James W. Johnson

Presidential Fellow

The Ohio State University
Department of Astronomy
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https://jamesjohnson.space

Education

Aug 2017 – Present	**The Ohio State University**	Columbus, Ohio
	Ph.D., Department of Astronomy	Expected Summer 2023
	M.S., Department of Astronomy	Nov 20, 2019
	Advisor: David H. Weinberg	
	GPA: 4.000 / 4.000	
Aug 2013 – May 2017	**Vanderbilt University**	Nashville, Tennessee
	B.A., Major in Physics, Minor in Astronomy	May 12, 2017
	Highest Honors in Astronomy	Thesis Advisor: Andreas A. Berlind
	GPA: 3.797 / 4.000	*cum laude*

Research

Metrics: 4 lead author publications, 8 co-author publications, 130+ citations, h-index: 7
A full list of my publications in peer-reviewed astronomical journals is attached.

NASA ADS Libraries

All Papers	https://ui.adsabs.harvard.edu/user/libraries/rIqfpNKmSdaOMIAhkk2VzQ
Lead-Author	https://ui.adsabs.harvard.edu/user/libraries/go1WSseGTMeft2SxdESAgw
Co-Author	https://ui.adsabs.harvard.edu/user/libraries/sZkjSf_XRSKSRykqBe6B_w

Conferences & Talks

Aug 11 – 17, 2021	**Sloan Digital Sky Survey Collaboration Meeting** (contributed talk)
Jun 22 – 24, 2021	**2021 GALAH Science Meeting** (contributed talk)
Jun 22 – 26, 2020	**Sloan Digital Sky Survey Collaboration Meeting** (contributed talk)
Jun 1 – 3, 2020	**236th American Astronomical Society Meeting** (iPoster-Plus)
May 28, 2019	**Inter[stellar+galactic] Medium Program of Studies Seminar**
	University of California at Santa Cruz

Mentoring

May 2022 – Present	**Daniel Boyea**, The Ohio State University
	Summer Undergraduate Research Program, Senior Thesis

Open Source Software Development

Versatile Integrator for Chemical Evolution (VICE)
Python Package, Lead Developer (Spring 2018 – Present)
Documentation: https://vice-astro.readthedocs.io
Source Code: https://github.com/giganano/VICE.git
Install: https://pypi.org/project/vice

Teaching

The Ohio State University, Dept. of Astronomy: Python Bootcamp

May 2020, 2021, 2022 — ~20 hours of instruction, sole designer and instructor
Source Material: https://github.com/giganano/PythonBootcamp
Recordings: https://jamesjohnson.space/bootcamp_recordings.html

The Ohio State University, Dept. of Astronomy: Graduate Teaching Assistant

Aug 2018 – Dec 2020	**Astronomy 1101: From Planets to Cosmos** (5 sections)
Aug 2019 – Dec 2019	**Astronomy 1142: Black Holes** (1 section)
Jan 2019 – May 2019	**Astronomy 1221: Astronomy Data Analysis** (1 section)
Aug 2018 – Dec 2018	**Astronomy 1140: Planets and the Solar System** (1 section)

Honors & Awards

Beginning May 2022	**Presidential Fellowship, The Ohio State University** Most prestigious award given by the Graduate School
Aug 2017 – Aug 2018	**Graduate Fellowship, The Ohio State University**
Spring 2017	**Larry Ross Cathey Award** Vanderbilt University, Department of Physics & Astronomy Outstanding graduating senior studying astronomy
Inducted Spring 2015	**Sigma Pi Sigma Physics National Honor Society**
7 of 8 Semesters	**Vanderbilt University Dean's List**

Broader Activities

Jan 2022 – Present	**Polaris Leadership Committee** Graduate student led organization dedicated to improving the retention of physics students from marginalized backgrounds
Aug 2022	**Undergraduate Residential Summer Access Program** Academic Facilitator
Sep 2021 – Present	**"Galaxy Hour" Weekly Research Meeting Co-Organizer** The Ohio State University, Department of Astronomy
Summer 2018 – Present	**Friends of Ohio State Astronomy & Astrophysics**
Fall 2017 – Present	**Diversity Journal Club Participant** The Ohio State University, Department of Astronomy
Jun 15 – 21, 2020	**Real Scientists Germany Online Outreach** Blog: https://tinyurl.com/jamesjohnsonrealscientistsDE Twitter: https://twitter.com/realsci_DE
Spring 2019	**Ohio Science Olympiad: Volunteer**
Jan 2015 – Apr 2017	**Undergraduate Tutor** Vanderbilt University, Department of Physics & Astronomy
Summer 2015	**Cosmic Ray Observatory Project** University of Nebraska-Lincoln, Department of Physics Lab technician: instrumentation

List of Peer-Reviewed Publications

Lead-Author Publications (reverse chronological order)

1. *Empirical Constraints on the Nucleosynthesis of Nitrogen*, **James W. Johnson**, David H. Weinberg, Fiorenzo Vincenzo, Jonathan C. Bird, Emily J. Griffith
   2022, Submitted to MNRAS, under peer review arxiv:2202.04666
2. *Stellar Migration and Chemical Enrichment in the Milky Way Disc: A Hybrid Model*
   James W. Johnson, David H. Weinberg, Fiorenzo Vincenzo, Jonathan C. Bird, Sarah R. Loebman, Alyson M. Brooks, Thomas R. Quinn, Charlotte R. Christensen, Emily J. Griffith
   2021, Submitted to MNRAS, 508, 4484 arxiv:2103.09838
3. *The Impact of Starbursts on Element Abundance Ratios*
   James W. Johnson, David H. Weinberg
   2020, MNRAS, 498, 1364 arxiv:1911.02598
4. *The Secondary Spin Bias of Dark Matter Haloes*
   James W. Johnson, Ariyeh H. Maller, Andreas A. Berlind, M. Sinha, J.K. Holley-Bockelmann
   2019, MNRAS, 486, 1156 arxiv:1812.02206

Contributing-Author Publications (reverse chronological order)

1. *Birth of the Galactic Disk Revealed by the H3 Survey*
   Charlie Conroy, et al., incl. **James W. Johnson**
   2022, submitted to ApJ, under peer review arxiv:2204.02989
2. *Primordial Helium-3 Redux: The Helium Isotope Ratio of the Orion Nebula*
   Ryan J. Cooke, Pasquier Noterdaeme, **James W. Johnson**, et al.
   2022, submitted to ApJ, under peer review arxiv:2203.11256
3. *Residual Abundances in GALAH DR3: Implications for Nucleosynthesis and Identification of Unique Stellar Populations*
   Emily J. Griffith, David H. Weinberg, Sven Buder, Jennifer A. Johnson, **James W. Johnson**, Fiorenzo Vincenzo
   2021, submitted to ApJ, under peer review arxiv:2110.06240
4. *Chemical Cartography with APOGEE: Mapping Disk Populations with a Two-Process Model and Residual Abundances*
   David H. Weinberg, et al., incl. **James W. Johnson**
   2021, Submitted to ApJ, under peer review arxiv:2108.08860
5. *CNO Dredge-Up in a Sample of APOGEE/Kepler Red Giants: Tests of Stellar Models and Galactic Evolutionary Trends of N/O and C/N*
   Fiorenzo Vincenzo, David H. Weinberg, Josefina Montalbán, Andrea Miglio, Saniya Khan, Emily J. Griffith, Sten Hasselquist, **James W. Johnson**, Jennifer A. Johnson, Christian Nitschelm, Marc H. Pinsonneault
   2021, Submitted to MNRAS, under peer review arxiv:2106.03912
6. *The Impact of Black Hole Formation on Population Averaged Supernova Yields*
   Emily J. Griffith, Tuguldur Sukhbold, David H. Weinberg, Jennifer A. Johnson, **James W. Johnson**, Fiorenzo Vincenzo
   2021, Submitted to ApJ, accepted for publication arxiv:2103.09837

7. *Nucleosynthesis Signatures of Neutrino-Driven Winds from Proto-Neutron Stars: A Perspective from Chemical Evolution Models*
   Fiorenzo Vincenzo, Todd A. Thompson, David H. Weinberg, Emily J. Griffith, **James W. Johnson**, Jennifer A. Johnson
   2021, Submitted to MNRAS, accepted for publication arxiv:2102.04920
8. *The Similarity of Abundance Ratio Trends and Nucleosynthetic Patterns in the Milky Way Disk and Bulge*
   Emily J. Griffith, David H. Weinberg, Jennifer A. Johnson, Rachael Beaton, D.A. García-Hernández, Sten Hasselquist, Jon Holtzman, **James W. Johnson**, Henrik Jönsson, Richard R. Lane, David M. Nataf, Alexandre Roman-Lopes
   2021, ApJ, 909, 77 arxiv:2009.05063