



REUs and Other summer internships!

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What is an REU And Why Should You Apply

- Research Experience for Undergraduates
- Academic Summer internships typically 10-12 weeks long
- Travel to another university (housing usually covered)
- Work on different exciting projects and explore nearby labs!
- Meet fellow scientists and build long-lasting relationships
- Get Paid!
- Great for grad apps (some places even waive your application fee!)

My Experience

- Applied in 2022 (as a sophomore) and only got one waitlist
- Worked to expand my research profile over the next year
- Applied to as many places as possible in 2023 and was accepted into multiple high-level programs
- Choose to participate in the REU at the IfA in Hawaii



My Time in Hawaii

- In Hawaii from May to early August
- Worked with the highest resolution hydrodynamical dwarf galaxy simulation to date
- Work resulted in multiple talks and posters
- Wrote a paper on my work soon to be published
- Met with grad students to discuss grad school
- Sent over to Hilo for one week to do work
- Explored three Islands with some of my closest friends (met through the REU)



Me presenting my work at the end of the summer

My Time in Hawaii



Keck Observatories on Mauna Kea



Kilauea Volcano four days after eruption

My Time in Hawaii



Coast side of my trip to Hilo

Northshore Beach



Lantern floating on Memorial Day 1st
since 2019



My Time in Hawaii



Photo from our trip to Maui where I drove everyone to the top of Haleakala



Full group photo at the observatories on Mauna Kea

Plenty of crazy stories to share so feel free to ask

Where to find REUs and other Internships

- Search school or company websites
- The NSF website: https://www.nsf.gov/crssprgm/reu/reu_search.jsp
- AAS website: <https://aas.org/careers/internships-summer-jobs>
- SPS Internship
website: <https://jobs.spsnational.org/jobs/?keywords=internship>
- APS Job Search: <https://www.aps.org/careers/employment/index.cfm>
- Fermilab: <https://internships.fnal.gov/internships-for-international-students-studying-out-of-country/>

Typical Materials needed in an Application



Transcript



CV/Resume



Personal statement



2-3 letters of recommendation



Any additional
program-specific
essays

Examples include
challenges you overcame
or explaining a favorite
hobby

Where to Start? Set up a game plan



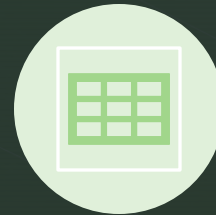
Create a list of internships or REUs that interest you (be sure to check if you're eligible)



Note down certain projects you'd want to do at each (or list potential mentors)



Note down due dates, required essays, and submission info



Compile into a spreadsheet like this: <https://docs.google.com/spreadsheets/d/1KMZulWij8dGibbNSKld9ZWzbCgWphTMntlBn1eODXjA/edit?usp=sharing>

Who to ask for recommendation letters

- The best letter writers are professors who know you best
 1. Research advisors
 2. Academic faculty advisor
 3. Professors from classes you've done well in (who could speak about your potential as a researcher or worker)
 4. Professors who know you in other disciplines (such as music or math)
 5. Your boss (only a few accept these kinds of letters)

How to ask for letters

- Politely ask them after class if they would be willing to write you a nice letter of recommendation
- Can also send them an email:

"Dear Professor name, I hope you're doing well. I'm getting ready to apply to a few REUs this summer and was wondering if you would be willing to write me a nice letter of recommendation? I will send you my CV, a list of places I'm applying to, and any additional information you might need.

I appreciate your consideration—Your name"

What to send your letter writers

- Send your CV and or Resume
- The list of REUs/Internships you're interested in.
 - Include the due dates, and links of where to submit
 - Include whatever requirements each institution may have for letters
 - Have a spot for them to mark off when they've submitted
- Give them a brief personal statement of why you want to do research and what you're interested in studying. Include your career aspirations. (this can just be your personal statement)
- If there are parts of your transcript you would like them to address such as a lower grade, let them know.
- Send them a reminder about any letters due a 1-2 weeks in advance of the due date

What is a CV?

- A Curriculum Vitae- Like a resume but tailored towards what you have done academically
- CVs are focused on the subject you're applying for
- SPS CV workshop Wednesday, December 6th from 6-7 in Malott 3005
- Things to include: your education, any research or professional experience, technical skills, honors and awards, teaching experience
- Use concrete details such as "I learned python to analyze FITS files"
- Here's a link that gives a pretty good overview of what to include: <https://grad.ucla.edu/asis/agep/advcv.pdf>
- Here's my CV from when I applied to reference (let me know if you want the template): [Keaton Donaghue CV 2022 old .pdf](#)

Tips for writing your personal statement

- Write multiple drafts and possibly sections that can be used for different REUs (different places have different requirements)
- Write early and revise often
- Have your letter writers read it (people like them will be the ones reviewing it)
- Think about the most important things you want to include
- FOLLOW THE PROMPT!
- Don't put your resume or CV in essay form

Things to include

- Focus only on undergrad experiences unless you are a freshman
- Give specific reasons for why you are a good candidate
- Pick a few examples, such as a research project, to write about
 - Can show how you overcame a research challenge
- Show growth as a researcher or a student
 - If you made a mistake or didn't do as well in a class, highlight how you've improved since then and show that those mistakes have made you a better candidate
- Talk about why you want to go to that specific program (why does it interest you)
- **Be positive!**

Things to exclude or not do

- Any sort of repetition (constantly edit this away)
- Fluffy language like how you're amazed by the beauty of the universe (keep that to a minimum)
- Don't avoid any weaknesses or shortcomings, talk about them and how you are working to overcome them (Show you address your issues head on)
- Don't be overly critical or negative, address negative aspects, but don't linger on them, phrase in a way to show growth
- **Don't undersell yourself** (there's a lot more you can offer than you think!)

Here's some of my Successful Essays

- NRAO: https://docs.google.com/document/d/1q28GcPI_CDKBBK_KxQK1K1ZHHwq1rYcBdM7DISNQytlzY/edit?usp=sharing
- Hawaii: https://docs.google.com/document/d/1ae_JyWnYyH8hDhmKbuDGqAWcEhrq5gL3Lw6BRWZ4s18/edit?usp=sharing
- Harvard (SAO): https://docs.google.com/document/d/1-SDiG_25EzKgUKcmIIH5H3ea5HvqGj2R7dH6PoTAFyE/edit?usp=sharing

General tips



Photo for the road

- Start Working on applications ASAP and constantly revise your work
- **Apply to as many as possible (There's no application cost)**
- Have as many people as possible review your written material
- Keep track of when you'll hear back from the universities
- Stay Organized!
- Even if you feel you don't have a lot of experience, you should absolutely apply!

Additional sources for help

- A few helpful videos Dr. Kirkpatrick made in 2021 https://mediahub.ku.edu/media/t/1_hnjdzq3
- and https://mediahub.ku.edu/media/t/1_thufaxo2
- Good list of Astro places to apply to made by fellow 2023 IfA Reu student Scott Barrow <https://docs.google.com/spreadsheets/d/1mN3CeQ3K4DCaCykmQctbT6aq6ZRSaxWAIYM67qN-3mc/edit?usp=sharing>
- Feel free to email me if you would like me to help or give feedback on any of the application material: krdonaghue@ku.edu

