

ANTONIO J. PORRAS-VALVERDE

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EMPLOYMENT

Yale University

Dept. of Astronomy

August 2023 - Present

New Haven, CT

- Postdoctoral position working on black hole evolution and its relationship with galaxies. I primarily worked with Prof. Priya Natarajan.

Vanderbilt University

Graduate Research Assistant

August 2018 - May 2023

Nashville, TN

- I earned my Ph.D. at Vanderbilt, working with Prof. Kelly Holley-Bockelmann and Andreas Berlind. I served as the web administrator for the department, organized Astronomy Journal Club, and was part of the Fisk-Vanderbilt Social Justice Committee.

EDUCATION

Vanderbilt University

Dept. of Physics and Astronomy. Doctor of Philosophy in Astrophysics

August 2018 - May 2023

Nashville, TN

- Advisors: Prof. Kelly Holley-Bockelmann and Andreas Berlind
- Dissertation title: Understanding the Role of Angular Momentum and Supermassive Black Holes in Shaping Present-Day Galaxies

Fisk University

Dept. of Life and Physical Sciences. Master of Arts in Physics

August 2016 - August 2018

Nashville, TN

- Advisors: Prof. Andreas Berlind and Kelly Holley-Bockelmann

University of North Carolina

Dept. of Mathematics. Bachelor of Arts in Mathematics

August 2012 - May 2015

Chapel Hill, NC

- Advisor: Prof. Laura Miller, fluid dynamics research project

AWARDS

Vanderbilt Basic Sciences' Hispanic and Latin Heritage Month Award

October 2022

- External committee who voted on the basis of your efforts in science and creating a more diverse STEM field.

Stanford Postdoctoral Recruitment Initiative in Science and Medicine

August 2022

- Postdoctoral training workshop

International Astronomical Union, Heising-Simons foundation

August 2022

- Travel awards

North Carolina State University

January 2022

- Building Future Faculty fellowship program

Flatiron Institute Center for Computational Astrophysics

August 2021

- Pre-doctoral fellowship

National Science Foundation

December 2020

- Nominated for the Presidential Awards for Excellence in Mathematics and Science Teaching by Dr. Anthony Beasley, Director of the National Radio Astronomy Observatory

American Physical Society

August 2018

- Travel award for Excellence in Graduate Research

Vanderbilt University

- Summer 2019: Graduate Student Travel award
- Summer 2018: McMinn Summer Research award

National Science Foundation Graduate Research Fellowship Program

April 2016

- Honorable Mention

National Science Foundation REU Fellowships

- National Radio Astronomy Observatory - Charlottesville, VA - Summer 2016
- National Radio Astronomy Observatory - Socorro, NM - Summer 2015
- University of North Carolina - Chapel Hill, NC - Summer 2014
- University of Toledo - Toledo, OH - Summer 2012

PEER-REVIEWED PUBLICATIONS

3. **Antonio J. Porras-Valverde**, Kelly Holley-Bockelmann, Andreas A. Berlind, and Adam R. H. Stevens. Angular momentum and Morphological Sequence of Massive Galaxies through DARK SAGE. 2021. *ApJ*, 923, 2. doi:10.3847/1538-4357/ac31a5
2. Alexander P. Hoover, **Antonio J. Porras**, and Laura A. Miller. Pump or coast: The role of resonance and passive energy recapture in medusan swimming performance. 2019. *Journal of Fluid Mechanics*, 863, 1031-1061. doi:10.1017/jfm.2018.1007
1. **A. J. Porras**, S. R. Federman, D. E. Welty, and A. M. Ritchey. OH+ in Diffuse Molecular Clouds. 2014. *ApJ*, 781, L8. doi:10.1088/2041-8205/781/1/L8

ADVANCED PREP PUBLICATIONS

2. **Antonio J. Porras-Valverde**, John C. Forbes, Rachel S. Somerville, Adam R. H. Stevens, Andreas A. Berlind, and Kelly Holley-Bockelmann. Controlling the scatter in stellar mass within the SMHMR using black hole mass. *Mature draft to be submitted to ApJ*
1. **Antonio J. Porras-Valverde**, Adam R. H. Stevens, Andreas A. Berlind, and Kelly Holley-Bockelmann. Stellar mass-to-halo mass plane for quenched galaxies in Dark Sage and IllustrisTNG. *in prep*

SELECTED CONFERENCES

BEXCO Busan

August 2018

- 31th International Astronomical Union General Assembly in Busan, South Korea. Poster, "Why do SAMs and Sims Disagree on Stellar Mass - Halo Mass Scatter?"

University of Western Australia

February 2020

- European Southern Observatory 2nd ESO-Australia. The build-up of galaxies through multiple tracers and facilities. Talk, “Morphology and Color comparison in the Stellar-to-Halo mass relation”

University of California at Santa Cruz

August 2019

- 2019 Santa Cruz Galaxy Workshop. Poster, “Exploring the angular momentum connection to galaxy morphology in the SAM DARK SAGE”

Universitat Wien

August 2018

- 30th International Astronomical Union General Assembly in Vienna, Austria. Poster, “Role of Halo Spin and Environment in Shaping Galaxy Morphology”

American Astronomical Society

- 235th Meeting in January 2020, Honolulu, HI. Talk, “Central American - Caribbean Bridge in Astrophysics” and poster, “Stellar-to-halo mass relation: comparing galaxy quenching and morphological transformations using cosmological simulations.”
- 233th Meeting in January 2019, Seattle, WA. Talk, “Dissecting the Anatomy of Bulge and Disk Dominated Galaxies through DARK SAGE.”
- 229th Meeting in January 2017. Poster, “High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240”
- 227th Meeting in January 2016. Poster, “Observing Recently Merged Galaxy 1015+364 at 2.3 and 8.5 GHz”

INVITED TALKS

Space Telescope Science Institute

December 2022

- Lunch talk, “What causes such large stellar mass scatter within the stellar-to-halo mass relation in semianalytic model DARK SAGE?”

Harvard ITC, Center for Astrophysics

November 2022

- Lunch talk, “What causes such large stellar mass scatter within the stellar-to-halo mass relation in semianalytic model DARK SAGE?”

Stanford KIPAC

October 2022

- Tea talk, “Why do SAMs and Sims Disagree on the Stellar Mass - Halo Mass Scatter?”

Massachusetts Institute of Technology

February 2022

- Brown Bag Lunch talk, “What causes such large stellar mass scatter within the stellar-to-halo mass relation in semianalytic model DARK SAGE?”

Kansas University

November 2021

- Space Seminar, “What causes such large stellar mass scatter within the stellar-to-halo mass relation in semianalytic model DARK SAGE?”

Princeton University

October 2021

- Galread Seminar, “Angular momentum and Morphological Sequence of Massive Galaxies through DARK SAGE”

Universidad Nacional Autonoma de Honduras

June 2021

- IV Semana de Astronomía y Astrofísica, “Un breve vistazo a la formación y evolución de galaxias”

Flatiron Institute Center for Astrophysics

May 2021

- Galaxy Evolution Theory group, “Exploring galaxy quenching using the stellar-to-halo mass relation”

The International Centre for Radio Astronomy Research

January 2020

- Seminar, “Stellar-to-Halo mass relation: galaxy quenching vs. morphological transformations”

University of Costa Rica

June 2019

- Physics colloquium: “Diseción de la anatomía de una secuencia morfológica masiva de galaxias a través del modelo semianalítico DARK SAGE”

ORGANIZED CONFERENCES

National Radio Astronomy Observatory

October 2020, 2021, 2022

- Organizing co-chair of the NACTOBER as part of the National Astronomy Consortium program.

Astrofisica Centroamericana y del Caribe

December 2020

- Organizing member of the 2020 Alpha-Cen General Assembly Virtual meeting.

PROPOSAL REVIEW PANEL

Astrophysics Theory Program

August 2021

- Evaluated proposals and help select the best candidates
- Participated in panel discussions

OBSERVING EXPERIENCE

W.M.Keck Observatory

April 2021

- Two nights remote observing alongside PI Intae Jung using MOSFIRE

LECTURES GIVEN

Academia Nacional de las Ciencias de Costa Rica

May 2019

- La Busqueda de vida en planetas Extrasolares

Dyer Observatory - Meet the Astronomer

- May 2018: Why is the Milky Way the Way it is?
- April 2019: The Quest for Life on Extrasolar Planets

PROFESSIONAL DEVELOPMENT

Central America-Caribbean Bridge in Astrophysics Inc. June 2016 - present

- Co-founder, President, co-lead. Run the nonprofit organization. Organize remote internships, mentor students, accountant, web admin.

Fisk-Vanderbilt Social Justice Committee August 2021 - August 2022

- Co-organized a three summer symposium on Social Justice in STEM Higher Ed

Vanderbilt University August 2019 - May 2022

- Website administrator for the Vanderbilt Astronomy group
- Host weekly departmental astronomy journal hour-long meetings

Astrofisica en Centroamerica y el Caribe Collaboration May 2017 - December 2021

- Founding member and member of the executive committee of the international nonprofit organization that looks for astrophysics representation in the region.
- Contributed to the statutes for the formation of the collaboration

National Astronomy Consortium (NAC) CORE Team August 2018 - 2020

- Organize informative webinars for current and alum NAC students

Astrobitos Collaboration December 2018 - 2020

- Author: Summarize scientific astronomy manuscripts for undergraduate-level students.

TOP VIEWS ASTROBITOS PUBLICATIONS

Explorando la conexión entre las galaxias y sus halos de materia oscura October 2019

- Over 700 reads.

Cual es la relacion que tienen los agujeros negros con sus galaxias? August 2019

Las Galaxias en la poca de Reionización January 2020