Ryan Beauchemin

Contact Information

Current Address:	203 Intern Way, Durham, NC
Phone Number:	+1 (919) 628 6854
Primary Email:	ryan.w.beauchemin@gmail.com
Secondary Email:	beauchem@live.unc.edu

Work Experience

Jun 2014-Current — Research Assistant at the Department of Physics and Astronomy, *UNC*

I am currently participating in research with the RESOLVE team under Sheila Kannappan (details **here**). I have been trained in observation techniques for remote telescopes, and dynamic analysis of output, as well as deeper reduction techniques. I have helped to create and test a new multislit spectrum slicer for the SOAR telescope in Chile (now an active instrument). I have examined correlations between the photometric properties of galaxies and differences in kinematic and photometric inclinations, and presented findings at AAS 2015 in Seattle, WA.

Jan 2014-Aug 2014 — Research Assistant at the Department of Physics and Astronomy, *UNC*

I have aided in creating the largest database for Gamma Ray Burst afterglows using all known documentation for each burst available on the SAO/NASA Astrophysics Data System, which provides information about magnitudes in different bands as a function of time after the burst, over a wide swathe of types of bursts. My work involved data mining ADS for the creation of a MySQL server, with much more easily accessible data, some day creating new opportunities in a more complete analysis of GRB afterglows using all available public data. The database will be made public when completed.

Oct 2013-Current — Teaching Assistant at the Department of Physics and Astronomy, *UNC*

In this position, I am an assistant for the lab component of the University of North Carolina's Introduction to Astronomy course. Objectives are to help students understand and enjoy their first steps into exploring astronomy. I've found that the best way that I could help students is to make them laugh and provide them with fun mnemonics. It was an amazing experience, and I felt that the students took a lot away from the course.

Jun 2013-Oct 2013 — Summer Intern at the Astronomy Research Center, *Raleigh*

I began by designing informative videos for patrons of the Museum of Natural Science, then join Dr. Patrick Treuthardt in completing research on the formation and curvature of dust lanes in barred spiral galaxies, with galaxies selected based on resolutions and pattern speeds from a previous paper. Answering questions about astrophysical phenomena and conducting Hα sun observations on the roof were also a part of daily work, but my help with research involved using IRAF and DS9 to correct over 40 galaxies for inclination, and then to create B-R color index maps for each to intensify the dust features. The preliminary results were presented at AAS 2014 (details **here**).

Jan 2013-Jun 2013 — STEM Lab Assistant at Wake Technical Community College, *Raleigh*

The STEM lab was provided by the Math club and was a truly exciting experience for me to get a first look at teaching. I worked with students in need of help with STEM material, though this was mostly dedicated to help with physics and mathematics. This service was free of charge for students, and was provided through Wake Tech's Math Club.

Jan 2011-Current — Waiter and Bartender at Tyler's Taproom, *Raleigh, Durham, Carrboro*

Though this is a necessity to financially supplement my education, the perks of working at a bar are quite significant. Many of the smaller grants and scholarships that I have applied for I have heard about from friendly patrons visiting for local conferences, or regulars teaching at local universities. And meeting these patrons, talking with them about their research, and taking their cards allows me to build connections and get an idea of where I want to go to graduate school.

Education

July 2015 Bachelor of Science Degree in Physics, **University of North Carolina**, Chapel Hill
Major: Astrophysics | *Emphasis on Galaxy Evolution and Dynamics*
Gpa: 3.0/4.0

July 2012 Associate Degree in Science, **Wake Technical Community College**, Raleigh
Graduated with the highest honors | *Emphasis on Physics and Astronomy*
Gpa: 3.9/4.0

Leadership and Organizations

2014-Current Member of Dr. Kannappan's RESOLVE team at UNC
2014-Current Resource Manager of UNC's Society of Physics Students
2014-Current Member of Dr. Dan Reichart's GRB team at UNC
2013-Current Member of UNC's Society of Physics Students
2012-2013 National Community College Aerospace Scholar (NASA)
2012-Current Member of the Mu Alpha Theta Math Honor Society
2011-2012 Senator of the Student Government at Wake Technical CC
2011-Current Member of the Phi Theta Kappa Honor Society
2010-2013 Officer of Wake Technical CC's Math Club

Awards and Certificates

2015 Recipient of SKYNET Undergraduate Research Scholarship
2014 UNC OUR Travel Grant for American Astronomical Society 225th Meeting
2014 Beneficiary of NSF CAREER Award Supplement
2013 Recipient of North Carolina Space Grant for Undergraduates
2013 Accepted as student astronomer at NRAO WV for ERIRA-UNC
2013 Second place at the southeast regional calculus competition in GA
2012 First place at the North Carolina Calculus competition in Gastonia
2012 Second place at NASA-MSFC NCAS rover competition
2012 Third place school wide SML competition through AMATYC

Skills

Programming and Analysis: C++, emacs, DS9, GAIA, IDL, Mac OSX, IRAF, Linux, Mathematica, MATLAB, MySQL, **Python**, Xcode, X11
Designing and Show: Adobe Photoshop, GIMP, Keynote, LaTeX, Libre Office
Physical Manipulation: Soldering, Metal/Woodworking, Component Calibration

Languages

English: Native
French: Conversational

Research Interests

Galaxy Evolution and Morphology, Halo Theory and Dark Matter, Gamma Ray Bursts, Radio Astronomy, Kinematics leading to Star Formation, Instrumentation, and Modeling.