Curriculum Vitae

Richard Jude Anantua

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EDUCATION

2011-2016 **Stanford University,** Ph.D. Physics, Sep. 2016,
Thesis: "Towards Multiwavelength Observations of Relativistic Jets from General Relativistic Magnetohydrodynamic Simulations"
Advisor: Roger Blandford, Ph.D., Sc.D., FRS

2013-2014 **Harvard University,** Ed.M. Education Policy and Management, May 2014,
Cross-registered for courses at the Harvard-Smithsonian Center for Astrophysics and Harvard Business School

2011-2013 **Stanford University,** M.S. Physics, Jan. 2013

2006-2010 **Yale University,** B.S. (Physics and Philosophy) and (Economics and Mathematics), May 2010, Distinction in the (Physics and Philosophy) major

ACADEMIC APPOINTMENTS

RICE UNIVERSITY, HOUSTON, TX

Aug. 2024- **Adjunct Professor of Physics and Astronomy, Rice College of Sciences**

- Co-advising Rice Ph.D. student jointly between Rice and UTSA

UNIVERSITY OF TEXAS AT SAN ANTONIO, SAN ANTONIO, TX

Jan. 2022- **Assistant Professor of Physics and Astronomy, UTSA College of Sciences**

- Lead first research group in Texas focused on Event Horizon Telescope applications
- Developed and taught new graduate courses, including PHY 7903/AST 4953 General Relativistic MHD and joint UTSA/UT Austin course AST 381 Galactic Dynamics

HARVARD UNIVERSITY, CAMBRIDGE, MA

Jan. 2019-Dec. 2021 **Postdoctoral Fellow, Center for Astrophysics | Harvard & Smithsonian /Black Hole Initiative/Event Horizon Telescope**

- Conducted computational research at Institute for Theory & Computation
- Conducted high-energy astrophysics research in Avi Loeb Group
- Modeled jet/accretion flow/black hole (JAB) emission for Event Horizon Telescope Collaboration
- Served as Outreach Working Group Coordinator for EHT

FLATIRON INSTITUTE, NEW YORK, NY

Nov. 2020-Jan. 2021 **Visiting Scholar, Center for Computational Astrophysics**

- Conducted theoretical and computational research in high-energy astrophysics and dark matter phenomenology

U.C. BERKELEY, BERKELEY, CA

Nov. 2016-Jan. 2019 **Postdoctoral Fellow, U.C. Berkeley Department of Astronomy**

- Conducted high-energy astrophysics research on near-horizon emission modeling of accretion disks and outflows in Eliot Quataert Group
- Advised and collaborated with graduate and undergraduate students

MAJOR COLLABORATIONS

- Simons Collaboration for Extreme Electrodynamics of Compact Sources (2023-)
  - Founded SCEECS Research Scholars national internship (2025)
- Event Horizon Telescope Collaboration (2020-)
- Fermi Large Area Telescope (2014-2016)
- National Society of Black Physicists (2014-)
  - Founded NSBP/SAO EHT Scholars annual Harvard internship (2020-)

EXPERIENCE

U.C. BERKELEY, BERKELEY, CA

Jul. 2018-Aug. 2018 **Instructor, U.C. Berkeley Department of Astronomy**

- Served as co-instructor for Astron 9 "Order of Magnitude Physics," devising original PowerPoint lectures, problem sets, projects and exams

Jul. 2017-Aug. 2017 **Instructor, U.C. Berkeley Department of Astronomy**

- Created Astron 9 "Relativity of Space and Time in Popular Science," devising original PowerPoint lectures, problem sets, projects and exams
- Served as Astron 9 Instructor of Record

STANFORD UNIVERSITY, STANFORD, CA

Sep. 2015-Dec. 2015 **Teaching Assistant, Stanford Department of Physics**

- Led discussion section, graded problem sets and worked on course design with Senior Staff Scientist Grzegorz Madejski in the graduate course Ph 216 Back of the Envelope Physics

Apr. 2013-Jun. 2013 **Teaching Assistant, Stanford Department of Physics**

- Led discussion section, graded problem sets and guest lectured for Prof. Stefan Funk in the undergraduate course Ph 17 Black Holes

Sep. 2012-Dec. 2012 **Teaching Assistant, Stanford Department of Physics**

- Led discussion section, graded problem sets and tutored students for Prof. Giorgio Gratta in the undergraduate course Ph 45 Light and Heat

Jun. 2012-Aug. 2012 **GRE Coach, Stanford Humanities and Sciences Early Identification Program**

- Served as a math GRE coach for students of diverse backgrounds
- Created all instructional material and homework

SELF-EMPLOYED, NEW YORK CITY, NY

Aug. 2010-May 2011 **Private Tutor**

- Advertised and performed tutoring services in chemistry, physics and math for middle and high school students in NYC

YALE UNIVERSITY, NEW HAVEN, CT

Sep. 2008-Apr. 2011 **Undergraduate Quantitative Reasoning Tutor**

- Tutored for Yale undergraduates in astronomy, economics, mathematics and physics courses

May 2009-Aug. 2009 **Research Associate, Jack Harris Lab**

- Modeled using Python code an optomechanical cavity that strongly couples the oscillation of an SiN membrane to cavity electric field modes via radiation pressure in order to lay groundwork for quantum non-demolition measurement of membrane ground state phonon number

Jun. 2008-Aug. 2008 **Researcher, Science, Technology and Research Scholars**

- Participated in a selective research and presentation program in which I created novel models of the graviton energy per frequency spectrum of Hawking radiating post-inflationary primordial black holes, a newly theorized source of stochastic gravitational wave background (confer Anantua et al. (2009))

GRANTS & COMPUTING ALLOCATIONS

- Extension of Simons Collaboration on Extreme Electrodynamics of Compact Sources (2027-30); PI **$360,000**
- Extension of TACC AST23031"Applications of Observing JAB Simulations" (Lonestar6): PI 20,000 Node Hours (2026)
- ACCESS PHY250292: Next Generation Simulations of Tidal Disruption Event Disks and Jets; Co-I 200,000 ACCESS Credits
- TACC AST23031 "Applications of Observing JAB Simulations" (Lonestar6): PI -18,000 Node Hours (2025)
- Simons Collaboration on Extreme Electrodynamics of Compact Sources (2023-27); Co-I **$602,023**
- Oak Ridge Associated Universities (ORAU) Ralph E. Powe Junior Faculty Enhancement Award (2023); (Awarded to 35 out of 167); PI **$10,000**
- TACC PHY220017 Dell/Intel Knights Landing, Skylake System (Stampede2): 1,600.0 Node Hours (2022)
- TACC PHY220017 Long-term tape Archival Storage (Ranch): PI- 2,000.0 GB (2022)

FELLOWSHIPS, AWARDS & HONORS

- Top 10 Men of Excellence (2026) Haiti Executive Board (Jun. 2026) https://www.linkedin.com/pulse/top-10-men-excellence-where-haitian-leadership-meets-tsc9e/
- American Astronomical Society 246th Meeting Press Conference on (Lujan, Gebhardt, Anantua et al. 2025) (25:30-31:00)
- UTSA President's Distinguished Achievement Award for Research Achievement (2024)
- Nature Astronomy Vol. 5 cover story (cf. Janssen et al., 2021) https://media.springernature.com/w440/springer-static/cover-hires/journal/41550/5/10?as=webp&q=95
- Royal Astronomical Society – 2021 Group Achievement Award (Astronomy) (Awarded to the Event Horizon Telescope Collaboration)
- Einstein Medal – 2020 (Awarded to the Event Horizon Telescope Collaboration)
- Harvard Future Faculty Leaders Fellowship (2018)
- Galaxies Vol. 6 Issue 1 cover story (cf. Anantua et al., 2018) http://www.mdpi.com/2075-4434/6/1

- Diversifying Academia, Recruiting Excellence (DARE) (2014) Fellowship awarded to ~20% of Stanford doctoral applicants for this fellowship
- Achievement Rewards for College Scientists (ARCS) (2013) (I declined this award to attend Harvard)
- Harvard University Leadership in Education Award (2013), awarded to top 10-15% of Harvard Graduate School of Education applicants
- Stanford University Humanities and Sciences Fellowship (2010)
- Yale College Dean's Research Fellowship (2009)
- AP Scholar with Distinction at Stuyvesant High School (2006) (the most selective NYC Specialized High School Admission Test school (~3% admission rate for Class of '06))
- Prep for Prep Les Pierre Medal (2001), awarded to 1 top male and 1 top female in >100-member cohort at the end of 14-month preparatory component

PUBLICATIONS (Google Scholar: ≥11,000 citations; h-index ≥38; 8 1st author; 6 2nd author) (With supervised postdoc **(a),** grad student **(b**), undergrad **(c)** and high school student **(d)**)

67. D. Jones [b], **R. Anantua,** R. Emami and N. Lujan[b] "Probing Axions with Relativistic Jet Polarimetry," [https://arxiv.org/abs/2603.03244], Submitted to ApJ (2026)
66. H. Mueller **et al.**, "Dynamics and Geometry of the Inner Sub-Parsec-Scale Jet in 3C 279 Observed with the EHT," [https://arxiv.org/abs/2607.16104], Accepted by A&A (2026)
65. G. Principe **et al.**, "Broadband Multiwavelength Properties of the Archetypal Blazar 3C 279 during the 2017 EHT Campaign," [https://arxiv.org/abs/2606.25868], Accepted by A&A (2026)
64. B. Curd[a], S. Heridia[c], A Ahiyya[c] and **R. Anantua,** "GRRMHD Simulations of State Transitions in Non-Jetted Tidal Disruption Events," MNRAS **550** stag1140 (2026)
63. B. Georgiev **et al.,** "Locating the Missing Large-Scale Emission in the Jet of M87* with Short EHT Baselines, Astronomy & Astrophysics **709,** A26 (2026)
62. E. Albentoza-Ruiz **et al.,** "Full-Polarization Millimeter Wavelength Variability of Sgr A* During the 2018 EHT Campaign," Astronomy & Astrophysics **708,** A179 (2026)
61. V. Bernshteyn **et al.,** "Ring Asymmetry and Spin in M87," Astrophysical Journal **1000,** 2 (2026)
60. Saurabh **et al.,** "Probing Jet Base Emission of M87* with the 2021 EHT Observations," Astronomy & Astrophysics **706,** A27 (2026)
59. J. Gomez **et al.,** "Spatially Resolved Polarization Swings in the Supermassive Black Hole Binary Candidate OJ 287 with First EHT Observations," Astronomy & Astrophysics **705,** A23 (2026)
58. **EHT Collaboration et al.,** "Horizon-Scale Variability of M87* from 2017-2021 EHT Observations," Astronomy & Astrophysics **704,** A91 (2025)
57. N. Lujan[b], K. Gebhardt, **R. Anantua,** et al.[bc] "Modeling the 'Dark-Matter

Dominated' Galaxy Segue 1 with a Black Hole," ApJL **992,** L25 (2025)

56. B. Curd[a], **R. Anantua,** H. West[b] and J. Duran[b], "Jet Tilt Instability from Stream-Disk Interactions in MAD Disks," MNRAS **540,** 1215 (2025)
55. C. Goddi **et al.,** "First Polarization Study of the M87 Jet and Active Galactic Nuclei at Sub-Millimeter Wavelengths with ALMA," Astronomy & Astrophysics **699,** A265 (2025)
54. R. Dale **et al.,** "Origin of the Ring Ellipticity in the Black Hole Images of M87," Astronomy & Astrophysics **699,** A279 (2025)
53. **EHT Collaboration et al.,** "The Persistent Shadow of the Supermassive Black Hole of M87," Astronomy and Astrophysics **693,** 265 (2025)
52. J. Röder **et al.,** "A Multi-Frequency Study of Sub-Parsec Jets with the Event Horizon Telescope," Astronomy & Astrophysics **695,** A233 (2025)
51. **EHT Collaboration et al.,** "Mid-Range Science Objectives for the Event Horizon Telescope," [https://arxiv.org/abs/2410.02986] (2024)
50. J. Harrison and **R. Anantua,** "High Energy Neutrino State Transition Probabilities," Applied Sciences **14(22),** 10666 (2024)
49. A. Backzo **et al.,** "The Putative Center in NGC 1052," Astronomy & Astrophysics **692,** A205 (2024)
48. J. C. Algaba **et al.,** "Broadband Multi-Wavelength Properties of M87 during the 2018 EHT Campaign Including a Very High Energy Flaring Episode," Astronomy & Astrophysics **692,** A140 (2024)
47. A. Raymond **et al.,** "First Very Long Interferometry Detections at 870μm," ApJ **168,** 130 (2024)
46. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. VIII. Physical Interpretation of the Polarized Ring," ApJL **964,** L26 (2024)
45. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. VII. Polarization of the Ring," ApJL **964,** L25 (2024)
44. **EHT Collaboration et al.,** "Ordered Magnetic Fields Around the 3C 84 Central Black Hole," A&A **682,** L3 (2024)
43. **R. Anantua,** A. Ricarte, G. Wong, R. Emami, R. Blandford, L. Oramas[b], H. West[b], J. Duran[b] and B. Curd[a], "On the Comparison of AGN with GRMHD Simulations: II. M87," MNRAS **528,** 735-756 (2024)
42. **EHT Collaboration et al.,** "The persistent shadow of the supermassive black hole of M87: I. Observations, calibration, imaging and analysis," A&A **681,** A79 (2024)
41. F. Roelofs **et al.,** "Polarimetric Geometric Modeling for mm-VLBI Observations of Black Holes," ApJL **957,** L21 (2023)
40. **EHT Collaboration et al.,** "First M87 Event Horizon Telescope Results. IX. Detection of Near-horizon Circular Polarization," ApJL **957,** L20 (2023)
39. P. Thorne **et al.,** "A Search for Pulsars around Sgr A* in the First Event Horizon Telescope Dataset," ApJ **959,** 14 (2023)
38. B. Prather **et al.,** "Comparison of Polarized Radiative Transfer Codes used by the EHT Collaboration," ApJ **950,** 1 (2023)
37. S. Jorstad **et al.,** "Event Horizon Telescope Image of the Quasar NRAO

530," ApJ **943,** 170 (2023)

36. R. Emami **et al.,** "Tracing the Hotspot Motion using the Next Generation Event Horizon Telescope (ngEHT)," Galaxies **11,** 23 (2023)
35. B. Curd[a] **et al.,** "Jets from SANE Super-Eddington Accretion Flows: Morphology, Spectra and Their Potential as Targets for ngEHT," MNRAS **519,** 2 (2023)
34. R. Emami, **R. Anantua** et al.[a], "Probing Plasma Composition with the Next Generation Event Horizon Telescope (ngEHT)," Galaxies **11,** 11 (2023)
33. R. Emami **et al.,** "Unraveling Twisty Linear Polarization Morphologies in Black Hole Images" ApJ **950,** 38 (2023)
32. **R. Anantua** et al.[abd], "Emission Modeling in the EHT/ngEHT Age," Galaxies **11,** 4 (2023)
31. B. Curd[a] **et al.,** "Modeling Reconstructed Images of Jets Launched by SANE Super-Eddington Accretion Flows around SMBHs with the ngEHT," Galaxies **10,** 117 (2022)
30. A. Broderick **et al.,** "The Photon Ring in M87*," ApJ **935,** 61 (2022)
29. S. Issaoun **et al.,** "Resolving the Inner Parsec of the Blazar J1924-2914 with the Event Horizon Telescope," ApJ **934,** 145 (2022)
28. A. Broderick **et al.,** "Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI," ApJL **930,** L21 (2022)
27. B. Georgiev **et al.,** "A Uniform Power-law Prescription of Variability from Synthetic Images of Black Hole Accretion Flows," ApJL **930,** L20 (2022)
26. M. Wielgus **et al.,** "Millimeter Light Curves of Sagittarius A* Observed during the 2017 Event Horizon Telescope Campaign," ApJL **930,** L19 (2022)
25. J. Farrah **et al.,** "Selective Dynamical Imaging of Interferometric Data," ApJL **910,** L18 (2022)
24. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. VI., Testing the Black Hole Metric," ApJL **930,** L17 (2022)
23. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. V., Testing Astrophysical Models of the Galactic Center Black Hole," ApJL **930,** L16 (2022)
22. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. IV., Variability, Morphology and Black Hole Mass," ApJL **930,** L15 (2022)
21. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. III., Imaging of the Galactic Center Supermassive Black Hole," ApJL **930,** L14 (2022)
20. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. II., EHT Multiwavelength Observations, Data Processing and Calibration," ApJL **930,** L13 (2022)
19. **EHT Collaboration et al.,** "First Sagittarius A* Event Horizon Telescope Results. I., The Shadow of the Supermassive Black Hole in the Center of

the Milky Way," ApJL **930,** L12 (2022)
18. K. Satapathy **et al.,** "The Variability of the Black-Hole Image in M87 at the Dynamical Time Scale," ApJ **925,** 13 (2022)
17. R. M. Emami, **R. J. Anantua,** A. A. Chael and A. Loeb, "Positron Effects on Polarized Images and Spectra from Jet and Accretion Flow Models of M87* and Sgr A*," ApJ **932,** 272 (2021)
16. M. Janssen **et al.**, "Event Horizon Telescope observations of the jet launching and collimation in Centaurus A," Nature Astronomy **5,** 1017-1028 (2021)
15. P. Kocherlakota **et al.,** "Constraints on Black-Hole Charges with the 2017 EHT Observations of M87*," PRD **103,** 104047 (2021)
14. R. Narayan **et al.,** "The Polarized Image of a Synchrotron-Emitting Ring of Gas Orbiting a Black-Hole," ApJ **912,** 35 (2021)
13. J. C. Algaba **et al.,** "Broadband Multi-Wavelength Properties of M87 During the 2017 Event Horizon Telescope Campaign," ApJL **911,** L11 (2021)
12. C. Goddi **et al.,** "Polarimetric Properties of Event Horizon Telescope Targets from ALMA," ApJL **910,** L14 (2021)
11. **EHT Collaboration et al.,** "First M87 Event Horizon Telescope Results. VIII., Magnetic Field Structure near The Event Horizon," ApJL **910,** L13 (2021)
10. **EHT Collaboration et al.,** "First M87 Event Horizon Telescope Results. VII. Polarization of the Ring," ApJL **910,** L12 (2021)
9. **R. J. Anantua,** R. M. Emami, A. Loeb and A. A. Chael, "Determining the Composition of Relativistic Jets from Polarization Maps," ApJ **896,** 30 (2020)
8. **R. J. Anantua,** S. M. Ressler and E. Quataert, "On the Comparison of AGN with GRMHD Simulations, I. Sgr A*," MNRAS **493,** 1404 (2020)
7. T. K. Fowler, H. Li and **R. J. Anantua,** "A Quasi-Static Hyper-Resistive Model of Ultra High Energy Cosmic Ray Acceleration by Magnetically Collimated Jets Created by Active Galactic Nuclei," ApJ **885,** 4 (2019)
6. **R. J. Anantua,** R. D. Blandford and A. Tchekhovskoy, "Multiwavelength Observations of Relativistic Jets from General Relativistic Magnetohydrodynamic Simulations," Galaxies **6,** 31 (2018)
5. R. D. Blandford and **R. J. Anantua,** "The Future of Black Hole Astrophysics in the LIGO-VIRGO-LPF Era," J. Phys.: Conf. Ser. **840,** 012023 (2017)
4. M. Ackermann **et al.** (Fermi-LAT Collaboration), "Minute-Timescale >100 MeV Gamma-Ray Variability During the Giant Outburst of Quasar 3C 279 Observed by Fermi -LAT in 2015 June," ApJL **824,** L20 (2016)
3. **R. J. Anantua,** Sean A. Hartnoll, Victoria L. Martin and David M. Ramirez, "The Pauli Exclusion Principle at Strong Coupling: Holographic Matter and Momentum space," JHEP **3,** 104 (2013)
2. **R. J. Anantua** and O. K. Baker, "TeV Gamma Rays from Distant BL Lacs and Photon-Paraphoton Kinetic Mixing," Phys. Lett. B **690,** 25-28 (2010)

1. **R. J. Anantua,** R. Easther and J. T. Giblin Jr., "Grand Unification Scale Primordial Black Holes: Consequences and Constraints," Phys. Rev. Lett. **103,** 111303 (2009)

PUBLICATIONS IN PREP

- **R. Anantua,** D. Lehenbaur[d], B. Curd[a], N. Lujan[b], and T. K. Fowler "Accreting Primordial Black Holes: Dark Matter Constituents," [https://arxiv.org/pdf/2403.04227], Phys Rev. A (2026)
- J. Duran[b], B. Curd[a] and **R. Anantua** "Deciphering Eccentric Accretion Disks with GRMHD: A Comparative Study," MNRAS (2026)
- **R. Anantua,** G. Wong and R. Emami, "Local Positron Production in M87: Prospects for EHT Constraints on Jet Composition," MNRAS (2026)
- **R. Anantua,** "Inductive Slowing of Relativistic Jets in GRMHD Simulations," ApJ (2026)

PUBLICATIONS IN PRESS

- Phys.org: "Tiny Galaxy, Big Find: Black Hole Discovered in Nearby Segue 1," (Oct. 2025), Retrieved Oct. 27, 2025 from https://phys.org/news/2025-10-tiny-galaxy-big-black-hole.html
- The Cleveland American: "Giant Black Hole Found in Tiny Galaxy May Redefine Astrophysics" (Oct. 2025), Retrieved Oct. 27, 2025 from https://www.theclevelandamerican.com/gigantic-black-hole-found-in-tiny-galaxy-may-redefine-astrophysics/
- UTSA Today: "UTSA researchers offer alternative to dark matter model in dwarf galaxies," (Jun. 2025), Retrieved Sep. 3, 2025 from https://news.utsa.edu/2025/06/utsa-researchers-offer-alternative-to-dark-matter-model-in-dwarf-galaxies/
- UTSA Today: "UTSA Celebrates Winners of 2024 University Excellence Awards," (May 2024), Retrieved Nov. 9, 2024 from https://www.utsa.edu/today/2024/05/story/2024-university-excellence-award-winners.html
- Physics Today: "Early Career Faculty Face Many Challenges," (Oct. 2024), Retrieved Sep. 7, 2026 from https://physicstoday.aip.org/features/early-career-faculty-face-many-challenges
- UTSA Today: "UTSA astrophysicist to co-lead new international organization studying neutron stars and black holes," (Sep. 2023), Retrieved Sep. 7, 2026 from: https://news.utsa.edu/2023/09/utsa-astrophysicist-to-co-lead-new-international-organization/
- Oakridge Associated Universities News: "ORAU Awards 35 Research Grants Totaling $175,000 to Junior Faculty at its Member Universities," (Jun. 2023), Retrieved Sep. 7, 2026 from https://www.orau.org/news/releases/2023/powe-research-grants-awarded-to-junior-faculty.html
- San Antonio Express News: "A San Antonio professor helped capture the first image of the black hole at the center of our galaxy," (Jul. 2022), Retrieved Aug. 6, 2022 from: https://www.expressnews.com/news/education/article/UTSA-professor-space-black-hole-17321106.php?fbclid=IwAR2uoROVS8xYUeLpqtB6k4cw3VvBxnzxyG9ooTVJl7Xo8kP5lPnpbGI7hHg#photo-22726358
- UTSA Today: "Top Stories of 2022 – Prodigious Black Hole Image Made Possible by UTSA Physics Professor," (Dec. 2022), Retrieved Sep. 7, 2026 from: https://news.utsa.edu/2022/12/prodigious-black-hole-image-made-possible-by-utsa-physics-professor-2/
- UTSA Today: "Groundbreaking image of the black hole Sagittarius A* enhanced by physics professor Richard Anantua," (May 2022), Retrieved Jun 8, 2022 from: https://www.utsa.edu/today/2022/05/story/eht-black-hole-richard-anantua.html

- KHOU 11 Houston: "First photo shows a massive black hole in the Milky way that is 4 million times the mass of the Sun," (May 2022), Retrieved Jun 8, 2022 from: https://www.khou.com/article/tech/science/space/first-photo-black-hole-milky-way-galaxy-sagittarius-star/285-8fa35c71-c429-4a52-a0ef-b7ae40f2dda4
- Yale News: "Snapping a Cosmic Selfie – First Image of the Milky Way's Black Hole," (May 2022), Retrieved Jun 8, 2022 from: https://news.yale.edu/2022/05/13/snapping-cosmic-selfie-first-image-milky-ways-black-hole
- Harvard Crimson: "Harvard Astrophysicists Help Make Discovery in Understanding Black Hole's Magnetic Fields," (Apr. 2021), Retrieved Apr. 22, 2021 from: https://www.thecrimson.com/article/2021/4/12/black-hole-polarization/
- Gizmodo: "See a Black Hole's Magnetic Fields in a New Image from the Event Horizon Telescope," (Mar. 2021), Retrieved Apr. 22, 2021 from: https://gizmodo.com/see-a-black-holes-magnetic-fields-in-new-image-from-the-1846542592?fbclid=IwAR3lmy77huJRZgWzci2boXjbW8o2ke0NN0e4Cu0wHarLd9GJbEzzS1eQXlY
- American Astronomical Society: "Program Opens Research Pathways for Underrepresented Young Astrophysicists," (Sep. 2020), Retrieved Apr. 22, 2021 from: https://aas.org/posts/news/2020/09/program-opens-new-research-pathways-underrepresented-young-astrophysicists
- R. J. Anantua, "Seeing and Believing: 'Observing' Simulations of Relativistic Jets," (Mar. 2017), Retrieved Dec. 12, 2017 from: https://kipac.stanford.edu/highlights/seeing-believing-observing-simulations-relativistic-jets
- R. J. Anantua, "Why Are We Here in the Universe?" (Feb. 2017), Retrieved May 7, 2017 from: http://magazine.ivy.com/2017/02/why-are-we-here-in-the-universe/

INVITED TALKS

- Trinity University (Fall 2026)
- Baylor Astronomy Colloquium (Oct. 2025)
- NYU Physics Seminar on "A Message from the Horizon Scale by EHT: Deciphering Observational Signatures of Sgr A* and M87*" (Mar. 2025)
- Simons Collaboration for Extreme Electrodynamics of Compact Sources talk on "Hidden Figures – Towards EHT Scale Signatures of Axions and Positrons," New York, NY (Feb. 2025)
- Simons Collaboration for Extreme Electrodynamics of Compact Sources talk on "EHT, ngEHT and Beyond," Madison, WI (Nov. 2024)
- Event Horizon Telescope Plenary Talk in Mexico City on "Updates and Considerations by EHT Outreach" (May 2024)
- TCU "A Tale of Two Shadows: Emission Modeling Horizon-Scale Observations of Sgr A* and M87*" (Mar. 2024)
- Theoretical Astroparticle and Cosmological Symposium (TACOS) talk on "GRMHD Positron Applications in the Present and Primordial Universe" at Rice (Oct. 2023)
- University of Wisconsin Colloquium on "On the Comparison of AGN with GRMHD Simulations: Sgr A* and M87" (Oct. 2023)
- European Astronomical Society 2023, Krakow, Poland – selected by EHT Speakers Bureau to give presentation at section: "Black Hole Accretion Disks 50 Years on" (Jul. 2023)

- The Black Hole Conference, Hong Kong (Jun. 2023)
- NgEHT Project Advisory Committee, Cambridge, MA (Jan. 2023)
- Giant Magellan Telescope Community Meeting, Sedona, AZ (Aug. 2022)
- GRAPPA University of Amsterdam Colloquium (Apr. 2022)
- Institute for Advanced Study Astrophysics Seminar (Oct. 2021)
- University of Virginia Colloquium (Sep. 2021)
- Vanderbilt Physics & Astronomy Seminar (Sep. 2021)
- University of Florida Special Colloquium on "Horizon-Scale Physics Using Movies and Polarization Maps" (Mar. 2021)
- Amherst College Colloquium on EHT M87* Polarization Papers VII & VIII (Mar. 2021)
- Okanagan College talk on EHT M87* Polarization Papers VII & VIII (Mar. 2021)
- Flatiron Institute Center for Computational Astrophysics, New York, NY, Galaxy Formation Group Meeting (Mar. 2021)
- University of Texas at Austin Physics Special Colloquium on "Horizon-Scale Physics Using Movies and Polarization Maps" (Mar. 2021)
- MIT Haystack talk on NSBP/SAO EHT Scholars initiative (Mar. 2021)
- Reed College (Feb. 2021)
- NASA Goddard (Jan. 2021)
- Cornell Astronomy Colloquium (Dec. 2020)
- Flatiron Institute Center for Computational Astrophysics, New York, NY, Compact Objects Group Meeting (Dec. 2020)
- University of Illinois at Urbana-Champaign Astrophysics Colloquium, "Imaging and Beyond: Understanding Near-Horizon Physics. Using Movies and Polarization Maps" (Dec. 2020)
- SUNY Stony Brook Colloquium (Nov. 2020)
- SUNY Stony Brook Astro Open Night "Relativity of Space and Time in Popular Science" (Nov. 2020)
- University of Chicago seminar on "Towards Understanding Near-Horizon Physics of Sgr A* from Movies and Polarization Maps" (Oct. 2020)
- Joint IAS/Princeton University Astrophysics Colloquium (Aug. 2020)
- Brown Astrophysics Seminar Series, Providence, RI talk on "'Observing' JAB Simulations – Towards Understanding Jet/Accretion Flow/Black Hole Systems in Sgr A* and M87" (Nov. 2019)
- "Understanding the Multiwavelength Blazar Variability – Workshop at Stanford" talk on cosmic ray acceleration in jets (Aug. 2019)
- Harvard Quasar Tea talk on "'Observing' JAB Simulations – Probing Near Horizon Scales in AGN" (Feb. 2019)
- Diversifying Academia Recruiting Excellence (DARE) 10th Reunion, Stanford, CA talk on "'Observing' JAB Simulations" (Nov. 2018)
- Harvard Black Hole Initiative talk on "'Observing' JAB Simulations" (Jun. 2018)
- City College of San Francisco talk on "Sgr A* Emission Parametrizations from GRMHD Simulations" (Feb. 2018)

SELECTED CONFERENCES

- American Astronomical Society 247th Meeting, Phoenix, AZ talk on "Probing Positron and Axion Signatures in Jet/Accretion Flow/Black Hole Systems" (Jan. 2026)
- NSBP/NSHP Joint Meeting San Jose (Nov. 2025)
- EHT Collaboration Meeting, Berlin, Germany (Jul. 2025)
- American Astronomical Society 246th Meeting, Anchorage, AK talk on "Towards the Multiwavelength Observations of Jet/Accretion Flow/Black Hole Simulations of 3C 279" (Jun. 2025)
- American Astronomical Society 245th Meeting, National Harbor, MD talk on "Dark Matter via Primordial Black Holes Accreting Under Magnetorotational Instability" (Jan. 2025)
- EHT Collaboration Meeting, Mexico City (May 2024)
- EHT Collaboration Meeting, Taipei, Taiwan (Jun. 2023)
- Growing Black Holes: Accretion and Mergers, Kathmandu, Nepal (May 2022)
- American Astronomical Society 235th Meeting, Honolulu, HI talk on "Beyond Imaging: Probing Near-Horizon Physics from Movies and Polarization Maps based on GRMHD Simulations" (Jan. 2020)
- National Society of Black Physicists Conference, Providence, RI talk on "Discovering the Composition of Jets from Polarization Maps" (Nov. 2019)
- Tracing Cosmic Evolution with Clusters of Galaxies, Sexten, Italy poster on "Observing JAB Simulations— Probing Near Horizon Scales in Simulations" (Jul. 2019)
- 22nd International Conference on General Relativity and Gravitation, Valencia, Spain talk on "Observing JAB Simulations— Probing Near Horizon Scales in Simulations" (Jul. 2019)
- American Astronomical Society 234th Meeting, St. Louis, MO talk on "Cosmic Ray Acceleration in Jets by Accretion Disk Dynamo" (Jun. 2019)
- American Astronomical Society 233rd Meeting, Seattle, WA talk on "Observing JAB Simulations— Probing Near-Horizon Scales in Simulations" (Jan. 2019)
- American Astronomical Society 232nd Meeting, Denver, CO talk on "Observing JAB Simulations" (Jun. 2018)
- California Alliance Conference at U.C. Berkeley, poster presentation on "Observing Jet/Accretion Disk/Black Hole Simulations" (Mar. 2018)
- Polarized Emission from Astrophysical Jets, Ierapetra, Greece talk on "Observing Jet Simulations" (Jun. 2017)
- California Alliance Conference at UCLA, Los Angeles, CA poster presentation on "Observing Jet Simulations" (Feb. 2017)
- NSF Theoretical and Computational Astrophysical Network at U.C. Berkeley talk on "Observing Jet Simulations" (Jan. 2017)

- ASIAA M87 Workshop: Towards the 100th Anniversary of the Discovery of Cosmic Jets, Taipei, Taiwan oral presentation on "Observing Jet Simulations" (May 2016)
- American Astronomical Society 226th Meeting, Kissimmee, FL poster presentation on "Observing Jet Simulations" (Jan. 2016)
- California Alliance Conference at Caltech, Pasadena, CA poster presentation on "'Observing' Jet Simulations" (Apr. 2015)
- National Society of Black Physicists Conference, Baltimore, MD (Feb. 2015)
- Fermi Bubbles Theory and Observations Conference, Menlo Park, CA (SLAC) poster presentation on Parametric Modeling of Fermi Bubbles (Apr. 2013)
- American Physical Society Conference, Anaheim, CA oral presentation on (Anantua & Baker, 2010) (Apr. 2011)

MENTORSHIP

- Postdocs
  - UTSA Postdoc/Harvard PhD graduate/NSBP/SAO EHT Scholar Brandon Curd (2021-)
- PhD Students
  - UTSA Master's/PhD student/UTSA-EHT Scholar Joaquin Duran (2022-)
  - UTSA Master's/PhD student Nathaniel "Nate" Lujan (2024-)
  - Rice Master's/PhD student/NSBP/SAO EHT Scholar/SCEECS Research Scholar Dashon Jones (2024-)
- Master's Students
  - UTSA Master's student Ashton Davis (2025-)
  - UTSA Master's student Nicholas Carlson (2025)
  - UTSA Master's student/SCEECS Research Scholar/UIowa PhD student Hayley West (2023-25) – Thesis: "Emission Modeling of the Jet/Accretion Flow/Black Hole Systems in GRMHD"
- Undergraduate Students
  - UTSA undergrad Noah/Safie Heridia (2023-26)
  - UTSA undergrad Aviyel Ahiyya (2023-26)
- High School Students
  - BASIS Shavano High School Senior Devansh Lebenbaur (2026-)
  - Keystone High School student/Caltech Undergrad Shaum Debnath (2023-) – AAS Abstract
  - Thomas Jefferson High School Senior Kevin Boakye (2024-25)
  - BASIS Shavano High School Senior Luke Fehlis 2023-24 (senior thesis)
- Committee Supervision
  - UTSA PhD Dissertation Committee member for John Harrison (2024)

    - Fisk-Vanderbilt student Elon Price for master's thesis and Summer 2020 NSBP/SAO EHT Scholar GRMHD project at Smithsonian Astrophysical Observatory (co-mentor: Christian Fromm)
- Summer Students
    - Undergraduate intern Nicholas Conroy for Summer 2020 EHT Outreach at Smithsonian Astrophysical Observatory (co-mentor: Shep Doeleman)
    - U.C. Berkeley undergraduate Jeremy Wayland (2017-18), including Summer Undergraduate Research Fellowship (SURF) 2018

OUTREACH & SERVICE

- Founded SCEECS Research Scholars Program (2025), a paid domestic and international research program funded by Anantua Group Simons Foundation grant
- Fort Worth Astronomical Society public talk on "A Tale of Two Shadows (and More!)" Mar. 2025 https://www.youtube.com/watch?v=DJHEJgxFxUU
- Interview appearance on "Astraveo Meet the Astronomers" Aug. 2024 https://www.youtube.com/watch?v=65kDSLyx2r4
- Simons Collaboration for Extreme Electrodynamics of Compact Sources (SCEECS) Summer School lecturer role at Wash. U. St. Louis Jun. 2024
- Served as NASA Postdoctoral Program fellowship reviewer Spring 2024
- TV appearance Nov. 2021 on BBC/NOVA Universe Ep. 4: Black Holes
- Served as NASA FINESST grant reviewer Mar. 2021
- Founded NSBP/SAO EHT Scholars Program (2020-), a paid summer internship at the Smithsonian Astronomical Observatory for undergraduate and graduate students affiliated with the National Society of Black Physicists—resulting in 4 university theses & 4 publications (h=4) to date
- Founded STEM Club, an organization uniting postdocs of color (PoC's) at Harvard through a monthly series of skill-building workshops and networking dinners starting March 2019
- Served on the American Astronomical Society Diversity and Inclusion Task Force – Data Collection and Metrics for Success Working Group, contributing to the 2018 Final Report: https://aas.org/files/aas_diversity_and_inclusion_task_force_final_report.pdf

SKILLS

- *C++, Mathematica, Matlab, Python, R, STATA, UNIX*
- National Strength and Conditioning Association: Certified Personal Trainer (2011)
- Five years of formal instruction in Latin; conversational in French and Haitian Creole

ACTIVITIES

Jun. 2000-Present **Prep for Prep,** NEW YORK, NY
A highly selective leadership development program that incorporates a rigorous 14-month academic component to prepare students for placement

in leading independent schools and continues to work closely with the students through high school graduation and beyond

Sep. 2008-Dec. 2011 **Powerlifting**

Trained for powerlifting competitions, best squat/bench/deadlift (lbs.) 358/309/573 (in competition, 220lbs. class, raw, no wraps), 365/350/600 (in training at ~210lbs., raw, no wraps, lifetime drug-free)

Oct. 2007-May 2010 **Klib Kreyòl (Haitian Students Alliance)**

Served as vice president, publicizing club history, visiting Haiti for outreach, and coordinating alumni-student events

Sep. 2006-Sep. 2009 **Yale Rugby**

Played flanker, center