; Fall 2015, Spring 2016, Fall 2016, Spring 2017).
- Extra-galactic Astronomy course for non-science majors ("The origin of the Cosmos"; $\approx 40-60$ students, using clickers, "think-pair-share" technique, and SCALE-UP format; Spring 2013, Fall 2013, Spring 2014).

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SERVICE TO PROFESSION AND UNIVERSITY

Note: Some dates omitted to maintain confidentiality

Service roles for the broad scientific community

- Cecilia Payne-Gaposchkin Doctoral Dissertation Award in Astrophysics, Selection Committee, member
- LSSTC Catalyst Fellowship, Selection Committee, member.
- Texas Section of the APS, Steven Weinberg and Robert S. Hyer Research Awards, Selection Committee, member.
- NRAO program review panel for the NSF, member.
- Time Allocation Committee for ALMA, the VLA, the NASA Fermi and NASA Swift Guest Investigator Programs, member; the NASA Chandra Guest Investigator Program, chair.
- Annual report referee for the MeerKAT Large Survey Project ThunderKAT.

- Grant referee for: the NSF; the European Research Council Starting Grants; the Israeli Science Foundation; the Swiss National Science Foundation; the Gordon and Betty Moore Foundation; the NASA post-doctoral fellowships.
- Journal referee for: Nature Physics, The Astrophysical Journal, The Astrophysical Journal Letters, Monthly Notices of the Royal Astronomical Society, Physical Review D, General Relativity and Gravitation, The Physics Teacher.

Conference Organization

- Scientific Organizing Committee, member, RICAP 2022 Roma International Conference on AstroParticle Physics (Rome, Italy, 2022).
- Co-chair for the follow-up session, 2022 Rubin Project and Community Workshop (Tucson, AZ; August 2022).
- Scientific Organizing Committee, member, Planets, Galaxies, and Gravitational Waves in the ngVLA Era (Flatiron Institute, New York City, 2022).
- Scientific Organizing Committee, member, Gravitational Wave Physics and Astronomy Workshop (Hannover, Germany, 2021).
- Scientific Organizing Committee, member, Seventh Physics & Astrophysics at the eXtreme (PAX-VII; On Zoom, 2021).
- International Scientific Program Committee, member, gamma-ray direct (ISPC-GAD) sessions of the 37th ICRC (on Zoom, July 2021).
- Scientific Organizing Committee, member, Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects (on Zoom, 2020).
- Scientific Organizing Committee, member, Radio/millimeter Astrophysical Frontiers in the Next Decade (Charlottesville, 2019).
- Local Organizing Committee, member, NRAO Community Day at TTU, Committee Member (Lubbock, 2019).
- Scientific Organizing Committee, member, 22nd International Conference on General Relativity and Cosmology (Valencia, 2019).
- Scientific Organizing Committee, chair of the Relativistic Astrophysics Session, 21st International Conference on General Relativity and Cosmology (New York, 2016).
- Scientific Organizing Committee, member, The Explosive Death of Massive Stars COSPAR science assembly (Istanbul, 2016).
- Scientific Organizing Committee, member, The Explosive Death of Massive Stars COSPAR science assembly (Moscow, 2014).
- Scientific and Local Organizing Committee, chair, LIGO-Virgo-Fermi Collaborations International Workshop on Gamma-ray Bursts and Gravitational Waves (Washington D.C., 2013).
- Local Organizing Committee, member, 14th Gravitational Wave Data Analysis Workshop (Rome, 2010).

University service

- TTU PHAS Undergraduate Program Committee, chair (2021-present).
- TTU PHAS Undergraduate Program Committee, member (2016-2020).
- TTU Bucy Lectureship Committee, chair (2015-2020).
- TTU PHAS Colloquium Committee, chair (2015-2017, Spring 2018-Spring 2019, Spring 2020).
- GWU Physics Undergraduate Committee, member (2012-2014).
- GWU Physics Colloquium Committee, member (2012-2014).
- GWU Physics Curriculum Development Committee, member (2013-2014)

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