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

Author of 12 articles in refereed astronomical journals: 4 lead-author, 8 co-author
A full list of my publications is attached.
130+ citations, h-index = 7

Seminars and Conference Presentations

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
Project: *Empirical Constraints on the Nucleosynthesis of Carbon*

Open Source Software Development

Versatile Integrator for Chemical Evolution (VICE)
Lead developer and license owner (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

NASA ADS Libraries

All My 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

Lead-Author Publications (reverse chronological order)

1. *Empirical Constraints on the Nucleosynthesis of Nitrogen*
   J. W. Johnson, D. H. Weinberg, F. Vincenzo, J. C. Bird, E. 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*
   J. W. Johnson, et al.
   2021, MNRAS, 508, 4484 arxiv:2103.09838

3. *The Impact of Starbursts on Element Abundance Ratios*
   J. W. Johnson, D. H. Weinberg
   2020, MNRAS, 498, 1364 arxiv:1911.02598

4. *The Secondary Spin Bias of Dark Matter Haloes*
   J. W. Johnson, A. H. Maller, A. 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*
   C. Conroy, et al., incl. **J. 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*
   R. J. Cooke, P. Noterdaeme, **J. W. Johnson**, M. Pettini, L. Welsh, C. Peroux, M. T. Murphy, D. H. Weinberg
   2022, ApJ, 932, 60 arxiv:2203.11256

3. *Residual Abundances in GALAH DR3: Implications for Nucleosynthesis and Identification of Unique Stellar Populations*
   E. J. Griffith, D. H. Weinberg, S. Buder, J. A. Johnson, **J. W. Johnson**, F. Vincenzo
   2021, ApJ, 931, 23 arxiv:2110.06240

4. *Chemical Cartography with APOGEE: Mapping Disk Populations with a Two-Process Model and Residual Abundances*
   D. H. Weinberg, et al., incl. **J. W. Johnson**
   2021, ApJS, 260, 32 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*
   F. Vincenzo, et al., incl. **J. W. Johnson**
   2021, submitted to MNRAS, under peer review arxiv:2106.03912

6. *The Impact of Black Hole Formation on Population Averaged Supernova Yields*
   E. J. Griffith, T. Sukhbold, D. H. Weinberg, J. A. Johnson, **J. W. Johnson**, F. Vincenzo
   2021, ApJ, 921, 73 arxiv:2103.09837

7. *Nucleosynthesis Signatures of Neutrino-Driven Winds from Proto-Neutron Stars: A Perspective from Chemical Evolution Models*
   F. Vincenzo, T. A. Thompson, D. H. Weinberg, E. J. Griffith, **J. W. Johnson**, J. A. Johnson
   2021, MNRAS, 508, 3499 arxiv:2102.04920

8. *The Similarity of Abundance Ratio Trends and Nucleosynthetic Patterns in the Milky Way Disk and Bulge*
   E. J. Griffith, et al., incl. **J. W. Johnson**
   2021, ApJ, 909, 77 arxiv:2009.05063