

ANTONIO J. PORRAS

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RESEARCH INTERESTS

Investigate role of stellar and dark matter halo spin in formation and evolution of galaxy morphology using cosmological simulations

EDUCATION

Fisk Univeristy August 2016 - Present
Dept. of Physics. Master of Arts in Physics Nashville, TN

- Fisk-Vanderbilt Master's-to-Ph.D. Bridge Program

University of North Carolina August 2012 - May 2015
Dept. of Mathematics. Bachelor of Arts in Mathematics Chapel Hill, NC

- Member of National Society of Collegiate Scholars

Northern Virginia Community College August 2010 - May 2012
English as a Second Language and college courses Annandale, VA

- Dean's list: 2011, 2012

RESEARCH EXPERIENCE

Vanderbilt University August 2016 - Present
Research Assistant Nashville, TN

- Research assistant under the direction of Dr. Kelly Holley-Bockelmann and Andreas Berlind. Use semi-analytic models to understand what drives the morphology of galaxies

National Radio Astronomy Observatory Summer 2015 and 2016
Research assistant

- Summer 2015: Research assistant under the direction of Dr. Sarah Burke-Spolaor. Performed radio imaging using data from the Very Long Baseline Array (VLBA) to find evidence of binary black holes
- Summer 2016: Research assistant under the direction of Dr. Aaron Evans. Investigated galaxy NGC 6240 to understand extreme star forming environments in space

University of North Carolina, Chapel Hill August 2013 - May 2015
Research assistant Chapel Hill, NC

- Applied mathematics research assistant under the direction of Dr. Laura Miller. Developed fluid dynamical simulations to investigate the role of flexibility in jellyfish propulsion

University of Toledo May 2012 - August 2012
Research assistant Toledo, OH

- Research assistant under the direction of Dr. Steven Federman. Analyzed spectral data to understand OH and OH⁺ production in diffuse molecular clouds

AWARDS AND FELLOWSHIPS

Fisk-Vanderbilt Bridge Fellow

August 2016 - present

- NSF GO-FAAR grant covers my fellowship

National Science Foundation Graduate Research Fellowship Program

April 2016

- Honorable Mention

National Radio Astronomy Observatory

Summer 2015 - 2016

- Awarded National Science Foundation REU Fellowship
- Submitted proposal and was awarded two hours of observational time using the Very Long Baseline Array to look at a millihalo on 3C 84 galaxy. Summer 2015

University of North Carolina, Chapel Hill

Summer 2014

- Awarded Office for Undergraduate Research SURF grant

University of Toledo

Summer 2012

- Awarded National Science Foundation REU Fellowship

PUBLICATIONS

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. 2017. Submitted to the Journal of Fluid Mechanics.

Antonio J. Porras, Aaron Evans, Loreto Barcos-Muoz, Sean Linden. High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240. 2017. American Astronomical Society Meeting 229.

Antonio J. Porras, Sarah Burke-Spolaor, et al. CSS Object Found in Galaxy Merger 1015+364 at 2.3 and 8.5 Hz. 2016. American Astronomical Society Meeting 227.

A. J. Porras, S. R. Federman, D. E. Welty, and A. M. Ritchey. OH⁺ in Diffuse Molecular Clouds. 2014. ApJ, 781, L8.

CONFERENCES

American Astronomical Society

January 2017

- 229th Meeting American Astronomical Society Conference. Poster, “High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240”

American Astronomical Society

January 2016

- 227th Meeting American Astronomical Society Conference. Poster, “Observing Recently Merged Galaxy 1015+364 at 2.3 and 8.5 GHz”

Howard University

August 2015

- National Astronomy Consortium conference. Talk, “In Search for Binary Supermassive Black Holes”

University of California, Los Angeles

April 2015

- Latinos in the Mathematical Sciences Conference. Poster, “Scaling Effects in Oblate Jellyfish Propulsion”

University of North Carolina, Greensboro

November 2014

- The 10th Annual UNCG Regional Mathematics and Statistics Conference. Talk, “Scaling Effects in Oblate Jellyfish Propulsion”

University of North Carolina, Chapel Hill

October 2014

- Southeast Regional Society for Integrative and Comparative Biology. Talk, “Scaling Effects in Oblate Jellyfish Propulsion”

ACADEMIC/OUTREACH PRESENTATIONS

Universidad de Costa Rica

August 2017

Colloquium

- Visitor. Talk, “High Resolution Radio Observations of Recently Merged Galaxies”

Overton Highschool

April 2017

Conexion Americas - Escalera program

- Public outreach. Talk, “What does a scientist look like?”

Colegio Saint Benedicto

June 2016

- Public outreach. Talk, “Costa Rica-U.S. Bridge Project”

Princeton University

October 2015

- Invited Visitor. Talk, “Observing Recently Merged Galaxy 1015+364 at 2.3 and 8.5 GHz”

University of North Carolina, Chapel Hill

August 2012

- Physics and Astronomy Colloquium. Talk, “Cosmic Rays in Diffuse Molecular Clouds”

MENTORSHIP EXPERIENCE

Costa Rica - U.S. Bridge Project

June 2016 - present

Mentoring Undergraduates

- Created this program to help develop astronomy research opportunities in Costa Rica.
- Hold monthly web workshops for twenty two undergraduate students Centroamerica to expand information about astronomy, research opportunities, professional development, and programming.

COMMUNITY SERVICE

Very Large Array

August 2015

*Tour guide**Socorro, NM*

- Provided tours of the Very Large Array (VLA) to general audience

Mathematics Help Center

August 2014 - May 2015

*Tutor**Chapel Hill, NC*

- Tutored undergraduate students from algebra to Calculus III

Orange County Council

August 2013 - December 2014

*Tutor**Chapel Hill, NC*

- Tutored English and Mathematics three hours per week to UNC Housing staff to help them get their GED certificate