Curriculum Vitae

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Scientific Interests:	laboratory astrophysics of measurements (line profiles, opacities); fluid mixing and crystallization in white dwarf stars; non-linear phenomena including convection; asteroseismology/internal structure of stars; cooling theory/age dating of white dwarfs; accretion and settling of metals on white dwarfs; effect of magnetic fields on convection and/or pulsation; modeling of "Dark Stars" and dark matter-heated white dwarfs
Appointments:	
2018–present	Deputy Director of the Wootton Center for Astrophysical Plasma Properties, University of Texas
2015–present	Assistant Professor of Practice, TIDES/CNS, University of Texas
2009–present	Research Scientist, Department of Astronomy, University of Texas
2006–present	Science Director, Delaware Asteroseismic Research Center
2004–2009	Research Associate, Department of Astronomy, University of Texas
2000–2004	Postdoctoral Research Associate, Institute of Astronomy, University of Cambridge, United Kingdom
1998–2000	Postdoctoral Research Associate, Institute of Astronomy, University of Vienna, Austria
1995–1998	Graduate Research Assistant, University of Texas at Austin
1997	Visiting Lecturer in Astronomy, Austin Community College
1994	Research Assistant, Applied Research Laboratories , UT-Austin
1992–1995	Teaching Assistant, University of Texas at Austin
1991–1992	Teaching Assistant, Physics Department, Princeton University
1988	Summer Research Assistant, Institute for Fusion Studies, UT-Austin
Education:	
1992–1998	Department of Astronomy, University of Texas at Austin Ph.D. thesis (Dec. 1998): "The Evolution and Pulsation of Crystallizing White Dwarf Stars" Masters thesis (Dec. 1994): "The Frequency Spectra of Weakly Magnetic White Dwarf Stars"
1988–1992	M.A. Physics, Department of Physics, Princeton University
1984–1988	B.S. Physics, University of Texas at Austin
Languages:	English (native), German (fairly fluent)

Invited talks and honors:

Invited Talk, Current Challenges in the Physics of White Dwarf Stars, Santa Fe, NM, Spring 2024
Invited Talk, IAU Symposium S350 on Laboratory Astrophysics, Cambridge, UK, Spring 2019
Invited Talk, IAU Focus Meeting 17, Honolulu, HI, Summer 2015
Invited Review, Asteroseismology in the Space Age, Santa Barbara, CA, Fall 2011
Invited Review, Stellar Pulsation: Challenges for Theory and Observation, Santa Fe, NM, Summer 2009
Invited Review, Unsolved Problems in Astrophysics, Cambridge, UK, Summer 2007
Departmental Colloquium, *HAO*, Fall 2005
Invited Talk, National Astronomy Meeting, Dublin, Spring 2003
Physics and Astronomy Colloquium, University of Aarhus, Spring 2002
Co-editor of *Proceedings of the 6th Vienna Workshop in Astrophysics*, 1999
Invited Review Talk, The 11th European Workshop on White Dwarfs, 1998

Fellowships:

David Bruton, Jr., Fellowship, 1996–1997
University Continuing Fellowship, 1994–1995
Fred T. Goetting, Jr., Memorial Endowed Presidential Scholarship, 1994–1995
National Science Foundation Graduate Fellowship, 1988–91

Teaching/outreach:

2009–present	Taught Astronomy Stream of Freshman Research Initiative (FRI), UT-Austin
2013	Taught graduate course in asteroseismology at UT-Austin
2012	Taught Introductory Astronomy (AST 301) at UT-Austin
2006–2008	Taught "Physics of Waves" at Texas State University, San Marcos, TX
2002 & 2004	Graduate Student Lectures on Star Formation and Stellar Pulsation, IoA, Cambridge, UK
2003	Talk at meeting of the Cambridge Astronomical Association
2002	Final four lectures of Part I Mathematics, IoA, Cambridge, UK
2001	Lectures at Alston Hall Amateur Astronomy Retreat
1997	Lecturer in Astronomy, Austin Community College
1992–1995	Teaching Assistant, University of Texas at Austin
1991–1992	Teaching Assistant, Physics Department, Princeton University

Main collaborators:

UFRGS, Brazil	S. O. Kepler
Penn State, Worthington-Scranton, USA	A. Bischoff-Kim
Sandia National Laboratory, USA	J. Bailey
University of North Carolina, USA	J. J. Hermes
Max Planck Institute, DEU	K. Bell
Sandia National Laboratory, USA	T. Gomez
University of Cambridge, UK	D. O. Gough
Gemini Observatory, Hawaii, USA	S. & A. Kleinman
University of Delaware, USA	J. Provencal
Embry-Riddle Aeronautical University, USA	T. von Hippel
University of Texas, USA	D. E. Winget
Texas A&M–Commerce, USA	K. A. Williams

Citizenship	USA
Students Supervised	Agnes Bischoff-Kim (2007, PhD, co-supervisor) JJ Hermes (2013, PhD, co-supervisor) Ross Falcon (2014, PhD, co-supervisor) Thomas Gomez (2017, PhD, co-supervisor) Keaton Bell (2017, PhD, co-supervisor) Marc Schaeuble (2018, PhD, co-supervisor) Zach Vanderbosch (2021, PhD, co-supervisor) Patty Cho (2024, PhD, co-supervisor)
Current Students	Jackson White (est. 2026, PhD, co-supervisor) Malia Kao (est. 2026, PhD, co-supervisor) Bryce Hobbs (est. 2026, PhD, co-supervisor)

Grants Received

Title of Grant	Role	Agency*	Amount	Duration
The Wootton Center for Astrophysical Plasma Properties (WCAPP)	Co-PI	DOE/NNSA	$6,9000,000	2023–28
The Wootton Center for Astrophysical Plasma Properties (WCAPP)	Co-PI	DOE/NNSA	$7,000,000	2017–23
Mapping the distribution of the planetary debris accreted across the surface of the white dwarf G29-38	PI	NASA/HST	$45,381	2021–23
Seismologically Mining White Dwarfs in the K2 Archive for their Rotation PI Rates, Convection Properties, and Chemical Profiles	PI	NASA/ADAP	$334,511	2020–22
Stellar Atmospheres In The Laboratory: A Testbed For Fundamental Atomic Processes	PI	NSF	$468,000	2017–22
The ELM Survey: Short Period Binary White Dwarfs as Supernova Progenitors, Gravitational Wave Sources, and Probes of Extreme Stellar Evolution	PI	NSF	$468,000	2013–17
White Dwarf Photospheres in the Laboratory: A Testbed for Fundamental Atomic Processes	Co-I	DOE	$675,000	2013–17
Precision Light Curves as Probes of Fundamental Physics	PI	NSF	$347,000	2005–08
Fundamental Astrophysics from Precision Asteroseismology	PI	NSF	$566,803	2010–13
Spectral Line Broadening in White Dwarf Photospheres	Co-I	SNL	$150,000	2011–13
Research in Stellar Seismology	PI	CTF	$250,000	2006–12
Pulsating White Dwarfs as Dark Matter Detectors	Co-I	NHARP	$146,534	2008–10
White Dwarf Atmospheres from Computer to Laboratory to Telescope	Co-I	NHARP	$148,594	2010–12
New Leverage on Stellar Evolution: NASA Archives and Bayes	Co-I	NASA	$391,574	2011–14
Mapping the Convection Zones of Gamma Doradus Stars	PI	NASA	$76,000	2012–14

*NSF=National Science Foundation, DOE=Department of Energy, NNSA=National Nuclear Security Administration, NASA=National Aeronautics and Space Administration, SNL=Sandia National Laboratories, CTF=Crystal Trust Foundation, NHARP= Norman Hackerman Advanced Research Program