

Emily Alicea-Muñoz

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Research Interests

Massive black hole assembly, growth and mergers; gravitational waves; compact objects; cosmology and structure formation.

Education

- 2003 – present
 Pennsylvania State University – University Park, PA
 Department of Astronomy and Astrophysics
 Ph.D Candidate (expected 2010)
 Thesis: “Black Hole Mergers as Probes of Structure Formation”
- 1999 – 2003
 University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
 Department of Physics
 B.S. Physics, Magna Cum Laude, 2003

Research Experience

- 2005 – present
 NASA Goddard Space Flight Center – Greenbelt, MD
 Gravitational Astrophysics Laboratory
 Ph.D. Thesis Research
 Thesis Advisor: M. Coleman Miller (University of Maryland)
 Co-Supervisors: Joan Centrella (NASA Goddard Space Flight Center), Steinn Sigurdsson (Penn State Astronomy & Astrophysics)
- Summer 2004
 NASA Goddard Space Flight Center – Greenbelt, MD
 Summer Institute in Engineering and Computer Applications (SIECA) Graduate Student Intern
 Advisors: Joan Centrella, John Baker, Richard Matzner
- Summer 2003
 NASA Goddard Space Flight Center – Greenbelt, MD
 Summer Institute in Engineering and Computer Applications (SIECA) Student Intern
 Advisor: Eneclalí Figueroa-Feliciano
- Summer 2002
 Harvard-Smithsonian Center for Astrophysics – Cambridge, MA
 Smithsonian Astrophysical Observatory Summer Intern
 Advisor: Andrea K. Dupree
- Summer 2001
 National Institute of Standards and Technology – Gaithersburg, MD
 Summer Undergraduate Research Fellow
 Advisor: Eric L. Shirley

Spring 2001 – Fall 2002

University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
Department of Physics – Undergraduate Research Assistant
Advisor: Leszek A. Nowakowski

Teaching Experience

Spring 2006

Pennsylvania State University – University Park, PA
Department of Astronomy and Astrophysics
Teaching Assistant, Astro 011: Introductory Astronomy Lab

Professional Societies

American Astronomical Society (AAS), Student Member
American Physical Society (APS), Junior Member
Golden Key International Honour Society

Honors and Fellowships

2006

Pennsylvania State University – University Park, PA
Nominated, Sloan Fellows Program

2003 – 2005

Pennsylvania State University – University Park, PA
Bunton-Waller Fellowship

2003

Pennsylvania State University – University Park, PA
Astronomy and Astrophysics Braddocks/Roberts Fellowship

NASA Goddard Space Flight Center – Greenbelt, MD
Rahsaan Jackson Presentation Award

University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
Enrico Fermi Physics Award

2002

Collegiate USAA All-American Scholar

2000 – 2003

University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
Department of Physics Honor Student

1999 – 2000

The National Dean's List

Presentations, Posters and Invited Talks

2009

E. Alicea-Muñoz, M.C. Miller. Using Black Hole Mergers to Explore Structure Formation. Poster, 213th Meeting of the American Astronomical Society, Long Beach, CA (4 - 8 January 2009)

- 2008 E. Alicea-Muñoz, M. Coleman Miller. Using Black Hole Mergers to Explore Structure Formation. Poster, 24th Texas Symposium on Relativistic Astrophysics, Vancouver, BC, Canada (8 - 12 December 2008)
- E. Alicea-Muñoz, M. Coleman Miller. Black Hole Mergers as Probes of Structure Formation. Presentation, 11th Eastern Gravity Meeting, State College, PA (13 May 2008)
- 2007 E. Alicea-Muñoz. Black Hole Mergers as Probes of Structure Formation. Presentation, Extragalactic Astronomy Conference 2, NASA/Goddard Space Flight Center, Greenbelt, MD (14 September 2007)
- E. Alicea-Muñoz. Black Hole Mergers as Probes of Structure Formation. Invited Talk, American Museum of Natural History, Department of Astrophysics, New York, NY (8 February 2007)
- 2006 E. Alicea-Muñoz, J. Baker, J. Centrella, K. Holley-Bockelmann, M.C. Miller, P. Laguna, M. Ricotti. Massive Black Hole Merger Rates. Presentation, 9th Eastern Gravity Meeting, Cambridge, MA (24 March 2006)
- E. Alicea-Muñoz, J. Baker, J. Centrella, M.C. Miller, P. Laguna, M. Ricotti. Massive Black Hole Merger Rates. Poster, 207th Meeting of the American Astronomical Society, Washington, DC (8 - 12 January 2006)
- 2005 E. Alicea-Muñoz, J. Baker, J. Centrella, P. Laguna, R. Matzner. Massive Black Hole Binary Merger Rates in a Hierarchical Model of Structure Formation. Poster, APS 2005 April Meeting, Tampa, FL (16 - 19 April 2005)
- 2003 E. Alicea-Muñoz, A.K. Dupree. Pulsations in Metal-Deficient Field Giants. Poster, 201st Meeting of the American Astronomical Society, Seattle, WA (5 - 9 January 2003)

Outreach Activities

- 2006 – present NASA Goddard Space Flight Center – Greenbelt, MD
Volunteer, "Ask an Astrophysicist" Website
http://imagine.gsfc.nasa.gov/docs/ask_astro/ask_an_astronomer.html
- 2003 University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
Physics Week, 7 - 10 April 2003
Helped develop the "Women in Physics" theme; conducted physics demonstrations for high school students; participated in a Physics Show for the university community.
- 2002 University of Puerto Rico, Mayagüez Campus – Mayagüez, PR
Physics Week, 4 - 8 March 2002
Conducted physics demonstrations for high school students; helped organize a Physics Show for the university community.

2000 – 2002

Caribbean Astronomical Society – Mayagüez, PR
Helped with Planetarium and Observatory Open Houses at the University of Puerto Rico, Mayagüez Campus; gave talks about general astronomy subjects, open to the general public; guest speaker in a science radio show in Mayagüez (with Rafael Castro, then-president of the Caribbean Astronomical Society).

Skills

Languages

Fluent in Spanish and English

Operating Systems

Mac OS X, Unix/Linux, Windows 95/98/NT/2000/XP

Programming and Software

C, FORTRAN, HTML/CSS, LaTeX, Matlab,
Python/Matplotlib (currently learning)

Last Updated: 12 February 2009