

John Ryan McCann

Department Address

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EDUCATION

Ph.D. Student, Physics

University of California, Santa Barbara, Santa Barbara, CA

Bachelor of Science, Engineering Physics

University of Illinois at Urbana-Champaign, Urbana, IL

May 2014

Thesis: Nonthermal Emission from Black Hole Accretion Flows

High School Diploma

Wheaton Academy, West Chicago, IL

May 2010

PROFESSIONAL EXPERIENCE

Department of Physics, University of California, Santa Barbara

January 2015—Current

Research Assistant, Santa Barbara, CA

Advised by Dr. Ruth Murray-Clay

- Simulating self-consistent atmospheric escape of extrasolar planets driven by external irradiation with the code ATHENA.
- Implementing the inclusion of stellar winds, stellar and planetary magnetic fields, and Coriolis effect.

Department of Physics, University of California, Santa Barbara

August 2014—December 2014

Teaching Assistant, Santa Barbara, CA

- Led discussion sections, hosted weekly office hours, and proctored exams for introductory physics major electrodynamics, and classical mechanics.

Department of Physics, University of Illinois at Urbana-Champaign

May 2013—August 2014

Research Assistant, Urbana, IL

Advised by Dr. Charles Gammie

- Studied supermassive, Kerr black holes using general relativistic magnetohydrodynamic simulations and ray tracing methods.
- Implemented new models for nonthermal magnetobremstrahlung emission to account for infrared observations of Sagittarius A*.
- Documented and disseminated results through a senior thesis, two posters, and one invited talk.

Department of Physics, University of Illinois at Urbana-Champaign

August 2012—May 2014

Teaching Assistant, Urbana, IL

- Led laboratory sections, hosted weekly office hours, wrote midterm and final test questions, and proctored exams for introductory physics major thermodynamics and quantum mechanics.
- My students achieved section averages above the exam mean for 20 of 22 sections midterms and finals.
- Awarded the “Excellent Teaching Assistant” distinction for Fall 2012, Spring 2013, Fall 2013 and Spring 2014 semesters.

MEMBERSHIPS

Member, American Physics Society, Current.
Member, Society for Physics Students, National Chapter, Current.
Vice President, Society for Physics Students, UIUC Chapter, Fall 2012–Spring 2014.
Vice President, Physics Society, UIUC, Fall 2012–Spring 2014.

HONORS AND AWARDS

<i>Paxton Fellowship for Theoretical Astrophysics</i>	Summer 2015
Awarded by: Kavli Institute for Theoretical Physics	
<i>Broida Fellowship</i>	Fall 2014
Awarded by: UC Santa Barbara	
<i>Robert E. Hetrick Outstanding Senior Thesis Award</i>	Spring 2014
Awarded by: University of Illinois at Urbana-Champaign	
<i>“University of Illinois list of teachers ranked as excellent by their students”</i>	Fall 2012, Spring 2013, Fall 2013, Spring 2014
Awarded by: University of Illinois at Urbana-Champaign	
<i>Edmund J. James Scholar</i>	Spring 2011—Spring 2014
Awarded by: University of Illinois at Urbana-Champaign	

INVITED TALKS

1. “Nonthermal Emission from Black Hole Accretion Flows”
13th Annual Physics Undergraduate Research Symposium, University of Illinois at Urbana-Champaign, Urbana, IL. January 31, 2014.
2. “Nonthermal Emission from Black Hole Accretion Flows”
Poster Session, Society of Physics Student Zone 8 Meeting 2013, University of Louisville, Louisville, KY. October 26, 2013. (Poster Session)
3. “Nonthermal Emission from Black Hole Accretion Flows”
13th Annual Physics Illinois Undergraduate Research Poster Presentations, University of Illinois at Urbana-Champaign, Urbana, IL. October 14, 2013. (Poster Session) **Honorable Mention**