

ANTONIO J. PORRAS-VALVERDE

6301 Stevenson Science Center \diamond Nashville, TN 37212 \diamond 615-322-2828

antonio.j.porras@vanderbilt.edu \diamond <https://aporrasval.github.io/>

EDUCATION

Vanderbilt University

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

August 2018 - present

Nashville, TN

- Advisors: Dr. Andreas Berlind and Kelly Holley-Bockelmann
- Expected to graduate in 2023

Fisk University

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

August 2016 - August 2018

Nashville, TN

- Advisors: Dr. 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

- Member of National Society of Collegiate Scholars

RESEARCH EXPERIENCE

Vanderbilt University

Research Assistant

August 2016 - Present

Nashville, TN

- Use semi-analytic models to understand what drives the morphology of galaxies

National Radio Astronomy Observatory

Research assistant

Summer 2015 and 2016

- Summer 2015: Performed radio imaging using data from the Very Long Baseline Array (VLBA) to find evidence of binary black holes
- Summer 2016: Investigated galaxy NGC 6240 to understand extreme star forming environments in space

University of North Carolina, Chapel Hill

Research assistant

August 2013 - May 2015

Chapel Hill, NC

- Developed fluid dynamical simulations to investigate the role of flexibility in jellyfish propulsion

University of Toledo

Research assistant

May 2012 - August 2012

Toledo, OH

- Analyzed spectral data to understand OH and OH⁺ production in diffuse molecular clouds

AWARDS

Flatiron Institute Center for Computational Astrophysics

August 2021

Nominated for the Presidential Awards for Excellence in Mathematics and Science Teaching by Dr. Anthony Beasley, Director of the National Radio Astronomy Observatory [non-awardee at this moment]

December 2020

American Physical Society. Travel award Excellence in Graduate Research.

August 2018

Vanderbilt University.McMinn Summer Research Award.

Summer 2018

SELECTED PUBLICATIONS

1. **Antonio J. Porras-Valverde**, Andreas Berlind, and Kelly Holley-Bockelmann. Morphology and Color comparison in the Stellar-to-Halo Mass relation. *In prep*
2. **Antonio J. Porras-Valverde**, Kelly Holley-Bockelmann, Andreas Berlind, and Adam Stevens. Angular momentum and Morphological Sequence of Massive Galaxies through DARK SAGE. *Accepted in ApJ*
3. 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
4. **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

SELECTED CONFERENCES

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”

Universitat Wien

August 2018

- 30th International Astronomical Union General Assembly. 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.”
- Also, attended the 229th and 227th meetings.

PROFESSIONAL DEVELOPMENT

Astrobitos Collaboration

December 2018 - present

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

Central America-Caribbean Bridge Program

June 2016 - present

- Founder
- Co-lead of the program. Mentor Undergraduates: hold monthly web workshops for undergraduate students from the region. Organize remote-REU internship twice a year

Astrofisica Centroamericana y del Caribe

August 2017 - present

- Co-founder
- Executive committee member