

Undergraduate Research Opportunities Symposium

- This is a mini-symposium for undergrads who are interested in doing a short-term research project within APS.
- The event will be under the APS career mentoring program called [Beyond Boulder](#).
- Undergrads can then apply via email (with a CV) for the positions they are most interested in.
- Coding skills encouraged!



Presentations from today's event and a link to the video recording will be posted on the APS website, and all majors will be informed by email

Location: Duane Physics Room G130
Date: Monday December 3, 2018
from 6:00-7:30pm

Pizza will be provided!

For any questions, please contact Dr. Schneider:

Nick.Schneider@lasp.colorado.edu



Astrophysical & Planetary Sciences

UNIVERSITY OF COLORADO **BOULDER**

Pre-professional Experiences

Research

- Local researchers
 - ASTR, LASP, CASA, JILA, etc.
 - UROP's
 - Independent Study
 - Honors Thesis
 - NIST, SwRI, NCAR, NOAA
- REU's

Common Themes

- Qualifications, GPA, time
- Resume/CV
- Initiative, "Just Showing Up"

Teaching

- Learning Assistants
- CU Teach

Informal Education

- Fiske Planetarium
- Sommers Bausch Obs.
- Denver Museum Nat&Sci
- CU-STARS

Industry

- Aerospace Ventures Day
- Ball, LM

Preparation for Research in ASTR

<https://www.colorado.edu/aps/undergraduate-students/ready-research>

- “Skills” coursework
 - 2600 Scientific Computing
 - 3800 Data Analysis
 - 3510/20/60 Observing & Instrumentation
- Content coursework
- Make/buff your CV
- Attend “Faculty Research Talks”
- Scout web pages

[Home](#) > [Undergraduate Studies](#) > Research Opportunities

Research Opportunities

Participating in scientific research can be a highly valuable and rewarding part of your undergraduate education here at CU. Many students develop their interests, skills and contacts by working on one or more projects during their time at university.

Working in a research program can also be a significant help in ensuring success in your post-graduation plans. Research experience is highly recommended for those who are considering post-graduate academic programs, and can help you decide whether this is the right path for you. For any career path, a research advisor can provide letters of reference and valuable contacts. Being able to describe your research accomplishments can make your résumé a standout when applying for nearly any type of job after graduation.

Are you Ready for Research?

Students typically start to acquire useful skills, solidify their understanding of foundational math and physics concepts, and hone their interests after at least a year in our major. Below is a list of things you should consider, and steps you can take to help you get started.

You should keep in mind that finding research work may be competitive, and that resources may be tight (time for supervising your work, as well as pay). You will likely have to be patient and persistent to find a good match to your skill set and interests.

1. **Is your academic record solid?** If your GPA (either cumulative or in your math and science classes) is less than about 2.7-3.0, we STRONGLY suggest that you postpone an extracurricular activity like research until you can improve your grades. We offer free homework help rooms and other tutoring and mentoring support. Please talk to your academic advisor AND your APS mentor about resources you can access to boost your academic performance.
2. **Do you have useful research skills?** Many research jobs require computer programming and data analysis skills, and so we highly recommend taking ASTR 2600 (Computational Techniques) or an equivalent programming class before you start looking for a research project. ASTR 3800 (Data Analysis and Computing) can also build relevant skills, as can ASTR 3510/20 (Observations and Instrumentation), engineering and writing classes. Pre-professional work can also take the form of being a Learning Assistant or participating in the wide range of outreach, teaching and tutoring opportunities here at CU. Beyond Boulder is a program to help you explore the many career paths you might make, and help you identify the skills you should master in college. The schedule for this weekly series is [here](#), and is also emailed to all majors.
3. **Polish your résumé.** A good résumé can serve as an introduction to a potential supervisor and you should have one handy when starting to look for a project. Make sure your skills (above) are highlighted, as well as the relevant classes you've completed and your grades in them. Here is a sample [résumé](#) for your reference.

[Prospective Students](#)[Current Courses](#)[Degree Requirements](#)[Honors Program](#)[Mentoring](#)

Research Opportunities

[Research Coffee Breaks](#)[Research, Internship, & Scholarship Opportunities](#)[APS Research/Employment Opportunities](#)[Undergrad Research Symposium](#)[Help Room & Tutoring](#)[CU Stars](#)

The APS department recognizes our scientific and educational missions are strengthened by contributions from **diverse** perspectives. We aim to promote a **fair, inclusive, and supportive** environment for all. As a member organization of the American Astronomical Society, our department adheres to their [Code of Ethics](#) and encourages all our faculty, students, and staff to do the same. If you feel we have failed in this goal, or if there are any issues or areas of concern that the APS Climate Committee should be aware of, please use the [Anonymous Issue Form](#).

And much much more!

Undergrad Research: Important Links

- <https://www.colorado.edu/aps/undergraduate-students/ready-research>
- <https://www.colorado.edu/aps/undergraduate-studies/research-opportunities/research-internship-scholarship-opportunities>
- https://www.nsf.gov/crssprgm/reu/reu_search.jsp
- <http://www.astrobetter.com/wiki/Summer+Internships>
- <https://www.colorado.edu/aps/faculty-research-talks>

My OfficialFirstname (alternatename) LastName

My address in Colorado
Email: myofficial.cuaddress@colorado.edu

Education

Previous college-level education (CC, transfer, etc.) Semesters or dates
Major in ASTR, whichever track, Other majors, minors
Expected graduation date:
GPA (mandatory!): overall and in major, if available

Experience (list all relevant)

Research Assistant, Institution or Dept. Semesters or dates
what you did in three or four words
Supervisor:

Tutor, grader, LA, other teaching, Dept. Semesters or dates
Topics, in a few words
Supervisor:

Other relevant volunteer or paid work, Semesters or dates
incl. relevant extra-curriculars (CUAC, STARS, Fiske, SBO)
Topics and activities in a few words

Research Skills

Computer skills, computer courses taken (grade)
Data analysis skills including statistics, relevant courses taken (grade)
Experience with telescopes: which, what did you do, relevant courses (grade)
Laboratory or other useful skills, relevant courses taken (grade)

Awards and Recognition

Scholarships for CU or other colleges
Awards or other recognition at the college level

Other skills (if space):

Something that makes you stand out

Bass player for heavy metal band
Chain-saw certification
Fluent in Serbo-Croatian

Reference:

email@colorado.edu

Someone at CU who has agreed to be your reference. Can be mentor, instructor who knows you well

Galileo Galilei

123 Copernicus Lane
Boulder CO 80302
Cell: 303-555-1212

Email: Galileo.Galilei@colorado.edu

Objective: I am seeking a part-time research assistant position to obtain research skills and experience in any field of astrophysics, planetary science or space physics. Gaining experience especially important for evaluating my potential career paths, possibly including graduate school. A paid position is preferred, but I would consider volunteering until funding is available, applying for a UROP grant, or working for Independent Study credit.

Education:

Major: ASTR major at CU Boulder, Fall '15-present, Astrophysics Track

Expected Graduation: Spring 2019

GPA: 3.72 in the ASTR, PHYS and APPM, 3.65 overall

Relevant Upper Division Coursework:

- ASTR2600 "Computational Techniques".
- ASTR3510 "Observations & Instrumentation I". Final project on photometry of open clusters
- ASTR3750 "Planets, Moons and Rings"

Computer Skills:

- Fluent in IDL programming from ASTR2600 and course projects
- Extensive experience in IRAF from ASTR3510
- Some experience in Python
- Familiar with Microsoft Word, Powerpoint, Excel
- Extensive experience in Dreamweaver and iWeb webpage development

Other Astronomy-related employment and experience

- Grader for ASTR1020 in Fall 16 with Prof. Glenn
- Volunteer Observer at SBO Open Houses
- Docent at Fiske Planetarium
- Learning Assistant in ASTR1020
- Long-time amateur astronomer; built my own telescope
- Summer REU at U. Illinois in Summer '15 on crater statistics on Mars. Mentored by Eugene Shoemaker

References

- Prof. Jason Glenn, instructor for whom I graded in Fall '16.
- Alan Sandage, CASA postdoc who mentored my project in ASTR3510.
- Prof. Nick Schneider, instructor for ASTR3710 in which I received an A.

Availability: Ready to work 10 hrs per week effective immediately, and full-time over the summer.

Scientific Interests: Cosmology, Telescopes & Instrumentation, Extrasolar planets, Space Weather

Nick Schneider [L..., 4/20/2013 11:40 AM]

Comment [1]: For most students, everything essential will fit on one page. Don't pad with non-science items if it pushes you onto a second page. There is no fixed format for a CV, so you can arrange sections below as you wish. Make sure it's easy to skim for key items.

Nick Schneider [L..., 4/20/2013 11:28 AM]

Comment [2]: Your wording should express your own motivation

Nick Schneider [L..., 4/20/2013 11:25 AM]

Comment [3]: Just an option, but might increase your odds

Nick Schneider [L..., 4/20/2013 11:41 AM]

Comment [4]: Emphasize grades in majors courses (if they deserve it). Only include High School if you don't have enough under your belt in college. Almost all ASTR majors were top performers in high school

Nick Schneider [L..., 4/20/2013 12:04 PM]

Comment [5]: If you can't quote high overall GPA, list high grades by courses in the section below

Nick Schneider [L..., 4/20/2013 11:34 AM]

Comment [6]: This section may matter most. Put your best skills forward. Consider describing a challenging project

Nick Schneider [L..., 4/20/2013 11:27 AM]

Comment [7]: It's OK to put on non-astronomy items, but they won't count as much.

Nick Schneider [L..., 4/20/2013 11:55 AM]

Comment [8]: This list is longer than any student could possibly achieve, but in making it so I indicate the kinds of items to be included.

Nick Schneider [L..., 4/20/2013 11:38 AM]

Comment [9]: References outside the scientific or academic world are less likely to be useful