

Curriculum Vitae – Keith A. Hawkins

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Research Interests

- Galactic and stellar archaeology • Near-field cosmology • Formation, assembly and structure of the Milky Way • Chemo-kinematic cartography • Stellar evolution • Data mining large surveys • Hyper/high-velocity stars • Hierarchical Bayesian statistical inferences • Stellar atmosphere and spectra • Stellar populations • Star clusters • Exoplanets host star characterization • Experimental Astrophysics (Pulsed Power)
- Chemical tagging

Education

2013–16 (conferred 04/17) <i>Advisor: Gerry Gilmore & Paula Jofré</i>	University of Cambridge <i>Thesis: Dissecting the Milky Way with Spectroscopic Surveys</i>	Ph.D. Astronomy
2009–13 <i>Minors in Math & African Studies</i> <i>Advisor: Adam Kraus, Doug Clowe</i>	Ohio University <i>Summa cum laude</i> <i>Thesis: Searching for Solar-Type Hypervelocity Stars.</i>	B.S. Astrophysics

Professional Appointments

2023–	Associate Professor, UNIVERSITY OF TEXAS AT AUSTIN	
2018–23	Assistant Professor, UNIVERSITY OF TEXAS AT AUSTIN	
2016–18	Simons Junior Research Fellow, COLUMBIA UNIVERSITY	
2013–16	Graduate Student Researcher/Marshall Scholar, CAMBRIDGE <i>Topic: Galactic Archaeology and Stellar Spectroscopy</i>	(Advisor: G. Gilmore)
2012–13	NSF REU Research Student, UNIVERSITY OF HAWAII <i>Topic: Low-Mass Hypervelocity stars</i>	(Advisor: A. Kraus)
2011–12	NSF REU Research Student, CALTECH <i>Topic: Planet-Metallicity Correlation in the Kepler Field</i>	(Advisor: J. A. Johnson)
2011–12	Undergrad Researcher/Goldwater Scholar, OHIO UNIV. <i>Topic: Optical Triggering TeV Blazar Observations</i>	(Advisor: M. Böettcher)
2010	NSF REU, NATIONAL OPTICAL ASTRONOMY OBSERVATORY <i>Topic: The CNO Cycle in the Open Cluster NGC 752</i>	(Advisor: S. Schuler)

Selected Awards & Honors

Vera Rubin Distinguished Visiting Professor (UC Santa Cruz)	2023
University of Texas at Austin College of Natural Science Excellence in Teaching	2022
Ohio University University-wide Commencement Speaker	2021
Flatiron Institute/CCA IDEA Scholar	2021–2022
Scialog Fellow in the Search for Life in the Universe	2020–
Kavli Fellow	2019
<u>Ohio University Ping Recent Graduate Alumni Award</u>	2018
<u>Simons Foundation Junior Research Fellowship</u>	2016–18
Scialog Fellow in Time Domain Astronomy	2018–2020
British Marshall Scholar (£45,000)	2013 – 2016
King's College, Cambridge Studentship (£62,000)	2013 – 2016
NSF Graduate Research Fellowship	2013 – 2014

US National Barry M. Goldwater Scholar (\$7,000)	2011 – 2013
Sigma Xi Int'l Conference Top Physics/Astro Talk	2011
Beth Brown Memorial Prize in Astronomy (\$1,000)	2011
Templeton Scholarship, Ohio U. (\$100,000)	2009 – 2013
Shipman Scholarship (Astro), Ohio U. (\$6,000)	2009 – 2013
National JSHS (Physical science) top prize (\$16,000)	2009 – 2013
Paricilla and Bart Bok Award in Astronomy (\$1,000)	2009

Grants

As PI or CoI: Since 2018, I have brought +\$706,000 as PI/CoPI and +\$1 million total in external funding to UT and I am a Co-I on a large (\$7M) grant from the Department of Energy

2021	National Science Foundation Astronomy and Astrophysics Grant (PI) - \$299,761 <i>Collaborative Research: Exploring the Galaxy and its White Dwarfs with the HET Dark Energy Experiment</i>
2020	NASA Exoplanet Research Grant (XRP) (CO-I; PI: Natalie Hinkle) - \$452,634 (\$47k to UT) <i>Chemical Assessment of M-dwarfs and Their Rocky Exoplanets to Improve Characterization in the TESS/JWST Era</i>
2019	National Science Foundation Astronomy and Astrophysics Grant (PI) - \$302,462 <i>The Origins of Fastest Stars in the Milky Way: A Chemo-Kinematic Perspective</i>
2019	Heising-Simons Foundation Time-Domain Astronomy Grant (as Co-PI) - \$165,000 (\$55k to UT) <i>Aging Gracefully: Stellar Ages Across the HR Diagram and Their Implications for Galactic Archaeology</i>
2018	Research Corporation Time-Domain Astronomy Grant (as Co-PI) - \$100,000 (\$49.5k to UT) <i>A Gaia-Enabled View of Chemical Homogeneity</i>
2017	DOE Center of Excellence (as CoI; PI: Don Winget) - \$7,000,000 (\$267,000 to my group) <i>Wootten Center for Astrophysical Plasma Properties</i>
2016	Simons Foundation Junior Research Fellowship (as Science PI) - \$381,000 <i>Chemical Cartography in the Gaia Era</i>
2016	Simons Center for Computation Astrophysics Travel Grant (as Science PI) - \$45,000
2012–16	Small Research / Travel Grants (Ohio Univ, and Cambridge Univ.) - £4,000
2016	International Astronomical Union Travel Grant - €1,000

Professional Services

International collaborations

– I am an active member of four of the largest Milky Way high-resolution spectroscopic surveys – SDSS-V, SDSS-IV, RAVE, Gaia-ESO and the future 4MOST surveys.

2022–present	Spokesperson, SDSS-V spectroscopic survey
2018–present	Active member, SDSS-IV/APOGEE-2 spectroscopic survey
2016–present	Active member, 4MOST spectroscopic survey
2013–present	Active member, RAVE spectroscopic survey
2013–present	Active member, Gaia-ESO spectroscopic survey

Public Code

I have worked heavily on improving and adding to the Brussels Automatic Code for Characterizing High accuracy Spectra (BACCHUS). This code is designed to derive the stellar parameters and chemical abundances from moderate-to-high resolution ($R \sim 11,000$ -150,000) stellar spectra. The code can be found [here](#). It is also on the Astrophysics Source Code Library (ascl:1605.004).

Publications

As of 05/2023, my publication record includes 101 publications, abstracts, or public code, of which 65 are peer-reviewed refereed publications in high-impact journals. My publications have received over 1750+ citations (hindex=31; up from 14 in 2018).

First/Second-Authored Publications

'*' indicates papers written with student I supervised

1. **Hawkins, K.**, *Chemical Cartography with LAMOST and Gaia Reveal Azimuthal and Spiral Structure in the Galactic Disk*, 2023, MNRAS, in press
2. **Hawkins, K.**, Price-Whelan A. M., Sheffield A. A., Subrahimovic A. Z., Beaton R. L., Belokurov V., Erkal D., et al. *On the Hunt for the Origins of the Orphan–Chenab Stream: Detailed Element Abundances with APOGEE and Gaia*, 2023, ApJ, 948, 123H
3. *Lucey M., *Al Kharusi, N., **Hawkins, K.**, Ting, Y.-S., et al., *Carbon-enhanced metal-poor star candidates from BP/RP spectra in Gaia DR3*, 2022, MNRAS, 523, 4049
4. Maas, Z., **Hawkins, K.**, Hinkel, N., Cargile, P., Janowiecki, S., Nelson, T., *The Galactic Distribution of Phosphorus: A Survey of 163 Disk and Halo Stars*, 2022, AJ, 164, 61
5. *Carrillo A., **Hawkins, K.**, Jofré P., de Brito Silva D., Das P., Lucey M., *The detailed chemical abundance patterns of accreted halo stars from the optical to infrared*, 2022, MNRAS, 513, 1557
6. *Manea C., **Hawkins, K.**, Maas Z. G. *A GALAH view of the chemical homogeneity and ages of stellar strings identified in Gaia*, 2022, MNRAS, 511, 2829
7. *Lucey M., **Hawkins, K.**, Ness M., Nelson T., Debattista V. P., Luna A., Bensby T., et al., *The COMBS Survey - III. The chemodynamical origins of metal-poor bulge stars*, 2022, MNRAS, 509, 122
8. **Hawkins, K.**, Zeimann, G., Sneden, C., et al., *The Stars of the HETDEX Survey I : Radial Velocities and Metal-Poor Stars from Low-Resolution Stellar Spectra*, 2021, ApJ, 911, 108
9. *Lucey, M., **Hawkins, K.**, Ness, M., Debattista, V. P., et al., *The COMBS Survey II: Distinguishing the Metal-Poor Bulge from the Halo Interlopers*, 2020, MNRAS, 501, 5981
10. **Hawkins, K.**, *Lucey, M., Curtis, J. *The Chemical Nature of the Young 120-Myr-old Nearby Pisces-Eridanus Stellar Stream Flowing through the Galactic Disk*, 2020, MNRAS, 496, 2422
11. **Hawkins, K.**, *Lucey, M., Ting, Y.-S., et al. *Identical or fraternal twins? : The chemical homogeneity of wide binaries from Gaia DR2*, 2020, MNRAS, 492, 1164
12. *Carrillo, A., **Hawkins, K.**, Bowler, B., *Know thy star, know thy planet: Chemo-kinematically characterizing TESS targets*, 2019, MNRAS, 491, 4365
13. *Lucey, M., **Hawkins, K.**, Ness, M., *The COMBS survey I: Chemical Origins of Metal-Poor Stars in the Galactic Bulge*, 2019, MNRAS, 488, 2283
14. Das, P., **Hawkins, K.**, Jofré, P., *Ages and kinematics of chemically selected, accreted Milky Way halo stars*, 2019, MNRAS, 493, 5195
15. **Hawkins, K.**, Wyse R. F. G. *The fastest travel together: chemical tagging of the fastest stars in Gaia DR2 to the stellar halo*, 2018, MNRAS, 481, 1028H
16. Ting, Y.-S., **Hawkins, K.**, Rix, H.-W., *A large and pristine sample of standard candles across the Milky Way: 100,000 red clump stars with 3% contamination*, 2018, ApJ, 858L, 7T
17. **Hawkins, K.**, Ting, Y.-S., Rix, H.-W., *Photospheric Diagnostics of Core Helium Burning in Giant Stars*, 2018, ApJ, 853, 20H

18. **Hawkins, K.**, Leistedt, B., Bovy, J., Hogg, D. W., *Red clump stars and Gaia: Calibration of the standard candle using a hierarchical probabilistic model*, 2017, MNRAS, 471, 722
19. Masseron, T., **Hawkins, K.**, *On the spectroscopic indistinguishability of red giant branch and red clump stars*, 2017, A&A, 597L, 3
20. Casey, A. R., **Hawkins, K.**, et al., *The RAVE-on catalog of stellar atmospheric parameters and chemical abundances for chemo-dynamic studies in the Gaia era*, 2017, ApJ, 840, 59
21. **Hawkins, K.**, Masseron, T., Jofré, P., Gilmore, G., Elsworth, Y., Hekker, S., *An Accurate and Self-Consistent Chemical Abundance Catalogue for the APOGEE/Kepler Sample*, 2016b, A&A, 594, 43
22. **Hawkins, K.**, Jofé, P., Heiter, U., Soubiran, C., Blanco-Cuaresma, S., Casagrande, L., Gilmore, G., Lind, K., Magrini, L., Masseron, T., Pancino, E., Randich, S., Worley, C. C., *Gaia FGK benchmark stars: new candidates at low-metallicities*, 2016, A&A, 592, A70
23. **Hawkins, K.**, Jofré, P., Gilmore, G., Masseron, T., *Using Chemical Tagging to Redefine the Interface of the Galactic Halo and Disk*, 2015b, MNRAS, 453, 758
24. **Hawkins, K.**, Kordopatis, G., Gilmore, G., Masseron, T., Wyse, R. F. G., Ruchti, G., Bienaym-Ål, O., Bland-Hawthorn, J., Boeche, C., Freeman, K., Gibson, B. K., Grebel, E. K., Helmi, A., Kunder, A., Munari, U., Navarro, J. F., Parker, Q. A., Reid, W. A., Scholz, R. D., Seabroke, G., Siebert, A., Steinmetz, M., Watson, F., Zwitter, T., *Characterizing the high-velocity stars of RAVE: the discovery of a metal-rich halo star born in the Galactic disc*, 2015a, MNRAS, 447, 2046
25. **Hawkins, K.**, Jofré, P., Gilmore, G., Masseron, T., *On the relative ages of the α -rich and α -poor stellar populations in the Galactic halo*, 2014, MNRAS, 445, 2575

Co-Authored Publications

26. El-Badry, Kareem; Rix, Hans-Walter; Cendes, Yvette, **Hawkins, K.**, ..., et al., *A red giant orbiting a black hole*, 2023, MNRAS, 521, 4323
27. Banks, Kirsten A.; Ho, Chantel Y. Y.; Martell, Sarah L., **Hawkins, K.**, ..., et al., *CN and CO features: key indicators of red giant evolutionary phase in moderate-resolution X-shooter spectra*, 2023, MNRAS, 523L, 80
28. Almeida, AndrÅs; Anderson, Scott F.; Argudo-FernÃandez, Maria, **Hawkins, K.**, ..., et al., *The Eighteenth Data Release of the Sloan Digital Sky Surveys: Targeting and First Spectra from SDSS-V*, 2022, ApJ, in press
29. El-Badry, Kareem; Rix, Hans-Walter; Cendes, Yvette, **Hawkins, K.**, ..., et al., *A Sun-like star orbiting a black hole*, 2023, MNRAS, 518, 1057E
30. Sneden, Christopher; Afsar, Melike; Bozkurt, Zeynep, **Hawkins, K.**, ..., et al., *The Active Chromospheres of Lithium-rich Red Giant Stars*, 2023, ApJ, 940, 12
31. *Lucey M., Pearson S., Hunt J. A. S., **Hawkins, K.**, Ness M., Petersen M. S., Price-Whelan A. M., et al., *Constraining the length and pattern speed of the Milky Way bar from direct orbit integration of APOGEE and Gaia data*, 2022, MNRAS, 520, 4779
32. *Carrillo A., Ness M. K., **Hawkins, K.**, Sanderson R., Wang K., Wetzell A., Bellardini M. A. *The relationship between age, metallicity, and abundances for disk stars in a simulated Milky Way galaxy*, 2023, ApJ, 942, 35C
33. Reggiani H., Ji A. P., Schlaufman K. C., Frebel A., Necib L., Nelson T., Hawkins K., et al. *The Chemical Composition of Extreme-velocity Stars*, 2022, AJ, 163, 252
34. Brito-Silva, D., Jofre, P., Bourbert, D., Koposov, S. E., Prieto, J. L., Hawkins, K., *J01020100-7122208: an*

- accreted evolved blue straggler that wasn't ejected from a supermassive black hole*, 2021, MNRAS, accepted
35. *Nelson, T., Ting, Y.-S., **Hawkins, K.**, et al. 2021 *Distant Relatives: The Chemical Homogeneity of Comoving Pairs Identified in Gaia*, 2021, ApJ, 921, 118N
 36. Tofflemire, B., Rizzuto, A., Newton, E. R., ..., **Hawkins, K.**, et al. *TESS Hunt for Young and Maturing Exoplanets (THYME). V. A Sub-Neptune Transiting a Young Star in a Newly Discovered 250 Myr Association*, 2021, AJ, 161, 171
 37. Sneden, C., Afsar, M., Bozkurt, Z., ..., **Hawkins, K.**, et al. *Chemical Compositions of Red Giant Stars from Habitable Zone Planet Finder Spectroscopy*, 2021, AJ, 161, 128
 38. Newton, E. R., Mann, A., Kraus, A., ..., **Hawkins, K.**, et al. *TESS Hunt for Young and Maturing Exoplanets (THYME). IV. Three Small Planets Orbiting a 120 Myr Old Star in the Pisces-Eridanus Stream*, 2021, AJ, 161, 65
 39. Poovelil, V., Zasowski, G., Hasselquist, S., ..., **Hawkins, K.**, et al. *Open Cluster Chemical Homogeneity Throughout the Milky Way*, 2020, ApJ, 903, 55
 40. *Lucey, M., Ting, Y.-S., Ramachandra, N., **Hawkins, K.** *From the Inner to Outer Milky Way: A Pristine Sample of 4.3 Million Red Clump Stars*, 2020, MNRAS, 495, 3087
 41. Ness, M., Johnston, K., Blancato, K., **Hawkins, K.** *In the Galactic disk, stellar [Fe/H] and age predict orbits and precise [X/Fe]*, 2019, ApJ, 883, 177
 42. Pope, B. J. S., Davies, Guy R., **Hawkins, K.**, ..., *Lucey, M., et al., *The Kepler Smear Campaign: Light curves for 102 Very Bright Stars*, 2019, ApJS, 244, 18
 43. Hall, O., Davies, G., Elsworth, Y., ..., **Hawkins, K.**, ... et al., *Testing asteroseismology with Gaia DR2: hierarchical models of the Red Clump*, 2019, MNRAS, 486, 3569
 44. de Jong, R. S., Agertz, O., Berbel, A., ..., **Hawkins, K.**, ..., et al., *4MOST: Project overview and information for the First Call for Proposals*, 2019, Msng., 175, 3D
 45. Nidever, D., Hasselquist, S., Hayes, C., **Hawkins, K.**, et al., *The Lazy Giants: APOGEE Abundances Reveal Low Star Formation Efficiencies in the Magellanic Clouds*, 2020, ApJ, 895, 88
 46. Koposov, S. E., Belokurov, V., Li, T. S., ..., **Hawkins, K.**, ..., et al., *Piercing the Milky Way: an all-sky view of the Orphan Stream*, 2019, MNRAS, 485, 4726
 47. Erkal, D., Belokurov, V., Laporte, C. F. P., ..., **Hawkins, K.**, ..., et al., *The total mass of the Large Magellanic Cloud from its perturbation on the Orphan stream*, 2019, MNRAS, 487, 2685
 48. Gebran, M., Agueros, M., **Hawkins, K.**, Schuler, S.; Morris, B., *Pushing Automated Abundance Derivations Into the Cool Star Regime: A Test Using Three G and Two K Stars in Praesepe*, 2018, ApJ, Accepted, arXiv:1812.08192
 49. Shetrone, M., Tayar, J., Johnson, J., ... **Hawkins, K.**, et al., *Constraining Metallicity Dependent Mixing and Extra Mixing Using [C/N] in α -rich Giants*, 2019, ApJ, 872..137
 50. De Rosa, G., Fausnaugh, M. M., Grier, C. J., ... **Hawkins, K.**, et al., *Velocity-resolved reverberation mapping of five bright Seyfert 1 galaxies*, 2018, ApJ, 866, 133D
 51. Jonsson, H., Allende Prieto, C., Holtzman, J., Feuillet, D., **Hawkins, K.**, et al., *APOGEE Data Releases 13 and 14: Stellar Parameter and Abundance Comparisons With Independent Analyses*, 2018, AJ, 156, 126
 52. *Mohammed, S., Schiminovich, D., **Hawkins, K.**, et al., *An Ultraviolet-Optical Color-Metallicity relation for Red Clump Stars using GALEX and Gaia*, 2018, ApJ, 872, 95
 53. Boubert, D., Guillochon, J., **Hawkins, K.**, Ginsburg, I., Evans, N. W., *Revisiting hypervelocity stars after Gaia DR2*, 2018, MNRAS, 479, 2789

54. Miglio, A., ..., **Hawkins, K.**, et al., *PLATO as it is: a legacy mission for Galactic archaeology*, 2017, AN, 338, 644
55. Jofré, P., Traven, G., **Hawkins, K.**, et al. *Climbing the cosmic ladder with stellar twins in RAVE with Gaia*, 2017, MNRAS, 472, 2517
56. Duffau, S., ..., **Hawkins, K.**, et al., *The Gaia-ESO Survey: Galactic evolution of sulphur and zinc*, 2016, A&A, 604A, 128
57. Jofré, P., ..., **Hawkins, K.**, et al. *Gaia FGK Benchmark stars: Opening the black box of stellar element abundance determination*, 2016, A&A, 601A, 38
58. Kunder, A., ..., **Hawkins, K.**, et al., *THE RADIAL VELOCITY EXPERIMENT (RAVE): FIFTH DATA RELEASE*, 2016, ApJ, 153, 75
59. Madler, T., Jofré, P., Gilmore, G., Worley, C. C., Soubiran, C., Blanco-Cuaresma, S., **Hawkins, K.**, et al., *Stellar twins measure the distance of the Pleiades*, 2016, A&A, 595, A59
60. Jofré, P., Masseron, T., Izzard, R. G., Van Eck, S., **Hawkins, K.**, et al., *Cannibals in the thick disk: the young α -rich stars as evolved blue stragglers*, 2016, MNRAS, 595, A60
61. Kunder, A., Rich, R. M., **Hawkins, K.**, et al., *A high-velocity bulge RR Lyrae variable on a halo-like orbit*, ApJ, 808, L12
Press Release: <http://www.aip.de/en/news/press/bulge>
62. *Jackson-Jones, R., Jofré, P., **Hawkins, K.**, et al., *The Gaia-ESO Survey: α -abundances of metal-poor stars*, 2014, A&A, 571L, 5J
63. Gupta, A., ..., **Hawkins, K.**, et al., *Multiwavelength intraday variability of the BL Lacertae S5 0716+714*, 2012, MNRAS, 425, 1357G
64. Aliu, E., ..., **Hawkins, K.**, et al., *Discovery of High-energy and Very High Energy γ -Ray Emission from the Blazar RBS 0413*, 2012, ApJ, 750, 94
65. Raiteri, C. M., ..., **Hawkins, K.**, et al., *The long-lasting activity of 3C 454.3. GASP-WEBT and satellite observations in 2008-2010*, 2011, A&A, 534A, 87R

Other Contributions

1. Han, Jiwon Jesse; Dey, Arjun; Price-Whelan, Adrian M., ..., **Hawkins, K.**, ..., et al., *Roman Telescope White Paper: NANCY: Next-generation All-sky Near-infrared Community survey*, Roman White Paper ; 2023arXiv230611784H
2. Dey, Arjun; Najita, Joan; Filion, Carrie, ..., **Hawkins, K.**, ..., et al., *Roman Telescope White Paper: RomAndromeda: The Roman Survey of the Andromeda Halo*, Roman White Paper ; 2023arXiv230612302D
3. Moravec, E.; Czekala, I., **Hawkins, K.**, et al., *Astro2020 APC White Paper: The Early Career Perspective on the Coming Decade, Astrophysics Career Paths, and the Decadal Survey Process*, Astro2020 White Paper
4. Jofré, P. Heiter, U., ..., **Hawkins, K.**, et al., *The Gaia FGK benchmark stars version 2.1*, RNAAS, 2018, arXiv:1808.09778
5. Masseron, T., Merle, T., **Hawkins, K.**, *BACCHUS: Brussels Automatic Code for Characterizing High accuracy Spectra*, Astrophysics Source Code Library, 2016, ascl:1605.004
6. **Hawkins, K.**, *The Ages and Fractions of the α -rich and α -poor populations in the Galactic halo*, Conference proceedings: Multi-Object Spectroscopy in the Next Decade: Big Questions, Large Surveys and Wide Fields, 2016, ASPC, 507, 59H
7. Gupta, A., Rani, B., ..., **Hawkins, K.** *Blazar S5 0716+714 is in the Optical Outburst State?*, 2009, The

Advising Experience

Since arriving at UT Austin, I have directly advised 1 postdoc, 4 PhD students, and 12 undergraduate students.

2023–	Jaden-Levine (Undergrad, REU Summer Intern (Penn)) <i>"Barium Rich Stars"</i>
2023–	Himank Sharma (Undergrad) <i>"Machine Learning with SDSS-V"</i>
2022–present	Zoe Hackshaw (PhD, UT Austin) <i>"Azimuthal Variations in elements the Galactic Disk"</i>
2020–present	Catherine Menea (PhD, UT Austin) <i>"Chemical tagging young stellar streams in the Galactic disk "</i>
2020–23	Zack Maas (Harlan J Smith Postdoc Fellow, UT Austin) <i>"The origin of the elements through stellar spectroscopy. "</i>
2019–23	Tyler Nelson (PhD, UT Austin) <i>"Stellar Spectroscopy of Cool Stars"</i>
2018–2022	Andreia Carrillo (PhD, UT Austin) <i>"Stellar Population Analysis in the Milky Way and Beyond"</i>
2018–23	Madeline Lucey (PhD, UT Austin) <i>"Metal-Poor Stars and Galactic Cartography in the Era of Gaia"</i>
2022–23	Diego Garza (Undergrad, TARUS Summer Intern (Univ. Chicago)) <i>"The Chemo-kinematics of Fast Stars"</i>
2022–23	Sarah Kane (Undergrad, REU Summer Intern (Penn)) <i>"Machine Learning with Gaia DR3"</i>
2022–present	Emily Wade (Undergrad, UT Austin) <i>"Hypervelocity Stars in HETDEX"</i>
2021–2022	Nariman Al Kharusi (Undergrad, UT Austin) <i>"CEMP Stars in Gaia DR3"</i>
2021–2022	Johnathan Rupert (Undergrad, UT Austin) <i>"Phosphorus Rich Stars with HPF"</i>
2020–2022	Kalie Wang (Undergrad, UT Austin) <i>"Chemical cartography with APOGEE DR16"</i>
2019–2021	Turner Woody (Undergrad REU, UT Austin) <i>"Metal-Poor stars in the RAVE Survey", Won a Barry Goldwater Scholarship for this work.</i>
2019–2021	Megan Thompson & Dustin Katzberg (Undergrad, UT Austin) <i>"The Chemical Homogeneity of Wide Binary Systems"</i>
2020-2021	Aryn Feldner (Undergrad, UT Austin) <i>"The photometric signatures of stellar atmospheric parameters"</i>
2019–2021	Alice Burington (Undergrad, UT Austin) <i>"The Chemo-kinematics of Metal-Poor Stars"</i>
2019–2021	Amaya Sinha (Undergrad, UT Austin) <i>"Chemical Cartography in VR"</i>

2017–2018	Steven Mohammed (PhD, Columbia University, co-supervised with David Schiminovich) <i>"An Ultraviolet-Optical Color-Metallicity relation for Red Clump Stars using GALEX and Gaia"</i>
2017–2018	Moyia McTier (PhD, Columbia University, co-supervised with Kathryn V. Johnston) <i>"The Chemical Properties of Moving Groups with Gaia DR2 and GALAH"</i>
2014–15	Jacob Arcangeli (Part III MS, University of Cambridge, co-supervised with Paula Jofré) <i>"Searching for Blue Stragglers in SDSS "</i>
2013–14	Reece Jackson-Jones (Part III MS, University of Cambridge, co-supervised with Paula Jofré) <i>"The distribution of the α elements of metal-poor stars in the Gaia-ESO Survey, "</i>

Teaching

Full Lecturer

Fall 22, Spring 23	Stellar Astrophysics (AST352K)	Undergrad level; UT Austin
Fall 2019, 2021	Stellar Structure & Evolution (AST383D)	Graduate level; UT Austin
Spring, Fall 2019-2020	Introduction to Astronomy (AST301)	Undergrad level; UT Austin
Fall 2010	Middle School Science/Mathematics	K-12 level; Cape Coast, Ghana

TA/Supervisor/Tutor

2014–16	Stellar Astrophysics	Undergrad level; Cambridge
2014–16	Galactic Dynamics	Undergrad level; Cambridge
2011–13	Introduction to Physics I/II	Undergrad level; Ohio Univ.

Guest Lecturing

2016	Stellar Astrophysics	Undergrad level; Columbia University
2017	Frontiers of Science	Undergrad level; Columbia University

Selected Academic Presentations

Invited/Plenary Talks (75 invited international colloquia/talks; 57 since arriving at UT)

Invited Colloquium : Joint Heidelberg (MPIA)	May. 2022
Invited Plenary / College-Wide : University of Tampa	Apr. 2022
Invited Colloquium : Flatiron Institute CCA / IDEA Fellow	Apr. 2022
Invited Colloquium : Johns Hopkins/STScI	Mar. 2022
Invited Seminar : Princeton/IAS (3 talks given)	Mar. 2022
Invited Colloquium : Notre Dame	Mar. 2022
Invited Talk : Princeton P4 (Physics Ambassadors Program)	Jan. 2022
Invited Panel : NSF AAPF Fellows Symposium	Jan. 2022
Invited Colloquium : UMass Amherst	Nov. 2021
Invited Conference Talk : Simon's Foundation	Oct. 2021
Invited Commencement Speech : Ohio University (delayed to 2021)	Sept. 2021
Invited Seminar : Max-Planck Institute for extraterrestrial Physics	Aug. 2021
Invited Lecture/Mentor : CCA/Flatiron Institute Dynamics Summer School	Jun. 2021
Invited Speaker : GALAH Science Conference	Jun. 2021
Invited Panelist and speaker : Int'l Machine Learning Club for Astronomy	May 2021
Invited AAS Division talk : AAS DDA Meeting	May 2021
Invited Speaker : UT Austin Dean's Scholars	Apr. 2021
Invited Panelist : UT Austin Diversity in CNS	Apr. 2021
Invited Speaker : OLLIE LAMP at UT Austin	Apr. 2021
Invited colloquium : Los Alamos Nat'l Lab	Apr. 2021
Invited colloquium : UCSC	Mar. 2021
Invited Science Series : Rider Univ.	Mar. 2021

Invited colloquium: MIT	Mar. 2021
Invited colloquium: Yale	Mar. 2021
Invited colloquium: Univ. of Kansas	Mar. 2021
Invited colloquium: UCSD/SDSU	Mar. 2021
Invited colloquium: Leiden Observatory	Mar. 2021
Invited colloquium: San Francisco State Univ.	Feb. 2021
Invited colloquium: Stanford/KIPAC	Jan 2021
Invited colloquium: CU Boulder	Jan 2021
Invited colloquium: Oregon State University	Jan. 2021
Invited AAS splinter: NASA Cosmic Origins Program at AAS237	Jan 2021
Invited AAS splinter: Galactic Science with Nancy Roman Telescope at AAS237	Jan 2021
Invited colloquium: IAS/Princeton	Nov. 2020
Invited Talk: Teaching Discovery Day, UT Austin	Oct. 2020
Invited colloquium: University of College London	Oct. 2020
Invited colloquium: Northwestern	Oct. 2020
Invited colloquium: Caltech	Oct. 2020
Invited colloquium: University of Michigan	Sept. 2020
Invited colloquium: University of Surrey	Sept. 2020
Invited HET Board Meeting Talk: The Stars of the HETDEX survey (UT Austin)	June. 2020
Invited colloquium: UCLA, Los Angeles, CA	Jan. 2020
Special Session at AAS235: Chemical Nucleosynthesis with MSE, Honolulu, HI	Jan. 2020
Invited colloquium: University of Arizona	Dec. 2019
Invited Talk: National Society of Black Physicists Meeting, Providence, RI	Nov. 2019
Invited colloquium: Montana State University	Oct. 2019
Invited colloquium: Indiana University	Nov. 2019
Invited colloquium: Texas A&M Univ., College Station, TX	Sept. 2019
Invited Talk: The Chemical Homogeneity of Wide Binaries, Tucson, AZ, USA	May 2019
Invited Review Talk: The Life and Times of the Milky Way, Shanghai, China	Nov. 2018
Invited Talk: Orion Meeting, McDonald Observatory, Fort Davis, TX, USA	Nov. 2018
Invited colloquium: Ohio State Univ., Columbus, OH, USA	Nov. 2018
Invited colloquium: Univ. of Chicago, Chicago, IL, USA	Oct. 2018
Invited Seminar: Ohio Univ., Athens, OH, USA	Oct. 2018
Invited colloquium: Texas State Univ., San Marcos, TX, USA	Sep. 2018
Invited Plenary: Pulse Power Workshop Sandia Nat'l Labs, Albuquerque, New Mexico, USA	Aug. 2018
Invited Talk: Board of Visitors Meeting, McDonald Observatory, Fort Davis, TX, USA	Jul. 2018
Invited colloquium: University of Diego Portales/UNAB joint colloquium, Santiago, Chile	Jul. 2018
Invited Plenary: UT Pop-up Institute on Exoplanet Habitability, Austin, TX USA	June 2018
Invited colloquium: Wesleyan Univ., Middletown, CT USA	Apr. 2018
Invited seminar: Harvard/CfA, Cambridge, MA USA	Apr. 2018
Invited colloquium: Boston University, Boston, MA USA	Apr. 2018
Invited colloquium: Univ. Washington Seattle, Seattle, WA USA	Dec. 2017
Invited colloquium: Carnegie Observatories, Pasadena, CA., USA	Oct. 2017
Invited colloquium: University of Toronto, Toronto, Canada	Sept. 2017
Invited colloquium: UC Berkeley, Berkeley, CA., USA	Sept. 2017
Invited keynote: Banneker & Aztlán Institute Symposium at Harvard, Cambridge, MA	Aug. 2017
Invited talk: Southern Cross 2017: The Science From Massively Multiplexed Surveys, Sydney, Australia	Jun. 2017
Invited seminar: Seminar at Rutgers University, New Brunswick, NJ	Mar. 2017
Invited colloquium: Columbia University, New York, NY, USA	Feb. 2017
Invited colloquium: University of Texas at Austin, Austin, TX, USA	Feb. 2017
Invited colloquium: LaGuardia Community College, NY, USA	Dec. 2016
Invited colloquium: American Museum of Natural History	Nov. 2016
Invited colloquium: University of Kent, Canterbury, UK	Jun. 2016
Invited seminar: Kapteyn Astronomical Institute, Groningen, NL	Mar. 2016
Contributed Talks/Workshops (30 international contributed talks, 5 int'l workshops)	

Gaia Hike, Vancouver, British Columbia, Canada	Jun. 2022
Gaia Fete, New York, NY	Jun. 2022
Scialog, Tuscon, AZ	Jun. 2022
Scialog, (virtual)	Jun. 2021
HETDEX Survey Conference, Austin, TX	Jan 2020
Astrohack Week, Cambridge, UK	Aug 2019
Invited Symposium: Kavli Frontiers of Science Symposium Irvine, CA	Feb. 2019
Decadal Survey Workshop for Early Career Scientists, Washington, DC	Oct. 2018
Aspen Center for Physics workshop on <i>the Milky Way System in the Era of Gaia</i> , Aspen, CO	Sept. 2018
Gaia DR2 Sprint, Flatiron Institute, New York City , NY	Jun. 2018
Simons' Society of Fellows Conference, Bluffton, SC, USA	Feb. 2018
Cosmos Seminar, UT Austin, Austin, TX USA	Dec. 2017
Galaxies Lunch, Columbia University, New York, NY, USA	Oct. 2017
Astrohack Week, Seattle, WA.	Aug. 2017
Gaia DR1 Sprint II, MPIA, Heidelberg , Germany	Jul. 2017
ASTROMETRY AND ASTROPHYSICS IN THE GAIA SKY, IAUS330, Nice, France	Apr. 2017
Asteroseismology and Galactic Archeology workshop, Bern, Switzerland	Dec. 2016
Seminar at Flatiron Institute, NY, USA	Nov. 2016
Gaia DR1 Sprint, New York, NY, USA	Oct. 2016
Seminar Columbia University, NY, USA	Sep. 2016
Seminar, New Mexico State Univ., NM, USA	Sept. 2016
'Stars on the Run', Bamberg, Germany	Aug. 2016
Industrial Revolution in Galactic Astronomy workshop, Sesto, Italy	Jul. 2016
IoA Wednesday Seminar, IoA, Cambridge, UK	Feb. 2016
AAS Winter Meeting 227 (Dissertation Talk), Kissimee, Fl., USA	Jan. 2016
Oxford Galaxies Seminar, Oxford, UK	May 2015
Next Generation Multi-Object Spectroscopy, La Palma, Spain	Mar. 2015
Research Highlights, King's College, Cambridge, UK,	Feb. 2015
IoA Wednesday Seminar, IoA, Cambridge, UK	Jan. 2015
Gaia-ESO Second Science Meeting, Porto, Portugal	Nov. 2014
Posters (10 International poster sessions)	
AAS Winter Meeting 237, Virtual,	Jan 2021
AAS Winter Meeting 235, Honolulu, HI	Jan. 2020
ESO Stellar Halos Conference, Garching, Germany	Feb. 2015
AAS Winter Meeting 225, Seattle, Washington	Jan. 2015
AAS Winter Meeting 221, Long Beach, CA	Jan. 2013
AAS Winter Meeting 219, Austin, TX	Jan. 2012
Sigma Xi International Research Conference, Raleigh, NC	Jan. 2011
National Society for Black and Hispanic Physicists, Austin, TX	Sep. 2011
AAS Winter Meeting 217, Seattle, WA,	Jan. 2011
AAS Winter Meeting 215, Washington, DC	Jan. 2011

Community Engagement & Press

In the Press

- 2022: *StarDate Magazine: Digging the Sky (profiles of my research group)* [Link](#)
- 2021: *Interview with Keith Hawkins : Aspen Colorado Public Radio (kdnk)* [Link](#)
- 2020: *HETDEX Project on Track to Probe Dark Energy : UT Austin* [Link](#)
- 2020: *The Galactic Year : Live Science* [Link](#)

- 2020: *Black in Academia: An interview with UT astronomer Keith Hawkins* : Austin-American Statesman [Link](#)
- 2019: *Twin Astronomer Probes 'DNA' of Twin Stars to Reveal Family History of Milky Way* : UTexas News [Link](#)
- 2018: *Scientists Unveil Precise Map Of More Than A Billion Stars* : NPR [Link](#)
- 2018: *The Milky Way's Speediest Stars Could Solve a 50-Year-Old Mystery* : Scientific American [Link](#)
- 2018: *The New Biography of the Sun* : Scientific American [Link](#)
- 2015: *Starry surprise in the bulge: encounter of a halo passerby* : AIP News [Link](#)
- 2013: *Ultrafast Stars Discovered Racing Through Milky Way* : Space.com [Link](#)
- 2013: *Arts&Science Forum: Hawkins Shares Passion for Science, Prepares for Cambridge* : Ohio Univ. [Link](#)
- 2012: *Athens News: OU junior reaches for the stars in his chosen discipline* : Ohio Univ. [Link](#)
- 2011: *A Stellar Admirer: Caltech profile* : Caltech [Link](#)
- 2011: *Ohio University Compass: Sophomore Keith Hawkins Wins Goldwater Scholarship* : Ohio Univ. [Link](#)
- 2010: *Ohio University Perspective Magazine: Star Struck: Crush Inspires Cosmic Research* : Ohio Univ [Link](#)

Selected Outreach

Public observing organizer <i>executed public outreach evenings at various international locations aimed at both underrepresented minorities and the general public</i>	2009–
Founded Science Fair Bootcamp for Low-Income Students <i>Developed and executed a week-long science fair workshop for grades 6-12</i>	2011-12
Selected public lectures and Panels:	
The Royal Astronomical Society of Canada	Oct. 2021
Family Day, CNS UT Austin	Apr. 2022
San Antonio Astronomy on Tap	June. 2022
Osher Lifelong Learning Institute	Apr. 2021
K12 Science Olympiad keynote speaker (UT Invitational)	Oct. 2020
Science Mill annual benefit: Johnson City	Sept. 2020
Plano East Senior High School Astro Club	Sept. 2020
Making Space for All Webinar : Ohio State Univ.	June 2020
McDonald Observatory Board of Visitors Summer Meeting	Jul. 2020
Astronomy on Tap at Jester King : Austin, TX	Feb. 2020
Women in Physics Panel : College Station, TX	Feb. 2020
Astronomy on Tap at Vista Brewing : Austin Tx	Nov. 2019
Family Day at UT Austin : Austin Tx	Oct. 2019
McDonald Observatory Board of Visitors Summer Meeting	Jul. 2019
Osher Lifelong Learning Institute	Apr. 2019
UT Austin Astronomy Society	Jan. 2019
Astronomy on Tap, Austin, TX	Dec. 2018
Texas State Univ. Astronomy Society	Nov. 2018
Westport Astronomy Club, Westport, CT	2018
Columbia Univ. Outreach Night, Westport, CT	2017
Papworth Astronomy Club, Cambridge	2016
Letchworth Astronomical Society Meeting, Cambridge	2015
BAME minority summer school invited speaker, Cambridge	2014–15
Emeriti Professor guest lecture	(2012, Athens)

Professional Activities

Committee Work

2022–	Spokesperson for the Sloan Digital Sky Survey V
2021–	Leadership Team, NASA's Stars Science Interest Group
2020–21	Chair, Graduate Program Task Force (UT Astro)
2020	College of Natural Science Dean's Diversity Action Committee
2020, 2022	Member, UT Faculty Search Committee
2020–	Member, Faculty Advisory Council
2020	Member, McDonald Observatory Superintendent Search Committee
2020	NSF Astronomy & Astrophysics Grant Review Panel
2019–	Assistant Advisor for Undergraduate Studies UT
2019–21	Member of the Panel on Enabling Foundations, NAS Decadal Survey
2019–21	Lead, UT Austin Colloquium Committee
2019–	Member, UT Austin Goldwater Selection Committee
2018–19	Member, UT Austin Grad Admission
2018–19	Member, UT Austin REU Admissions
2017–21	Member/webmaster, AAS Committee for the Status of Minorities in Astronomy
2021–	Member, British Marshall Scholarship Selection Committee (Houston Region)
2017, 2020,	Member, British Marshall Scholarship Selection Committee (New York Region)

2018	Member, Columbia Univ. renovation
2017–18	Member, Columbia Univ. colloquium
2013–18	Member, Ohio Univ. HTC Diversity
Referee & TACs	
2020–	Grant Reviewer: NSF AAG, Cottrell Scholars Program, Templeton foundation
2016–	Journal referee: ApJ, A&A, MNRAS, Open Astronomy, Nature, Nature Astronomy
2017–	TAC: Gemini South, McDonald, HST, NOIR Lab
Conference Organizing	
2022	Scientific Organization Committee SDSS-V Science Fest
2020	Chairing sessions for the SDSS-VI conference
2019	Co-Led the organization of the Simons Society of Fellows Symposium
2019–21	Co-organizer for a summer 2020/21 Aspen Center for Physics Workshop
PhD/MS Committee or Examiner	
2021–	K. Franson (UT Austin, PhD)
2021–	R. Kerr (UT Austin, PhD)
2020–	Q. Tran (UT Austin, PhD)
2020–	P. Cho (UT Austin, PhD)
2019–	K. Sullivan (UT Austin, PhD)
2019–22	D. Krolikowski (UT Austin, PhD)
2019–22	J. Champagne (UT Austin, PhD)
2019–21	P. Drew (UT Austin, PhD)
2018–21	Z. Vanderbosh (UT Austin, PhD)
2019	Moyia McTier (Columbia Univ., PhD)
2019	T. Marchetti (Linden Observatory, PhD)
2017	A. Huges (Macquarie Univ., MS)
Professional membership	
2010–	Member, American Astronomical Society
2014–16	Chair, King’s College Graduate Society

Awarded Telescope Time

McDonald Obs. HET (HPF)	<i>40+ hours (CoI),</i>
McDonald Obs. 2.7m (Tull)	<i>11/14 Nights (as PI/as Co-I),</i>
McDonald Obs. 2.7m (VIRUS-W)	<i>3 Nights (as PI)</i>
MDM 1.3m (Three Instruments)	<i>16 Nights (as Co-I)</i>
KPNO 2.1m (GoldCam)	<i>3 Nights (as Co-I)</i>
MDM 2.4m (Three Instruments)	<i>8 Nights (as Co-I)</i>
Palomar 5m (Double Spectrograph)	<i>9 Nights (as Co-I)</i>
APO 3.5m (ARCES Spectrograph)	<i>Many half nights (as Co-I)</i>
Magellan 6.5m (Mike Spectrograph)	<i>7 Nights (as Co-I)</i>
VLT (X-SHOOTER)	<i>2 nights (as CoI, PI: Sarah Martell)</i>
<i>Resolving asteroseismic classifications with X-SHOOTER spectroscopy</i>	

Skills

Computer Language	Python, C, SQL/ADQL, HTML5, CSS, Matlab, L ^A T _E X, bash/shell, git,
Other Software	BACCHUS, MOOG, IRAF, TOPCAT, t-SNE, MS office, SPECTRE, iSpec, SMH, STAN