Working and Communicating with your Mentors

Most REU students will be part of a research group with graduate students, postdocs, and faculty and will have multiple mentors. Also, you (the REU student) will be very useful resources for each other.

In your first meeting, ask your mentor about their preferred forms of communication (email, phone, in-person, Slack, etc.).
- It is very likely it's email (in addition to meeting in person with you).

Be professional in your emails:

Professor X (or their first name, if they let you know when you meet that they prefer first name),

Body of email. (Please use standard punctuation, capitalization, etc.)

Thanks,
Your name

Questions to consider:
- What are your preferred methods of communication? If your mentor's preferred method is email, how do you accommodate that?
- If you're stuck on an aspect of your research, how do you let your mentor know and ask for help?
- What are various strategies for dealing with when your mentor is away from campus for travel?
- If you're in a research group with students and postdocs in addition to your faculty mentor, how can you best take advantage of having multiple mentors?
- What other resources (other than research mentors) are available if you are stuck on an aspect of your research? Could another REU student answer a question or provide assistance (for example, through the #reu2020 Slack channel)?
- What questions can you ask your mentors to learn more about their career paths and hearing their advice for your own career interests?
- Meetings
  - Consider this scenario: You're in a meeting with your mentor and s/he is explaining some aspect of the research and you don't understand. What are useful phrases to have in your back pocket to allow you to pause the conversation and have your mentor take the time to clarify what you don't understand?
  - How can you optimize what you get out of your meetings with your mentor?
  - What are various strategies for having a clear meeting agenda and clear expectations for what you will accomplish before each meeting?
  - What are various strategies to ensure that you emerge from a meeting with a clear set of tasks to complete before the next meeting?

Taking good notes:
- In addition to keeping track of task deadlines and meeting times, consider keeping a daily research journal to track work done, things tried, useful strategies learned, etc. This will help you remember how you completed a particular step in the research project, saving time if you need to go back and make changes (or present your methodology in a group meeting, talk, or even a future paper)! Even the most theoretical research is iterative, especially when starting out, so expect to re-examine, improve, or review earlier steps often!
- One method is to keep a running powerpoint of main plots/results and explanations to go with each.

Code Writing Best Practices:
- Be sure to include useful comments throughout.
  - This really helps when you have someone else look at / help with your code / when you revisit your code later on.

Advice from past REUs:
- Be prompt
- Come ready with topics, questions, get your questions answered
  - Be proactive in your meetings
- Check in regularly - 9 weeks will go fast!
- Aaron is here to support; go to him!
- Ask for clarification
- If you get stuck - think of Who, What, Where, When, How as prompts
- Take good notes during meetings
  - At the end of your meetings, be sure to have clear action items

Don'ts:
- Don't be shy about asking questions
- Don't space out during meetings

Optimizing Your Progress

Note: most REUs will be part of a research group with students, postdocs, and faculty and will have multiple mentors. Also, you (the REUs) will be very useful resources for each other.

Questions to consider:
- What has worked for you in the past to stay motivated and enthusiastic on a project?
- If you're stuck on an aspect of your research, what are various strategies for getting past the obstacle?
    - How long is too long to work on a problem before reaching out to your mentors for help (given the 9-week timespan of the REU program)?
- If you begin to procrastinate, how can you identify the underlying cause? Who can you reach out to in order to overcome the obstacle?
- How do you help yourself become more comfortable with the fact that it is okay to make mistakes and that making mistakes is often part of the process of making progress?
- Meetings
    - How can you optimize what you get out of your meetings with your mentor?
    - What are various strategies for having a clear meeting agenda and clear expectations for what you will accomplish before each meeting?
    - What are various strategies to ensure that you emerge from a meeting with a clear set of tasks to complete before the next meeting?
    - In between meetings, how can you help yourself maintain good progress?
    - What are various strategies for dealing with when your mentor is away from campus for travel?

Advice from past REUs:

- Break up tasks into smaller tasks! This will help you stay enthused and avoid procrastination or feelings of being overwhelmed.
- Remember to take breaks
    - If you're struggling with something, try doing something else and coming back to it!
- If stuck:
    - Don't wait too long to ask for help
        - 9 weeks will go by fast!
        - Max wait time is ~a day
- Be a pest! Better that than to not ask for help.
- Strive to develop concrete goals from the start. This can also help you stay on task and motivated.
    - Set a timeline for these goals
    - Set milestones
- Set up expectations for both yourself *and* your mentor(s);they may not know what works best for you as an individual!

Developing Independence

Note: most REUs will be part of a research group with students, postdocs, and faculty and will have multiple mentors. Also, you (the REUs) will be very useful resources for each other.

Questions to consider:
- What strategies can you use to build your own and each other's (your fellow REU's) confidence?
- How can you help establish trust between you and your mentor?
- What can you do to create an environment where you can achieve goals?
- What can you do to create a working environment that stimulates your creativity and initiative?
- What can you do to foster a relationship with your mentor that allows for your creativity and initiative?
- How do you help yourself become more comfortable with the fact that it is okay to make mistakes and that making mistakes is often part of the process of making progress?
- Can you have too much independence?
    - How would you know?

Advice from past REUs:

- Stay in regular contact w/ mentor
- Don't find yourself with too limited communication w/ mentor (counterbalance to developing independence)
    - Mentors will likely be a long-term relationship for you
    - Reference writer
- If you have an idea on how to start something, try it, see what happens, learn from it.
- Don't always ask others how to do something -- try on your own, then ask for help
- As you talk w/ others, include what you're learning - you learn a lot from teaching others
- When you go into your meeting with your mentor, bring your own ideas for how to do something, how to approach the next step, etc.

DON'T BE AFRAID TO MAKE MISTAKES!