



Chris Palmer (University of Maryland)

Entering Research

Outline

- Discussion ground rules and guidelines
- This session's goals
- Activity + small group discussion
- Large group discussion

Reflect on Group Dynamics

- What are some good and bad group behaviors? (on white board)

Reflect on Group Dynamics

- What are some good and bad group behaviors? (on white board)
- Good
 - Cooperating
 - Clarifying
 - Inspiring
 - Harmonizing
 - Risk Taking
 - Process Checking
- Bad
 - Dominating
 - Rushing
 - Withdrawing
 - Discounting
 - Digressing
 - Blocking

Rules / Guidelines for Discussion

- Be respectful
- Be kind
- Be patient
- Everyone is starting from a different level of experience and confidence.

CMS Code of Conduct

Approved by the CMS Collaboration Board 12-April 2019

The CMS collaboration consists of members with varied national origin, ethnic background, race, gender identity, sexual orientation, gender, age, physical ability, and religion. As a community, we are committed to being positive and inclusive in all regards.

We follow the [CERN Code of Conduct](#). Members of CMS must maintain a professional environment in an atmosphere of tolerance and mutual respect and abstain from all forms of harassment, abuse, intimidation, bullying, and mistreatment of any kind. This includes, but is not limited to, intimidation, sexual or crude jokes or comments, offensive images, and unwelcome physical conduct. Members must keep in mind that behavior and language deemed acceptable to one person may not be to another.

We commit to helping our community adhere to this code of conduct and speak up when we see possible violations of it. We strive to treat those outside of CMS as we would members of our own community. In the event that the letter or the spirit of this code has been violated, appropriate action will be taken, up to and including procedures specified in Annex A3.2 of the CMS Constitution.

Goals for Today's Session

- Think about and set expectations as a researcher
 - Develop Identity as a Researcher
 - Develop an Understanding of the Research Environment

Your expectations for your research experience (5 minutes)

1. Why do you want to do research?
2. What specific goals do you hope to achieve in your research experience?
3. What are your expectations of working with a research team? Please list them below.
4. What do you think will be expected of you as an undergraduate student conducting research on a “real” research team? Please list them below.
5. What contributions will you bring to your research team?

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Move into groups of 3 and discuss your answers. Select one of you to summarize for all of you. TAKE TURNS DOING THAT

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Let's discuss.

Your expectations for your research experience (5 minutes)

6. What is your greatest concern, and what are you excited the most about?
7. Explain your understanding of the scientific process as you see it today. How does a scientist approach a research question?
8. What do you think are important abilities/skills for an individual to have to be able to conduct research?
9. Which of those abilities/skills do you have?
10. Which of those abilities/skills do you lack? What can you do to develop the abilities that you think you may lack?

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Your Expectations of Mentors

- We expect a lot from our mentors, and our mentors have a lot of expectations for us too.
- Please prioritize the list and answer questions
 - <https://forms.gle/uv5BRxbYSmW6Xhfn9>

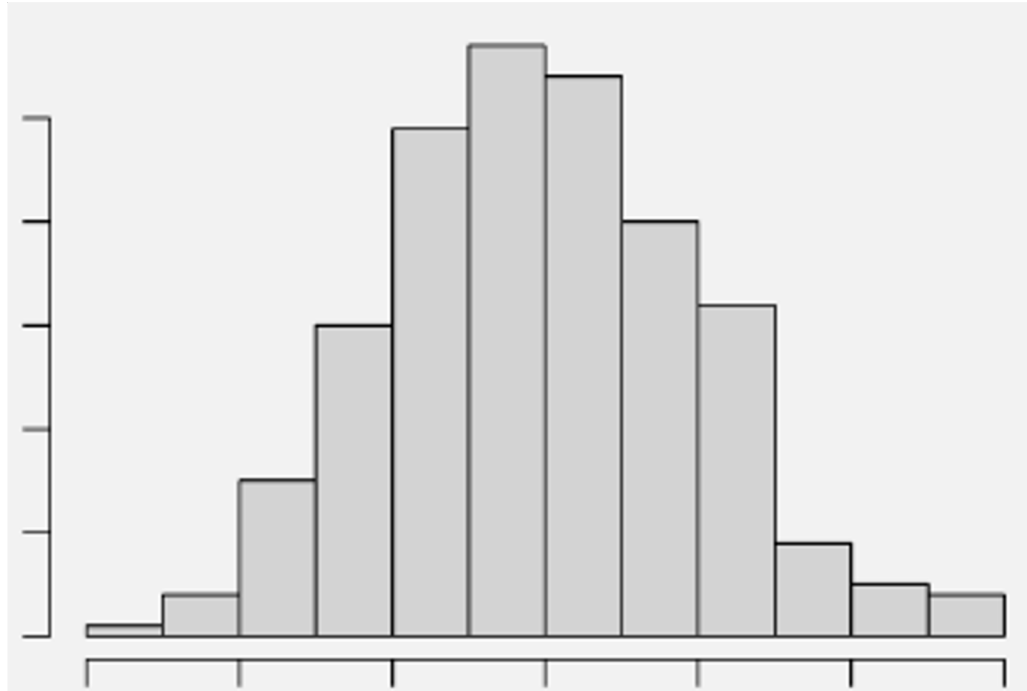
Your opinions on documenting research (5 minutes in groups)

1. Why is it important to keep a research log?
2. In what format should you document your research?
3. How will you use your documentation in the future?
4. What elements of research need to be documented?

Research “Notebook” entries

- What are some good items to document in your research? (on white board)
- Date
- Hypothesis
- Question that you are trying to answer
- Procedures
- Analyses of data
- Interpretation of results
- What to do next
- References (talks, papers)

How to label a plot?



Seeking help in research

- What makes you resist asking from help from a mentor?

Case Study: Busy Mentor

- I've been in my summer program for about three weeks now. It has been fun and exciting so far. My mentor, Dr. Coleman, is starting to seem too busy to chat as often now though. She was very eager to talk at the start but less so now. I'm wondering if I did something wrong or if she is frustrated with my progress.
- Discussion questions:
 - What are some explanations for why Dr. Coleman is less available?
 - If the mentee needs further support, what could one do to access it?

Case Study: Overwhelmed

- Ashley has found a summer research position in Nanotechnology. She started a couple of weeks ago and she is excited about the research field but she doesn't really understand her project. She is shy and overwhelmed in the first lab meeting. She understood little of what was discussed and she won't take biology until next year. At the meeting she just nodded like she understood because she did not want to look stupid. Now, she is terrified to talk to other lab members. Her mentor, Sam, is nice but very busy. She has to write a 1-slide summary of her project for the next lab meeting but she has no idea where to begin.
- Discussion questions:
 - What should she do? Is there a way for Ashley to approach her mentor?
 - What resources might she use to help herself understand better her research on her own?

Case Study: Easy Project

- I was so excited when I got this internship, but now I'm doing the same measurement over and over again. Why do we need to know this magnetic field so precisely anyway?!?! I like Tom's machine learning project much better. I'd like to do that.
- Discussion questions:
 - Why do you think you might be doing this project? Could it be part of a bigger picture?
 - How might you approach doing a project you find more interesting?

Summary (1/2)

- When you are new to anything, your expectations might not match your experience.
- Your best bet is to talk with people with experience (e.g. your advisor/mentor).
- Think about who else can support you at your summer institution.
 - Another faculty member? A postdoc? A grad student?
- Everyone else in this room can be support for you.
 - Reach out to people in your cohort when you have questions; you all have knowledge within you.

Summary (2/2)

- Document your research, results, questions and ideas!
- When in doubt, ask questions, go back to the basics, the big picture.
- Different identities can create barriers between mentors and mentees:
 - Open and honest communication can help develop positive relationships
 - When you are stuck, say it.
 - Sometimes it is difficult to speak up: remind yourself of your past accomplishments and work on building your confidence!
 - Identify other people that you can reach out for help