

HEALTH PROFESSIONS PROGRAM



“DOING RESEARCH!”

What is it? Why is it valuable?

Tips for finding and funding!

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Health Professions Program

Up Ahead:

- What *is* “Research?”
- Why do so many Pre-health students “do” it?
- Finding Research Opportunities:
 - At Dartmouth
 - Beyond Dartmouth
 - Structured/Build Your Own
- Reaching Out to Possible Research Mentors/PI’s (Principle Investigators)
- Funding; Dartmouth Resources
- Expectations and Considerations
- Professionalism and Ethics
- Get the Most of the experience
- Tips From Peers

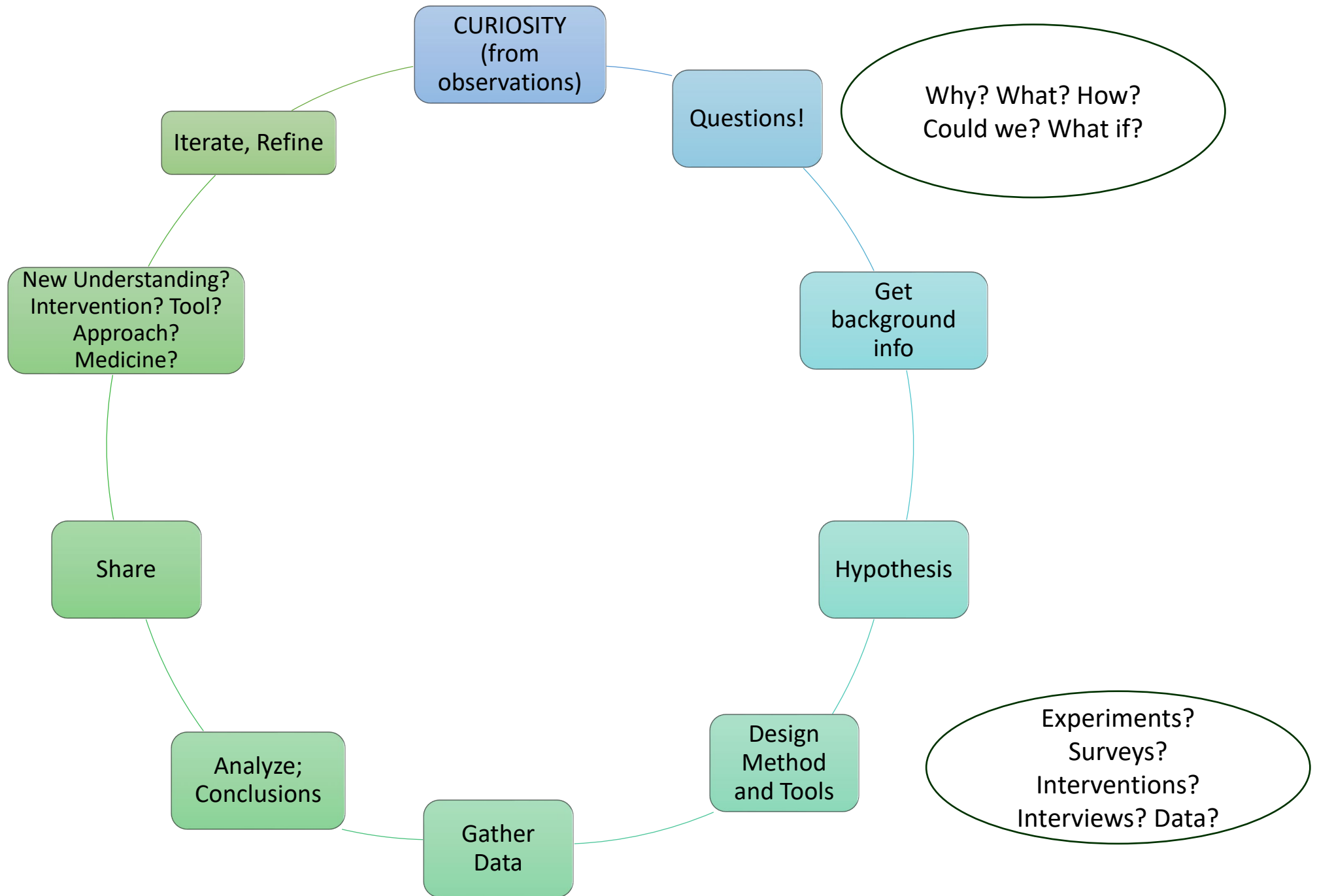
What is Research?



Structured Inquiry

Object of research is to “extend human knowledge of the physical, biological, or social world beyond what is already known. Research is different than other forms of discovering knowledge (like reading a book) because it uses a systematic process called the Scientific Method.” National Academy of Sciences

“Research” often conjures up images of lab benches and test tubes, academic research but is actually much broader in scope. It can be in any academic discipline, from theater to government to chemistry. It can be research in a traditional sense (e.g. experiments, data collection, archival research, structured interviews) or it can involve work that might be better characterized as a creative project (e.g. a work of art, a collection of poetry, a screenplay).” UGAR website



When have you done research?

Officially or Unofficially/Structured or Unstructured! 😊

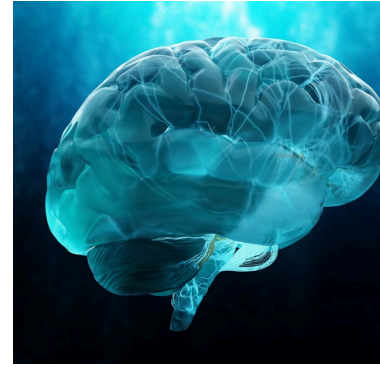
We've been experimenting and "doing research" since our earliest days! For instance, early "unstructured" research—a toddler dropping something over and over again to see 1. their effect on something 2. what happens when something falls (gravity!)

Why *IS* “research” so relevant to “pre-health”

Greater skill and/or insight into

- Continuous learning; creativity; problem solving
- Approach things with curiosity and engagement
- Better understanding how inquiry happens— and/or the skills to autonomously create a path of inquiry
- HOW does new knowledge emerge??
- Ability to integrate, analyze, synthesize
- Communication skills; Collaboration Skills; Mentorship
- Understand what others may have contributed to what you can now know or use.
- Critical thinking: Accuracy? Ethical? How can it be utilized? What/Who’s included? What/Who’s left out?

Some of you will help create new knowledge—All will use the new knowledge created by someone !



What a range of possibilities! You Might:

- Try on research for a couple of terms
- Start research in one area but shift to something of particular interest
- One lab/research mentor for all 1-4 years
- Off term immersion and/or ongoing at Dartmouth or elsewhere
- Multiple projects
- Assist, help functional with tasks
- Take on independent questions/projects (essential for Md/Phd)
- Focus on lab/science research or, could be Clinical; Public health; Engineering; Health Disparities Ethics; History; Classics; Econ; Anthro.... ETC.
- Independent Project for course credit
- Thesis for course credit

Questions Galore! There is so much to be learned and wondered about in ANY area of life:

Human Biology

Public Health

Music

Memory

Neurons

Disease Pathways

Social Justice!

Plants

Car-T Cells

Art

Circadian Rhythms

Religion; Anthropology;

Conflict; Peace

Growing Food

Chemistry

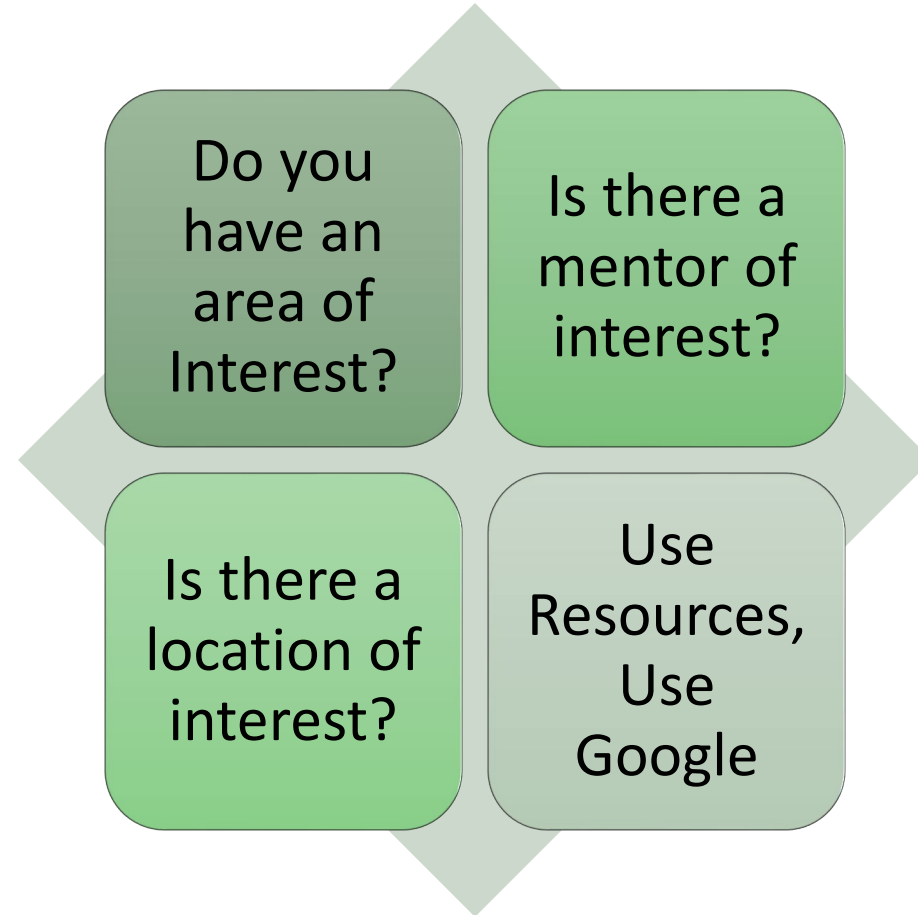
Quantum Physics

Government

Psychology...

Infinite topics, and topics within topics

Finding Research



Next Steps:
Reaching Out
Taking Action

There are Structured Programs with Applications

- Eligibility criteria?
- Carefully track app due dates (some are rolling admissions for which earlier submission is better)
- Requirements for rec letters, Asking for letters
- Start and end dates (IE: does it start before spring term ends?)
- Timeliness: Seek feedback on essays/cover letters. CPD can especially help with cover letters and resumes.

Next Steps:
Reaching Out
Taking Action

AND! You Can Build your Own!

- What most students do
- Who is doing what that you might be interested in?
- At Dartmouth? Outside of Dartmouth?
- The art (and etiquette) of the “cold email”
- Follow up (the ball is your court)

Searching for possibilities:

- **Make sure to explore [Dartmouth's UGAR website \(Undergraduate Advising and Research\)](#).** GREAT information, including a project database—yet there is so much more beyond that database! SEE ALL THE OPTIONS BELOW!!
- Check out [Academic Depts](#) at Dartmouth (or elsewhere). They all have a “People” tab. What are faculty studying? ALL faculty throughout Dartmouth are possible to reach out to including grad school programs
- Go to [Med School](#) websites. Look up faculty by key words
- Did you know we also have a public health school? [The Dartmouth Institute](#) (TDI)
- Go to [academic medical center](#) websites and google “research” or “clinical research” using key words and see if you can learn about projects.
- For structured summer opportunities: The [HPP Opportunity Directory](#); [The AAMC research directory](#); the [AAMC summer enrichment directory](#); [National Science Foundation](#); NIH [here](#) and [here](#); and so on!
- Connect with the [CPD](#) and check out [Handshake](#) for off-term research or scholarly opportunities. Learn more about the CPD's [funding resources HERE!](#)
- Seek out alumni [Dartmouth Alumni LinkedIn](#)
- Other Dartmouth offices for relevant faculty/staff of interest: Dickey Center; Rockefeller Center; Thayer Engineering; Dali Lab; Neukom Scholars; Tuck Business School, EE Just; Mellon Mays; Ethics Institute; Magnusson Center for Entrepreneurship; Hopkins Center etc.
- Network: Ask friends, classmates, profs, alumni, advisors, for ideas/connections
- Google Away! Interested in maternal health? Have a location in mind? IE: Google Maternal health research Ohio State University-- and any other combination of relevant things

Next Steps:
Reaching Out
Taking Action

Let's Talk About Outreach: The "Cold Email" (it's not so scary)

In an educational environment such as ours:

- Faculty, PhDs, MD's etc are also human. You are reaching out to another human!
- Most academic professionals enjoy teaching and are inclined to be mentors
- Many projects need help

“Cold” EMAIL (It’s not so cold...)

Simplicity is good + professionalism + authenticity

Dear Professor Lee,

I am very interested in gaining research experience and, after taking your class, and learning more about your research (or, after reading about your research on your website) I wondered if you might have space to take on a research assistant.

Though I would be a beginner, I am curious and self-motivated to learn. If this is a possibility, I would love to meet at your convenience to talk about it with you.

Thank you so much for your consideration,

X

Dear Dr. Thomas,

I have been very interested in learning about cancer research for a long time spurred on by my own family’s experience with cancer. I’ve read a lot on my own, recently took Cell Biology, and I feel ready to start gaining hands on experience.

I read about your work on the Geisel website and my friend ___ said that sometimes you take student researcher assistants. I wondered if you might have a spot at this time? Please let me know if we could discuss any opportunities, at your convenience. I’d love to talk with you even if you don’t have spot. All the best,

X

TIPS

- Look up their research ahead of time so you know what they focus on—even if you don't fully understand it (normal)
- It's ok to be a beginner—some will need people w more experience, but many are prepared to take on a beginner
- If they don't have a spot—or they need different skills, that's okay.
- If they don't respond, circle back a few days later. Change the subject header.
- You may need to reach out to several people before there's a match.
- The balls in your court—if you don't hear back, try again!

CO-CREATE AND CLARIFY EXPECTATIONS

- What would the work be?
- Who do you work with? PI? Grad Students? College Peers? Group? Solo?
- What are the expectations
 - # of hours?
 - Schedule? Can you be reliable?
 - Type of engagement?
 - Skills?
 - Opportunities?
 - Mentorship?
- Funding: Are they able to pay you?

Research Funding and Support:

Dartmouth Resources:

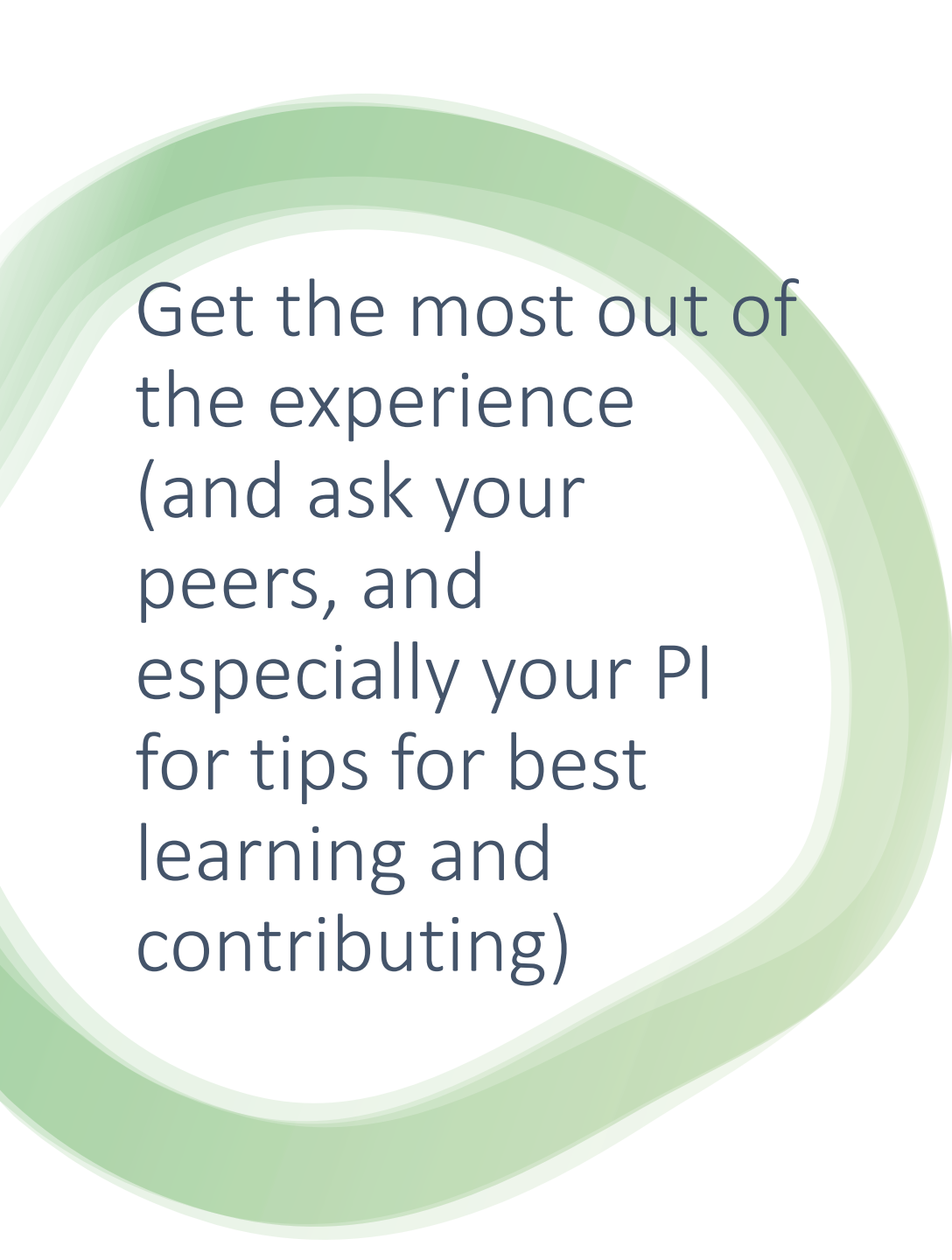
- [UGAR](#)
- [EE JUST](#)
- [CPD](#)
- [Dickey Center](#)
- [Rocky](#)
- Thayer
- First Gen/Low Income (FGLI) office
- Academic Depts
- Hopkins Center
- Irving Institute
- Dali Lab
- Work Study ETC

Preparation:

- Grant application Due Dates
- Criteria, Requirements, and Eligibility
- Do you need an advisor/mentor?
- Timeliness
- Support: Each org is usually willing to help brainstorm ideas as well as review applications ahead to make sure it meets criteria. CPD advisors can help with professionalism for cover letters etc. Faculty, and other advisors can help brainstorm your ideas.

Funding Tips

- First ask the PI/Mentor if they have funding to pay!!
- Prepare ahead for a future term experience well in advance to have the best odds of getting grant or funding. **Learn due dates for grant funding.**
- When applying for UGAR funding give yourself enough time to fill it out as thoughtfully as possible. Articulate how this opportunity connects to your academic journey and goals. Connect with UGAR advisor (Jeanne Briand) for further questions about UGAR funding application questions
- You found something unfunded for an off term but need to earn money? Check out other Dartmouth funding. Do research job part time and find other job to supplement?
- Can only find “unpaid” opportunities? How many hours could you “afford” to do unpaid, and still have time for school and job? Discuss with PI-be upfront about your time limits.
- Keep looking until find a PI who can pay. If they can only cover for part time hours, let them understand you are limited to that.

A decorative graphic consisting of several concentric, overlapping circles in various shades of green, creating a soft, organic shape on the left side of the slide.

Get the most out of the experience (and ask your peers, and especially your PI for tips for best learning and contributing)

- Be an active learner: If you are new to what you are doing, be honest. Demonstrate curiosity-ask questions and engage. Keep track of your insights. [Article Nature](#)
- Responsibility and Reliability: If you made an agreement, someone is counting on you. Be clear if you can not follow through on something, give plenty of notice. Arrange your schedule to follow through on your commitment. Be prepared for your shifts.
- Communication: Be upfront about the time you can commit, and your agreements. If something changes for you let your mentor/supervisor know.
- Integrity: Honesty in research is crucial. Being trustworthy is an inherent part of professionalism and building relationships. Building trust builds greater opportunity as well.
- Being ethical: another element of integrity
- Gaining Independence: As you build your skills, if you are engaged and interested in taking on more independence let your PI know.
- Moving on: It's ok to move on and try something else if have new priorities, a new research opportunity; wish for a different environment, etc: JUST be clear in your communication with your supervisor and follow through in the meantime.

Tips from Current Pre-Health Mentors

- Don't be afraid to just cold email a faculty member, even if you don't think you're perfectly qualified for the position!
- Be persistent! If a faculty doesn't respond to your email, it's not because they are ignoring you.
- Be proactive and reach out to as many people as possible. You might hear a lot of 'Nos' but don't let that discourage you.
- If a faculty member does not have room in their lab, follow up and ask if they know anyone who does.
- Get involved in research projects that actually interest you, not projects that you think you should do for your resume or application.
- Don't rush to find a research lab. Choose your lab mindfully. You can ask to shadow current members of the lab and see if you fit in with the lab environment!