U.S. DEPARTMENT OF ENERGY | Office of Science

Virtual/Remote Mentoring Guide

Resources for mentors under programs with the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists

Summer 2020

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With sincere appreciation for the work of the team established on behalf of the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists (DOE WDTS) to develop a mentoring guide and tool kit in support of virtual/remote internships. These resources are provided to assist the DOE National Labs that continue to provide internship experiences for the DOE WDTS programs during these unprecedented times.

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Preface

This summer, you and your intern(s) will participate in a remote internship experience that disrupts the normal mentorship routines. You have committed to the placement and development of student interns and want to continue this practice, to the best of your ability, despite the challenge it presents. This guide is provided to help you navigate aspects of mentoring that may be more important than ever and/or that may need to be modified for a remote experience. In addition to this guide, the Workforce Development/Education (WD/E) team at your laboratory may have additional support specifically for mentors, whether targeted trainings, videos, meetings, or other materials. This guide also includes a list of Frequently Asked Questions (FAQ) in Appendix A.

During these stressful and uncertain times, it is even more important to develop and maintain mentor-mentee relationships and provide support to the next generation of STEM professionals. The impacts of a global crisis affect people in different ways, leaving some feeling frightened and overwhelmed, leaving some unfocused and less productive, and leaving others less engaged. Mentors should provide a support system for their mentees, encouraging them to stay actively engaged in a remote fashion but also prioritize their health over productivity – the same things expected of staff.

Below we highlight a few best practices provided in this guide that can ensure active engagement and oversight with your student interns, while also providing the level of support that some individuals may need:

- Establish a pattern of regular communication
    - Daily check-in conversations
    - Weekly mentor team engagement
    - Monthly progress reports
- Maintain reasonable expectations
- Listen, don't fix

Throughout the experience focus on what's important. Remember that the human and empathetic part of being a mentor is just as important as the technical interactions. Consider the health, safety, and mental well-being of student interns above all else.

Thank you for agreeing to mentor an intern remotely this summer. You are providing a much-needed opportunity for students and recent graduates during a crucial time. In making remote internships available to students the Department of Energy National Laboratories are strengthening our collective reputation and building strong relationships with our future workforce.

I. Preparing for Your Intern – Before Your Intern Begins

1. Equipment for remote work

   Identify the equipment and resources your intern will need to conduct their work remotely and to complete program deliverables (IT Equipment Checklist in Appendix A). Work with your group administrator or others such as your information technology (IT) representative for ordering needs and configurations. Make sure the intern is notified of delivery dates and knows whom to contact if items do not arrive as expected. Consult the Pre-arrival section of the Intern Onboarding Checklist (Appendix A) and confirm that all items are completed. Contact your designated WD/E team member if you have any questions.

2. Identify project background materials and begin planning

   Remote internships should provide enough remote work for interns to fulfill their program requirements. Creating a full-time schedule of remote work can be challenging but consider thinking outside of the research project. Here are some example tasks for supplemental work that still fulfill a high-quality research internship:

   - If capable, have your intern pull together text for a review article or book chapter
   - If funding support available, have your intern complete online/lab offered relevant class
   - Collaborate with your team to identify other work in support of related projects

   Prior to your intern's onboarding, identify essential and supplemental project background materials that will be helpful as your intern begins their research project. Consider sharing reading material, project details, research examples, related videos, etc. to introduce and acclimate your intern to the project. Please make sure your intern knows that reviewing these materials prior to their start date is optional.

   Consult with your orientation/onboarding team or the Laboratory's WD/E team to verify the required trainings that will be completed during orientation. Work with your training team to add any training needed for the intern's project work. For training that is typically held in person, work with the training team to identify alternatives for a remote internship.

   Remote work will result in more independent work time for your intern so it is critical to have specific work goals, especially in the beginning of the internship. You may want to begin to outline week-by-week goals for your intern, based on the remote work you identify. The Internship Work Plan Template from the University of Washington (see Appendix A) is a useful resource to guide the creation of a week-by-week plan for your intern. However, avoid the temptation to plan out the entire internship in advance as the work plan should be a collaborative document that you develop and revisit often with your intern.

3. Identify and prepare a remote mentoring team

   For most interns this will be their first remote work experience and they may need more coaching and guidance than would be expected if they were physically "right down the hall". To ensure that your intern has consistent support, regular check-ins and a variety of people with

whom to interact remotely, we suggest that you form a mentoring team with other members of your group.

Identify an early career member of your team who can serve as a "peer mentor" for your intern. The role of a peer mentor is to help your intern adjust to and feel included in the culture of the laboratory, and to address the day-to-day questions and concerns your intern might have about working with your team. Review the Peer Mentor Guide (Appendix A) with the peer mentor to ensure they understand what is expected, and write an email introduction to connect the peer mentor and your intern.

Schedule a meeting or meetings for the first week of your intern's experience to introduce your intern to the mentoring team, other group or project members, your team and group leads, and other interns in the group. You may want to collect brief introductory biographies and pictures of the mentoring and group team members and provide them to your intern for reference.

As with traditional internships, an emergency point of contact needs to be identified in case of your absence or unavailability. Appoint someone on your team or in your division to be your back-up to the intern. Ideally, introduce your intern to the selected person within the first week of the internship.

Refer to the Quick Tips on Effective Remote Mentoring and Community Building resources in Appendix A for further details.

4. Reach out and begin building relationship

As the start date for the internship approaches, you can reach out via email to begin building a relationship with your intern and preparing them to join the team. Provide your contact information and your preferred communication methods. If you are comfortable communicating with them via text or messaging apps, let your intern know that they may contact you that way.

Confirm the intern's start and end dates. If needed check with your WD/E team regarding how your intern will connect for orientation and onboarding. Find out what time your intern will be available on their first day and let your intern know how and when you will remotely meet with them to address questions and make plans for the week.

Your manager or a mentor figure who manages employees would likely be willing to share the best practices for managing remotely that they have picked up on-the-job recently. Before your intern arrives, try to schedule a conversation with your manager or mentor to gain their insights on how best to manage your intern remotely. Some questions you may ask include:

- How best to maintain employee engagement remotely?
- How best to give feedback remotely?
- Do they have any experience managing a new remote employee who has little familiarity with a team and project?

II. Week 1 - Getting Off to a Good Start

This may be your intern's first job and it is almost certainly their first remote work experience. Share with your intern what your experience with remote working has been like. This can be a good way to normalize the experience (e.g., "At first I felt isolated from my colleagues") and share any strategies you've used to optimize your remote working experience (e.g., "Identifying my work priorities each morning and setting a schedule has helped me stay productive").

1. Intern onboarding

   Below are tasks that need to be completed to help your intern through their first week in a remote internship. Some of these will be covered during intern orientation, but reinforcement and review will help the intern retain the information. When appropriate, you may ask a group administrator or another member of your mentoring team to take care of some tasks.

   - **Intern Onboarding Checklist – First Day/Week (see Appendix A)**
     If you have been provided with an onboarding checklist, make sure that all items on the list for the first day/week are addressed by you, your group administrator or a member of your group or mentoring team.
   - **Timesheets**
     Verify the intern knows how to complete and submit an accurate timesheet on-time as required. If it is a PDF, make sure they can print, sign, scan and electronically submit. If it is electronic, make sure they can access and know how to use the time billing site. Check that they have the work package/task numbers they need to charge their time and that they have a basic understanding of the appropriate use of work package/task numbers.
   - **Environmental, safety and health training and other required training**
     Determine the approximate time needed to complete each training module and help your intern develop a schedule to complete all required training within a reasonable time. Reinforce the importance of safety even in their remote work environment.
   - **Reinforce Remote Operations Security (OPSEC)**
     Review with your intern the appropriate use of government equipment. Share examples of authorized and unauthorized use of government equipment. The intern may be working in a shared space so help them plan how they will protect sensitive information if needed and make sure they know what can and cannot be shared. Remind them to be mindful of documents on their screen, what they post on social media, and to use headphones when in meetings or talking with colleagues. Refer to the OPSEC Telework Guide (Appendix A) for additional information. Consult your WD/E and Laboratory Cyber Security offices for lab-specific guidelines.
   - **Provide list of websites/links interns need**
     A suggested list of important Lab Websites and Links and contacts, such as payroll, IT support and the WD/E team, has been provided in Appendix A of this guide. Review and update the list with your project and lab websites/links/contacts and any others that are not included.
   - **Remote Intern Agreements**
     Check with your WD/E staff about specific lab agreements the intern was required to approve and sign. Please review and reinforce any signed legal agreement(s) to ensure the intern is fully aware of the expectations and consequences they have agreed to. Answer any questions the intern may have regarding the agreement.

You and your intern may want to document in writing your shared expectations for the remote internship experience. While not legally binding, such a document can contribute to the success of the internship. In addition, should problems arise during the internship, the document may serve both to engage your intern in discussion and to aid discussions with your WD/E team on next steps. A template for a Mentor-Intern Agreement is included in Appendix A.

- **Laboratory Workforce Development and Education staff**
  Your intern will have met some members of your Laboratory's WD/E team during orientation. Review the roles of the WD/E team in providing support and guiding the intern on program requirements.

2. Establish remote communication

During the first week take the time to establish a strong foundation of communication for your intern with your mentoring and project teams. Include your manager and lab leadership when appropriate. This will allow your intern to experience a fully engaged remote experience with your lab. Your intern will learn some incredible skills during their remote internship, and this is the time to employ strong communication skills that build trust using the following guidelines.

- **Take advantage of teleworking technology**
  We are fortunate to have technology that makes remote collaboration easier. Make sure interns are comfortable with any approved online collaboration tools they need to use. In lieu of being able to sit down next to each other at a computer, lean on utilities like screen sharing to facilitate collaboration and aid discussions. Let your intern know whom to contact if they experience problems using or accessing any online collaboration tools. If needed, verify which online collaboration tools your laboratory has approved.

- **Introductions**
  Not all of us are in the same circumstance. Some interns will be sharing a space with others, others will have access to a private space to work, some may experience limited internet access and many will be in a completely different time zone. Getting to know your intern as soon as possible will be even more important than ever.

  Have at least one "get to know you" video chat with your intern in the first week. Ask about their interests, likes, dislikes, educational goals, career goals, hobbies, family, etc. Share about your family, hobbies, career aspirations, education, and research goals.

  Lead or have someone else lead a meeting with video to introduce your group and/or project team and share your organization chart. This allows the intern to see where your team fits in the lab. It is important your intern feels like a part of the team. Do this with your mentoring team also. Create opportunities to introduce interns to other interns.

- **Establishing Routines and Setting Expectations**
  Talk to your intern about establishing core hours and a regular work schedule. Consider your intern's time zone and ask if anything may prevent them from following a set schedule. Suggest they use 8 a.m. to 2 p.m. Pacific Time (11 a.m. to 5 p.m. Eastern Time) as core hours and then schedule their full work time over the core hours based on their needs.

Establish a cadence and method of regular communications. Let your intern know what to do if they will not be available on a given day or time (as for illness) and how you will let them know if you will be unavailable during your regular schedule. Confirm that they know whom to contact when you are not available. Review the Community Building and Guidance on Remote Communication documents (Appendix A) and implement some of the suggestions to help keep your intern connected regularly.

Go over some general remote work best practices from Telework Etiquette in Appendix A. Remind your intern that they should present a professional image even though they are participating remotely. Have a conversation about proper work attire for video meetings and conferences. Mention how the image they share with others represents them as professionals, and therefore they should be mindful of their appearance and workspace background.

Discuss your intern's workspace. Their workspace should be conducive to a productive work environment with as few distractions as possible and that is safe for the intern (remind them to check for tripping hazards, electrical safety, etc.). Refer to OPSEC Telework Guide in Appendix A for additional points.

- **Plan for successful remote working**
  Below is a Work Plan Template that you and your intern may use in collaboration to determine week-by-week goals and tasks for the internship. The more guidance and structure that the intern has, the easier it will be to keep them and the project on track.

Week 1: Date - Date

Theme(s)	*The overall focus of the week (e.g., orientation, planning the project, learning new skills, conducting the experiment, analyzing data, preparing deliverables)*
Goals(s)	*Specific, Measurable, Attainable, Realistic, and Timely (SMART) goals to accomplish during the week.*
Task(s)	*The specific tasks that the intern (or the mentor!) will perform to accomplish the weekly goals.*

Copy the table above as many times as needed to cover the length of the internship. This is particularly important when mentoring an intern remotely. See Appendix B for more information on SMART Goals.

You can find general mentoring guidance in Appendix B. Undergraduate Research Expectations and Mentor Expectations include questions to help you and your intern address expectations and questions you might have about mentoring and the internship experience. Sample Mentor-Mentee Expectations can also be found in Appendix B. The Mentor-Intern Agreement (Appendix A) or a similar document can be used to facilitate a conversation between you and your intern to reach a common understanding of expectations for the internship. A document to help you deliver FAST Constructive Feedback can also be found in Appendix B.

Above all **maintain reasonable expectations for your intern and yourself**. Student interns generally participate in laboratory internships to learn and experience what it is like to do research for a living. Mentors provide a challenging but enjoyable experience that helps interns expand their current skill set. Mentors ideally create an environment where mentees can learn from their own mistakes and successes, as well as lean on the mentor's experiences. As such, student intern tasks should not be considered critical to the success of the project. **More importantly, during these stressful and chaotic times, reasonable expectations of delivery and completion of tasks should be maintained without demanding heightened productivity of yourself or your student intern.** Internships on their own are stressful; participating through a remote experience for the first time is even more so. No one should expect masterpieces or flawless execution by either intern or mentor. Break things down into smaller, manageable chunks and set reasonable targets.

- **Ensuring a National Laboratory level research experience**
  The primary goal of the intern's experience is for them to feel they are a part of a national laboratory. The intern should begin to redefine themselves as a scientist and a part of a research team rather than just as an academic student.

  Please refer to Remote Research Experience Standards in Appendix A for the Department of Energy Workforce Development for Teachers and Scientists (DOE WDTS) accepted standards for a high-quality research experience with modifications for remote mentoring.

III. Week 2 – Community Building, Assessing, Readjusting

1. Remote Community Building

   Working remotely requires high levels of independence and discipline and can be isolating even for the most independent individuals. To help your intern combat the isolation they may feel at times, build on the foundation for communication established in Week 1 with additional Community Building (Appendix A) activities.

   Invite your intern, and encourage others to invite them, to meetings related to their project or their interests. During meetings do not ask interns to take notes, rather allow them to fully engage in the meeting and invite their active participation. Most remote meeting applications provide a way to record so that interns or others can later review the material. Consult the Meeting Check-In Guide (Appendix A) for additional guidance on successful remote meetings.

   Provide opportunities to interact with others less formally in a virtual environment. Encourage them to engage in Employee Resource Groups as well as remote/virtual activities hosted by the WD/E team at your laboratory. Generate opportunities for interns to work together. Set up virtual coffee breaks or virtual lunches to discuss a range of topics, such as your career pathway and personal experiences; ask the intern about their classes or classes they plan to take; ask about their future plans, etc.; or play remote networking games or another ice-breaker activity. When you plan your engagements, include other intern-mentor teams within your organization to further develop your relationship and personal connection. Consult the Community Building resource in Appendix A for more ideas.

   Establish a pattern of regular communication

   - **Daily check-in conversations**
     Working remotely will be a barrier for interns from the normal daily flow and engagement with other staff. This will be even more challenging for new student interns, who will initially only know a limited number of staff, and it could leave them feeling isolated. Mentors and their mentoring teams are encouraged to "check in" with their mentees daily, by phone or video, and have a conversation about their activities. These do not need to be long conversations (15 minutes or less) but are important regular contact to ensure connectivity and interaction. If the mentor is not available to do this at certain times, then a delegate should be assigned.
   - **Weekly mentor team engagement**
     Weekly, other members of the mentoring team (including the Team Lead or Division Lead) or the WD/E team should engage the intern in short conversations – again by phone or video conference – to ensure that they are continuing to receive adequate mentorship and that any challenges associated with teleworking are being met.
   - **Monthly progress reports**
     Mentors are encouraged to provide short monthly written reports to their manager with the details and progress of their student intern. In the appendix is a short template to facilitate this. The intent is to ensure that the proper level of interactions are occurring and being documented.

Over-communicate with your intern and ensure they have what they need to be successful this summer. If you have a doubt, follow up with them. If they go quiet, follow up with them. They do not have other interns next to them to ask questions and they will need to know it is acceptable to ask you questions. Refer to the Warning Signs resource provided in Appendix A. Also please be sure to coordinate with the laboratory's WD/E staff if you have any concerns or need guidance.

Consider implementing other ideas from the Community Building and Guidance on Remote Communication resources (Appendix A), and ideas that help emulate opportunities that normally occur in a physical environment. For example, several interns might be invited to an "Open Work" meeting in Teams where they can engage with other interns as they work.

2. Ensure intern understands the basics

   During week two, check in with your intern to ensure they understand the basics of the project and the laboratory. The learning curve for any national laboratory internship is steep but could be even more challenging in a remote environment. Check that your intern knows whom they can contact for all areas of their internship engagement. Reiterate or review contacts for the appropriate parties for project concerns, IT needs, WD/E programming, peer mentoring support, safety, etc. Keep in mind that your intern may be hesitant to reach out to other parties that they are not comfortable with, so reinforce that you may also be contacted for any of the above issues. Share your edited version of the Lab Websites and Links for Interns document (Appendix A) and encourage them to add to it.

   Appendix B contains additional activities you can use to help your intern, especially an intern new to research, develop understanding of their research project and to assess this understanding over the course of the internship. Appendix B includes worksheets on Research Group Focus, Research Group Diagram, Reading Scientific Articles, and Creating a Research Outline and Abstract.

3. Be aware and ready to adjust intern needs

   Be mindful of your intern's needs and adjust your approach accordingly. Your intern completed a remote onboarding, remote orientation, and assigned training during the first week. Check in with your intern on their comfort level with technology usage, research assignments, and other tasks. Additional training may be required if your intern is struggling in any area. Lean on your team, back-up mentor, and other mentor-intern pairs to assist in acclimating your intern during week two. As a general warning sign, an uncomfortable or unsure intern might be quiet. Pay special attention if your intern's communication with you decreases during the second week or any time during the internship. This may be a silent call for help that they do not understand a project component or technology tool. Review the Warning Signs document in Appendix A for other red flags.

4. Providing constructive feedback remotely

   Working remotely creates some unique challenges for providing feedback. Specifically, it is critical that you pick the right medium for providing your feedback – try to avoid giving criticism, even constructive criticism, in writing. It can be difficult to interpret tone and meaning over

email or text. Whenever possible, deliver criticism through one-to-one conversation, preferably with video. Ensure that your intern has privacy while receiving critical feedback. Take opportunities to recognize the successes of your intern in group meetings – this can amplify the impact of your words and boost your intern's confidence and self-perception as a researcher. More hints on Delivering Feedback can be found in Appendix A.

IV. Week 3 to Two Weeks Before the End of Experience – Internship Progress

1. Deadlines and Deliverables

   It is important to emphasize the established timeline for the deliverables. This should be communicated with the participant at the beginning of the appointment. This will help the participant prioritize their time. Refer to the WDTS Deliverables in Appendix A for more guidance. Be mindful of deadlines that may be beyond the intern's immediate control (i.e., facility or publication tracking approvals) and be sure to aid to the intern as needed.

   Encourage your intern to take full advantage of the remote tools provided to help with the development of the deliverables. This includes online courses and videos as well as laboratory led professional development offerings, such as How to Develop a Powerful Poster, Scientific Writing, etc. Check with your WD/E team as to what workshops are being offered remotely for interns during this time.

   Use screen sharing tools to provide timely and constructive feedback on rough drafts. Be mindful of your intern's experience; interns have varying levels of experience with writing and presenting. Pay special attention to the interns who may need additional guidance or help getting started.

   Determine an appropriate check-in process to track the intern's progress on deliverables. Utilize email reminders, remote platforms, and/or written drafts to ensure the deliverables are on track. Consider organizing work sessions with other interns or team members in which participants can request help from anyone in the "virtual" room while others continue to work.

2. Engaging interns beyond their research

   Engaging with your intern is important in remote mentoring and should now be an established routine. Fostering face to face interaction helps create a personal connection, allowing you to appear more human. Your intern will feel more connected and will feel that they are part of a team. Use these opportunities to build both skills and comradery. Continue to look for and generate ways to involve your intern and other in a virtual/remote community.

   Listen, don't fix. Mentors and managers are not always there to fix problems. Sometimes you are there just to listen and acknowledge the full range of emotions. Let interns know that what they are experiencing is natural and acceptable, and that you are there to listen and provide support.

3. Identify opportunities for your intern to present

   When appropriate, provide your intern with opportunities to speak to the research group during meetings. Have them begin with a short update or overview of their work and gradually work them into longer presentations as you gauge their comfort level with public speaking. Suggest the intern make notes of what they will say or develop a draft

presentation for feedback prior to presentation to the larger group. Generally, a five- to fifteen-minute presentation should help them sufficiently grow their public speaking skills.

4. Perform mid-experience check-in assessment

   Refer to the 30 days section of the Exit Checklist (Appendix A) and review the tasks for completion. Talk with your intern about their learning progress and discuss how they plan to incorporate what they have learned thus far into their deliverables. Be prepared to answer questions and offer guidance (i.e., what information is pertinent/critical to include on the poster, etc.).

   - Suggest additional training opportunities (e.g., books, project reports, publications in peer-reviewed journals, conferences, presentations and posters, proposals, involvement in press releases)
   - Collect regular status reports
   - Set an expectation that they contact you when they realize they may miss a deadline:
     - Be a good example. If you, the mentor, need to miss a deadline, make sure you communicate this to your student well in advance.
   - Set aside time approximately halfway through the internship experience to have a one-to-one conversation with your intern on how the experience is meeting or not meeting their professional goals. If the experience is not meeting your intern's professional goals, investigate ways that can help better meet that expectation for your intern.

V. Wrapping-up the Internship – Last Two Weeks

1. Deliverables

   Ensure any remaining project/program deliverables are met and that posters and presentations acknowledge WDTS support. Coordinate with Workforce Development/Education staff to have interns use the same document sharing platform for transferring notes and daily entries/logs as they used to monitor intern engagement, contact information, and research status. Remind your intern to upload all WDTS deliverables to WARS on or before the last day of the internship. Use online collaborative tools to meet your responsibility of completing the final technical review and ensuring all required approvals of the research paper, poster, and presentation. Please refer to WDTS Deliverables in Appendix A for more details.

2. Intern virtual symposium

   A virtual symposium or other poster/oral presentation opportunity will be part of the internship experience. Schedule remote practice sessions between mentor and intern or between interns in your division or group. Offer constructive feedback to the interns. Plan to support your intern through participation in the virtual symposium if your schedule allows.

3. Equipment

   Refer to your IT Equipment Checklist (Appendix A) or information provided by your IT department and communicate to your intern the protocols for returning equipment. Check that

your intern is aware of the expected return date and has the necessary packaging, return labels and packing list. Work with your group administrator or IT as appropriate to coordinate the return of equipment/resources.

Prior to the internship end date, review the Remote Intern Agreement or documentation that lists equipment, materials, and other items that must be returned. Please coordinate with Workforce Development/Education Staff to have these sent back.

4. Checkout

Below are tasks that must be completed as your intern approaches the last day of their remote internship. When appropriate, you may ask a group administrator or another member of your mentoring team to take care of some tasks.

- **Exit Checklist – Before End Date/Prior to Exit (in Appendix A)**
  If you have been provided with an exit checklist, make sure that all items on the list for Before End Date and Prior to Exit are addressed by you, your group administrator or a member of your group or mentoring team. Review and complete the exit checklist together (deliverables, equipment return, time billing, etc.). Check with your WD/E team for your lab-specific checklist.

- **Required Deliverables**
  Coordinate with the Laboratory's WD/E team to ensure that the intern's required deliverables are uploaded to the Workforce Development for Teachers and Scientists Application Review System (WARS). See WDTS Deliverables in Appendix A for guidance on required deliverables.

- **Continuation or Termination**
  Before your intern's appointment ends, determine if your intern will be (1) extending the remote internship; (2) returning to the internship at a later date *(add timeframe if applicable)* or (3) terminating the internship. If you are interested in having your intern extend the remote internship or return in the future, engage the intern in one-to-one conversations to determine their interest and future plans. Coordinate with the WD/E staff or Human Resources to request the appropriate extension or termination (exit) paperwork from (*add contact here*).

- **Mentor and Intern Survey**
  Ensure that both you and your intern have completed and submitted the WDTS Mentor and Intern surveys, respectively. Along with your team lead or manager, provide your intern with performance review feedback and rating. Check with the WD/E team about the format your lab prefers for intern performance.

5. Staying engaged, post-internship

If your intern will remain on the books, include them as part of the research team by continuing regular communications as often as needed to update them on research progress. Keep WD/E staff informed of your interactions when appropriate.

6. Communicate with WD/E during wrap-up/exiting process

   Throughout the wrap-up process, communicate with the appropriate WD/E team member to verify successful program completion. If you have any questions you may also check the Frequently Asked Questions (FAQ) document in Appendix A.

Appendix A – Resources and Tools for Remote Mentoring

IT Equipment Checklist:

☐	Address delivery verification		_____
☐	Address return verification & POC		_____
☐	Computer	Property #:	_____
☐	Docking station		
☐	Headphones		
☐	Packing list		
☐	Return shipping label(s)		
☐	Security token		
☐	Software	Pre-installed:	_____
☐	Software	Provide key:	_____
☐	Web camera		
☐	Other		_____

After reviewing your IT equipment checklist and determining your intern's equipment and material needs, work with either your IT representative or administrator to complete the packing list of all hardware and materials shipped to your intern.

Your intern should keep the packing list to guide them as they pack and return the items to you or your point of contact.

Packing List:

Below is a list of equipment and materials shipped to you for your remote internship. Please initial each item received under “Delivered”. Keep this packing list and use it as a guide when you pack and return all equipment and materials. Please initial each item packed under “Returned” and include this list in your packed materials.

Item	Delivered (initials)	Returned (initials)
1.		
2.		
3.		
4.		
5.		
6.		

Intern Onboarding Checklist

Use this resource to help your summer intern become acclimated to their remote internship. These actions can help facilitate effective onboarding for remote interns.

Intern Name	Start Date	Primary Work Location	Group Leader	Peer Mentor	Team Leader

Pre-Arrival: Steps to be completed prior to first day:

- ☐ Welcome new intern via phone or video call.
- ☐ Welcome new intern to their department via email.
- ☐ Encourage team members to welcome new intern. If new intern approves, share their bio and resume. Clearly describe where they fit within the group and outline projects they will support.
- ☐ Plan intern's first assignment
- ☐ Prepare first day and first week agenda (include time for compliance training; consider time zone)
- ☐ Identify and select a *peer mentor.* (See definition section for details)
- ☐ Verify and arrange for work tools (i.e. computer, printer, Wi-Fi needs, office supplies) and grant access to key drives, systems, tools, and platforms. Work with administrator and IT team to determine when hardware will be delivered.
- ☐ Start clearance process (if applicable).
- ☐ Other: _____

First Day: Steps to be completed on the first day:

- ☐ After Orientation is completed, welcome your intern via virtual call. Make sure to use video and share your screen!
- ☐ Provide virtual office tour (share preferred method of video conferencing software and helpful drives)
- ☐ Discuss first week agenda.
- ☐ Discuss expectations on:
  - Alternative Workplace Agreement (if working remotely is permanent). Discuss risks in work location if applicable.
  - First assignment
  - Safety
  - Derivative classification and export control review procedures (to be discussed in depth during first week)
  - Work schedule (share hours when new hire must be available, consider time zone if applicable)
  - Reporting absences
  - After-hours and weekend access
  - Confidentiality
  - Vacation requests
  - Time billing (work packages, pay dates, time off, flex time and staying within time billing variance, certification deadline).
- ☐ Introduce new hire to staff via email or during group meeting via video.
- ☐ Add new intern to relevant meetings and distribution lists.
- ☐ Other:

  _____

First Week: Steps to be completed within the first week:

- ☐ Invite intern to virtual events and attend with them (if possible).
- ☐ Discuss new interns job description:
  - What will they be doing?
  - What are your goals?
  - What are their goals?
  - What is expected each week of their internship, including their first assignment deadline
- ☐ Describe your management style and preferences.
- ☐ Set up on-the-job training opportunities.
- ☐ Ensure required training has been completed.
- ☐ Schedule daily check-ins to discuss their questions.
- ☐ Discuss the missions of the directorate and division.
- ☐ Discuss roles & responsibilities for the following job titles (Team Leader, Group Leader, PMOD, Division Director, Sector, Peer Mentor, Mentor(s), Administrator)
- ☐ Provide overview of online directories and resources (i.e., human resources, benefits).
- ☐ Discuss releasing information outside of the Laboratory and export control review procedures (provide link to your Information Release (IR) pages).
- ☐ Discuss major risks and associated controls specific to the new intern's position.
- ☐ Other: _____

Definitions:

- ☐ ***Peer Mentor***: Someone who can help create a positive first impression and accelerate the "time to productivity" of a new hire. A peer mentor can provide guidance, answer the new staff member's questions about the work environment, and introduce them to others and to the workplace culture in a positive way. Usually, this is someone with a comparable job title.
- ☐ ***Mentor:*** Someone who can provide guidance, motivation, support, and role modeling. Usually, this is someone with a higher-level job title.

Internship Work Plan Template

In collaboration with your intern, determine week-by-week goals and tasks for the internship. Below is a template that you can follow or feel free to create a work plan of your own.

Week 1: Date - Date

Theme(s)	*The overall focus of the week (e.g., orientation, planning the project, learning new skills, conducting the experiment, analyzing data, preparing deliverables, etc.)*
Goal(s)	*Specific, Measurable, Attainable, Realistic, and Timely (SMART) goals to accomplish during the week.*
Task(s)	*The specific task(s) that the intern (or the mentor!) will perform to accomplish the weekly goals.*

Source: Adapted from University of Washington Internship Workplan Template

Copy the above table as many times as you need to reach the end of the internship!

Peer Mentor Guide

As a peer mentor, you play a role in supporting the onboarding of research interns whether in-person or remotely. You were selected for this important role because of your positive attitude, interpersonal skills, understanding of the work environment, and desire to help others.

When an intern has a peer mentor, they have an additional individual to guide and to help them adjust to their new work environment. You can help them learn about the culture of the laboratory and work rules and practices, address day-to-day questions or concerns, and much more.

Our shared goal is to integrate the new intern smoothly, so that they feel valued and welcomed. We want to help them accelerate their learning curve and become a contributing member of their research team.

To make this process as easy as possible, we've suggested a few activities in the table below as a starting point for engagements.

Activities	Details
Introduce yourself	Set-up a virtual coffee break or virtual lunch - answer initial questions, provide useful group and Laboratory information
Help with minor logistics	Provide overview of office practices, meetings, etc.
Help with tools and resources	Share or demonstrate useful working tools and resources
Ensure intern has been introduced to co-workers and key contacts	Help intern build their network, so they can be a contributing member of the team
Help the intern feel like a member of the team	*Ideas (all virtual!):* Set-up a group lunch, coffee break, social events, etc.
Check-in frequently	Check in at least once a week to see if the intern has any questions; be available for conversations
Provide awareness	Ensure the intern knows they may come to you with questions about group dynamics, working with their mentor, etc., and that you are available to offer your insight, interpretation, and understanding.

We encourage you to meet with the intern's mentor prior to onboarding to understand any additional expectations of your role. Thank you for helping new interns to a great start!

Quick Tips on Effective Remote Mentoring

Part of being a mentor is guiding a research experience and sharing tools or skills, so your intern may grow and thrive in a research community. When remote mentoring, there are a few key things to keep in mind. Below are tips to ensure a successful remote internship.

Communication: Communicate early and communicate often! Make sure that communication with your intern is frequent and regular. In addition to videoconferencing, try sending periodic emails to check in, pass on an interesting link, or share a photo. Integrate your intern into your research team community and its communication channels.

Collaboration: Work with your intern to set solid expectations and goals for their project. Develop a detailed project plan with deadlines and milestones. Be prepared for slippage, and be willing to revise the plan as necessary, especially at mid-point. Aim to provide an enriching research experience.

Credit where due: Remember to acknowledge contributions in public: When your intern completes important project milestones, announce their successes to your research team. If you write a report or journal article, make sure that they are acknowledged for their contributions.

Be gentle with criticism: Remember that you are cultivating a long-time contributor. Positive, constructive comments are the most useful as well as the most pleasant to receive.

Don't airbrush your community: If you want an intern to stick around, you might as well make the experience as realistic as possible. Creating a bubble for the intern takes a lot of effort. When it inevitably bursts, they will be disillusioned.

Don't be that person: Be socially and culturally sensitive. If you and your intern don't share the same cultural background, ask respectful questions to understand the similarities and differences. Also, make sure to maintain appropriate boundaries in your communications. For example, your intern calling in the middle of the night to ask for relationship advice is not a pleasant situation for anyone; leave those conversations for their college friends.

Evaluation: Keep your intern evaluations objective; base them on your project plan. Make sure your intern hears your evaluations: deliver praise in public and criticism in private.

Professional development: If appropriate, offer written professional recommendations to interns. Your help in career advice, job searches or referrals can be invaluable for an intern.

Say "thank you" often: People like to be thanked for their contributions–publicly and privately. Creating an environment of appreciation makes interns want to keep contributing.

Solicit talks: Recommend that interns present their work. If you can, offer to help with designing their talks. If you know people who do work that your intern is interested in, or that your intern would be impressed to be introduced to, take the time to make introductions.

Stay in contact: Many organizations typically sustain themselves through personal connections. When in doubt err on the side of communicating professionally.

Community Building

As mentioned in the remote mentoring guide, working remotely requires high levels of independence and discipline and at times can feel isolating even for the most independent individuals. Hence, it is important to establish a community for your intern and focus on efforts on building that community.

Be intentional - Connect with other mentor-intern teams and establish intern-to-intern support. Find a mentor-intern pair working on related research or request a list of mentors/interns from your WD/E team. This is an opportunity to increase your intern's exposure to other mentors and interns at the lab, especially within your organization. Set up an introduction meeting during the first week. Encourage your intern to lean on other interns for idea brainstorming, discussion of experience, and as a resource to expand their laboratory network.

Be inclusive - Include your intern in meetings with other members of your research team. This allows them to learn of other areas of research and increase their knowledge base. Ensure your intern has regular remote interactions (may be short) with various members of the research team to inform, advise and build community. When appropriate, allow them a voice at meetings by having your intern either update or present their contributions to the project. It is best to start by having them speak or present last.

Develop a positive working relationship - Share your experience as a student or intern and describe where you are today in your professional life. Provide advice and guidance that will help them grow academically and professionally. Share your work plans and availability so there is always trust, accountability, respect and effective communication in your working relationship.

Encourage and support professional development - Empower your intern to take ownership of their career. Share information, tools, and resources available for them to use. Explain how in many cases professional development is to be done on their own time. Share your own experiences regarding how professional development has helped you. Encourage their participation in brown bags, LinkedIn Learning and other lab-provided opportunities and explain time charging expectations for these, if appropriate.

Lean on your WD/E team - Connect regularly with your Workforce Development/Education (WD/E) team member for insight, guidance, or simply to touch base. Your WD/E team should be connecting with you and your intern on a weekly basis. If this is not the case, please be proactive to connect with them.

Need help with introductions? Have your intern craft an elevator pitch that succinctly describes their work. Consider posing the following questions to assist in creating this pitch:

- Have interns answer the question "What are you studying?" if it were asked by a non-expert. Limit to one sentence answers.
- Have interns answer the question "What are you studying?" if it were asked by an expert (i.e. a graduate student in your lab, university professor, another mentor, etc.). Limit to one or two sentence answers.

Operational Security (OPSEC) Telework Guide

Teleworking? Be Mindful About What You Post

Mentors must be aware that for some interns, this is the first time that they have worked professionally and more importantly at a national laboratory. You, the research mentor, and the lab's onboarding Workforce Development/Education (WD/E) staff will need to provide guidance safe operational security (OPSEC) and cybersecurity practices when working remotely. This will be critical for your intern to know especially if they are working on a lab-provided laptop.

While we aren't sitting at our desks on campus or at the lab, we should all be applying OPSEC and cybersecurity practices to protect the information that we're working with. Protecting work-related information that might be Official Use Only (OUO), Controlled Unclassified Information (CUI), or Proprietary Information (PI) should be a top priority, no matter where you're working. Clarify with your intern what they can share about their work with others and in what context. With so many staff teleworking as well as our interns, we all face new challenges to working productively and securely.

Shared workspaces can be a challenge; if you or your intern are at home with family members or roommates who are also working/schooling from home, **make sure to protect sensitive OUO, CUI, or PI information. Use screen blockers to prevent someone from reading over your shoulder; lock your screen when you need to step away from your keyboard; and do not leave documents on your desk.**

Social media is a nice tool to feel connected in this disconnected time, but we should still be mindful of what we are sharing. **When sharing pictures of your workspace, make sure that there are not any documents open on your computer or on your desk that can be read by someone looking at the picture.** Emphasize the importance of blurring background if in a shared space. Once it is uploaded onto a social media platform it becomes much more difficult to control who sees it and what information they can glean from it.

Even on lab specific platforms that require a lab email address, good OPSEC dictates that we **limit sharing work-related information to those with a need to know**. Just because laboratory staff participate and post on a lab-specific platform does not mean that the platform shares all the same protections of the lab network. Even if something is appropriate to share when working behind the lab firewall, think about whether you or your intern should post it beyond the lab's IT protections.

In this strange time, it can be easy to fall into a "relaxed" mindset with sweatpants and slippers replacing the usual dress code. That makes being mindful of good OPSEC practices even more important to protect our business sensitive information. While our work set-ups can be casual, our attention to OPSEC needs to remain business as usual!

Lab Websites and Links

Resources:

Function	Contact Name	Contact Email	Website
IT Support			
Payroll			
Training			
WD/E			
WARS			

Other Helpful Links:

Site ***Description*** ***Link***

-
-
-
-
-

Mentor – Intern Agreement

This form provides a framework for a conversation around remote research experience expectations between you, the research mentor, and your intern. By collaboratively developing shared expectations, both you and the intern can increase your sense of ownership of and commitment to the research expectations, resulting in a better research experience and mentoring relationship.

If desired, you and your intern can first independently consider personal expectations for the research experience by using the "Mentor Research Expectations," "Mentor-Mentee Expectations," or "Undergraduate Research Trainee Expectations" provided in Appendix B in the Remote Mentoring Guide.

Please note – this form and any associated documents are only intended as guides! You are encouraged to add any additional expectations and remove any that do not apply in your specific context.

Intern: _____ Mentor: _____

This agreement outlines the parameters of our work together on this research project.

1. Our major goals are:
    a. proposed research project goals –

    b. intern's personal and/or professional goals –

    c. mentor's personal and/or professional goals –

2. Our shared vision of success in this research project is:

3. The intern will work at least **XX** hours per week on the project, with core work hours between **XX a.m. (time zone)** and **XX p.m. (time zone)**.

4. On a daily basis, our primary means of communication will be through **(text, phone calls, Slack, etc.)**.

5. We will meet one-on-one via **(phone, Zoom, Microsoft Teams, etc.)** to discuss our progress, the project goals, and to evaluate the intern's performance at least once **(or other number of times)** per week.
    a. It will be the **(intern's/mentor's)** responsibility to schedule these meetings.

    b. In preparation for these meetings, the intern will -

    c. In preparation for these meetings, the mentor will –

6. When learning new techniques and procedures, the mentor will train the intern using the following procedure(s): **(e.g. write out directions, verbal instructions, videos, remote demonstration via screenshare or other method, etc.)**

7. The proper procedure for documenting research results in our research group is: **(be sure to include platform, format, frequency, and content)**

8. If the intern gets stuck while working on the project (e.g. has questions or needs help with a technique or data analysis) the procedure to follow will be:

9. The standard operating procedures for working in our research group, which all group members must follow, and the intern agrees to follow, include: **(e.g. required institutional training, attend weekly online lab meetings, etc.)**

10. The mentor and intern have discussed the methodology used in the lab in detail and the intern understands what is expected of them. To become part of the lab team the intern must complete the following safety procedures and/or ethics training(s):

11. The mentor agrees to read and revise the intern's research writing according to the following procedure:

12. Other issues not addressed above that are important to our work together:

By signing below, we agree to these goals, expectations, and working parameters for this research project.

Intern's Signature: _____ Date: _____

Mentor's Signature: _____ Date: _____

Guidance on Remote Communication for Mentors

All internships, but especially remote internships, benefit from a strong communication plan. Below are some key features to consider.

Regular contact

- Daily instant messages
- Weekly summary reports
- Weekly phone/video call
- Biweekly group/team meetings

Consistent methods

- Facility-approved instant messenger – Lync, Slack, etc.
- Facility-based secure e-mail
- Phone calls
- Text messages
- Facility-approved video conferencing – Lync, Microsoft Teams, GoToMeeting, Zoom, etc.
- Office hours – mentor available at specific time each week for drop-in questions

Clear scheduling & availability

- Weekly meeting at same time each week
- Shared calendar for one-off or impromptu meetings
- Shared calendar or task list for tracking daily tasks and deliverables
- Consider time zones: 9 a.m. ET = 6 a.m. PT; 4 p.m. PT = 7 p.m. ET
  - May affect expected hours of participation
  - May affect availability for meetings

Clear expectations

- Discuss expectations with your intern in a meeting early on
- Give your intern a chance to describe their expectations for the internship

Consider the "what-ifs"

- What if the mentor is unavailable for a week? Who will support the intern in their research? Providing contact information and schedule/availability for a secondary contact up front can prevent issues later on.
- What if the participant has class or another responsibility during a regular meeting time? Are they responsible for following up each week/month? Could the meeting be rescheduled?

If there's a problem or potential problem, contact your Workforce Development/Education staff as soon as possible.

- Not meeting expectations or not responsive to feedback and guidance
- Unresponsive to email or phone calls
- Any concerns about health or safety

Teleworking Etiquette

As part of working remotely, you, as the mentor, will need to set up video meetings using varying platforms such as Skype/Microsoft Teams/Zoom, etc. Since staff across all labs are experiencing an unprecedented shift to teleworking, these tips have been compiled to help make your remote experience as productive as possible.

Set up and test your technology. Take time in advance of the meeting to make sure your platform works and settings are correct. Use a headset to improve your audio quality. Remove the Post-It note from your webcam and turn it on. Encourage others to do the same so you can have face-to-face interaction. For larger and more complicated meetings, enlist a colleague and do a dry run to test your slides and equipment.

- **PRO TIP:** Contact your IT department or Help Desk for help in getting the right technology and peripherals to work remotely. They stock computers, webcams, headsets, you name it!

Start the meeting with an orientation and expectations. If you are using an online platform that people aren't familiar with, take a few minutes at the start of the meeting to orient them to the features and how they will be used. Ask people to test their microphones and webcams and type in the chat window. Set ground rules for the meeting.

- **PRO TIP:** A simple "can you hear me now" is a great way to test your audio and allows others to test theirs also.

If it is a large meeting, identify a moderator who can watch the chat window and makes sure online participants have an opportunity to contribute. Sharing thoughts can be tough online if there isn't some "dead air" time. For large numbers of participants, you might set the expectation that everyone types a question in the chat window or virtually raises their hand before unmuting their microphone to share in the large group.

Because your intern might be uncomfortable with asking a question, reach out to your intern to ask their thoughts so they can actively participate in the meeting. Do NOT assign your intern to take notes or be the moderator; they need to participate as a team member.

- **PRO TIP:** Work with your moderator prior to the meeting and let them know when you will be asking for virtual input—if you forget, they can help by doing it for you.

Focus on the meeting. It's easy to get distracted when you're in an online meeting.

- **PRO TIP:** Consider closing other applications like Outlook to help you actively participate.

Create deliberate moments for everyone to participate. A lot of virtual meetings end up becoming a one-way flow of information during which participants check out or work on other things. To keep people engaged, ask questions and solicit their thoughts. During discussion of a new initiative, you might ask everyone to type their top concern in the chat window. Responses like these can be easily captured and sent out to the group after the meeting.

- **PRO TIP:** Have a moderator help you with this!

Be aware of background noises that can distract participants (e.g. opening a bag of chips can make it hard for anyone to hear what is going on). Don't have side-bar conversations.

It's hard to predict when you'll need to add someone remotely, so scheduling all meetings as online/virtual will be helpful.

Hearing an echo? Echoes can be an annoying issue on virtual meeting platforms like Skype/Teams/Zoom and others. They are caused when an attendee has two open microphones – most commonly caused by clicking the meeting link on your computer (activating your computer's microphone), and then simultaneously dialing into the meeting from a phone (opening a second microphone).

- **PRO-TIP:** If you are in a meeting with an echo, the attendee who can't hear the echo is the echo's source.

Need more suggestions? Below are more personal insights and suggestions from an experienced, remote worker.

Jump on early

- The earlier you connect to a meeting, the sooner you can get any technical difficulties out of the way. This goes for presenters and attendees too.
- Do a check when you connect – make sure others can hear you and you can hear them. It can be as simple as saying "Hello". If it is not working, try reconnecting (sometimes it takes a few tries) or varying your setup.
- Engage in small talk, too - as people join, they can quickly confirm that they're hearing audio. This is also a good time to make up for lost hallway conversations.

Start your video

- It is best to turn your camera on when meeting remotely, however, video costs bandwidth -- if your connection doesn't have enough, inform your intern or others before you disconnect your camera. Slow, jumpy video can be distracting, or can impact audio (which is worse).
- If video bandwidth is impacting the audio, consider running the audio through your phone (separate network) and video through your computer.
- If you do start your camera, make sure you are looking at the camera (usually at the top) -- it helps to position your video/participant window to the part of the screen nearest the camera.
- If you can't use a camera, having a profile picture helps (especially for new people or to see the speaker).

To mute or not to mute?

- Develop a good habit of staying on top of the mute button. Muting often is better to reduce background noise and bandwidth.
- Background noises (e.g., dogs barking, kids talking, lawnmower, sirens) can be a distraction when working from home, so be conscious of when you need to mute.
- Be aware that some microphones can pick up noises in different or strange ways – your typing or mouse movements may be louder to everyone else than you, and background noises might be louder than you think.

Be accommodating

- Introduce yourself when you make a statement if not everyone knows your voice. Again, having a profile picture makes it easier for people to see on the screen who is talking.
- Some people can't see the chat (e.g., they're only connected by phone), so try to address comments verbally or read them aloud if you know someone in the meeting can't see them.
- Some people can't hear audio (often people connect without audio if they are still listening in on another call), so you may need to use the chat feature.
- Some people can't see the screen or have a bad connection, so explain what you're showing/pointing at, and go slowly. Verify that people are following along.
- Send out agenda, presentation, or materials for those who can't fully participate via Skype/Teams/Zoom.
- Send out notes or record the session (if others are comfortable/aware) for those who can't be there or are missing audio/video. Task a participant with taking notes if you are the lead or driver.

Feedback

- Some people don't realize how they come across on a call, so privately message them (during or after the call) to let them know of technical issues (e.g., noisy microphone, background noise, loud keyboard typing). Helping someone fix their setup benefits everyone and reduces distractions in future calls.

- If you can't hear someone very well, say something. Don't be afraid of being rude – others might be experiencing that problem, too, and it's much better to have a quick interruption to fix the problem. The speaker might be able to position the microphone closer or make other adjustments. What people have to say is valuable, and it wastes time and opportunity if they aren't heard.
- If you can't see something very well, say something. The presenter may need to slow down to let screensharing catch up or need to adjust the video position/lighting.
- If you need to step away from the keyboard but don't want to interrupt the speaker, try noting it in the chat window (e.g., brb), then note when you're back.
- Ask for feedback so we can build our productivity as a whole.

General tips for working remotely

- Practice good OPSEC.
- Consider the safety of your environment (ergonomics) and wisely choose equipment (noise-canceling headphones, healthy lighting, a good chair/desk setup, even a sit-stand workstation or laptop keyboard/stand accessory may be worth it – some of these may be personal investments).
- Clearly communicate when you will be available (or unavailable) and plan up front. Line management, project management, and team members with whom you work closely should be aware. Update your Skype/Teams/Zoom status, block your calendar, and/or send emails.
- Have a backup plan – what will you do if equipment fails, a network connection drops, or distractions are unavoidable? Can you still get email on a personal device? Can you phone in if Skype/Teams/Zoom isn't working? Do you have backups of files you need? There are ways you can have your files available when offline, which may help.
- Since everyone is working remotely for extended periods of time, check in with your line/project manager (be proactive) and do periodic self-checks. Make sure that you are also helping your intern to deal with working remotely. Ask them, how well are you managing your time/distractions? Do you need any additional resources from me? How is your morale? What could you do better/differently to help work/life balance?
- Make sure that your group Admin or business support is connected with your interns and available to provide assistance.
- Set good boundaries and be intentional. Most of us work best when we have a dedicated space for work, can close off distractions, and can punch in and out of a virtual clock.
- Dress professionally from the waist up. This helps us get in the professional mindset. Flexibility of working from home can be great, and for some essential, but it's up to each of us to be good examples and make it work for us, our colleagues, and the lab.

Remote Research Experience Standards

Department of Energy Workforce Development for Teachers and Scientists (DOE WDTS) accepted standards for a high-quality research experience with modifications for remote mentoring.

STANDARD	REMOTE MENTORING INCLUSION METHODS
Has a well-defined research task which is integral to, or a spin-off of, the mentor's ongoing research	Provide background readings from your research and help intern develop work plan for the assigned research task(s).
Has been designed for success with respect to student/faculty skills and capabilities	Use this guide and other tools/training to help you and your intern(s) be successful with remote research experience; Structure research task(s) for a remote experience.
Includes elements of the research process, such as: designing experiments; creating mathematical models; collecting, analyzing and synthesizing data; keeping a research journal; communicating results	Include most of the elements of the research process in the intern's experience and discuss the other elements with your intern; take advantage of opportunities to use technology for some elements (e.g. use of an electronic research journal)
Incorporates the research process, with uncertainties, false starts, and loose ends	Acknowledge and discuss uncertainties, false starts and loose ends that are part of the research process as they occur.
Involves technologies new to the student/faculty	Take advantage of opportunities to include technologies that may be new to both you and your intern.
Involves an understanding of the broader context and scientific literature of the research project	Include intern in team and one-to-one discussions about the broader context and scientific literature of the research project.
Involves presentation of results for peer review (scientists and other students/faculty)	Have your intern present results via remote technologies for review by project team and other interns.
Makes the students/faculty part of the research team, modeling the interdependence of team members	Include your intern in meetings with other members of the research team to inform the intern's project or knowledge base. Engage various members of the research team in regular remote interactions with the intern to help inform, advise and build community.
Provides opportunities for developing and updating their own research knowledge and laboratory skills	Use remote technologies to develop and update your own research knowledge and technical skills via virtual interactions and simulations.
Students/faculty experience being at a national lab so they start thinking of themselves as scientists and part of a research team	Encourage your intern to participate in lab provided enhancement activities that explore the variety of research across national laboratories and help your intern understand how collaboration enables innovative research at national laboratories.
Other considerations:	
Equity of access to underrepresented minorities and women	Share/provide resources and equipment to enable participation of all populations with a particular focus on enabling participation of URMs and women.
Frequent monitoring of program progress	Work with WD/E team to regularly monitor and respond to your needs and the needs of your intern.
Supportive learning environments	Use regular, frequent remote communication to support your intern during the learning process.
State-of-art facilities, equipment & instruments	As appropriate, seek and employ opportunities for your intern to remotely access state-of-the-art equipment and instruments.
Robust evaluation program focused on continuous improvement	Assess, evaluate and appropriately respond to your intern's progress and needs at 2, 5 and 8 weeks.

Meeting Check-in Guide

The following is a guide to help direct your meetings or check-ins with your intern. Feel free to modify as needed.

Intern: _____ Mentor: _____

Date: _____

Check-in:
Personal or professional updates, successes to celebrate, or challenges you have encountered.

Specific goals or topics for this meeting:

Time sensitive issues and upcoming deadlines

Ongoing or new projects (goal, measure of success, steps, resources & skills needed, timeline)

Career guidance (CV, networking, etc.)

Follow-up actions and expectations: (include time frame)
Intern:

Mentor:

Warning Signs

Mentoring an intern can be a very rewarding experience. However, being a good mentor is *not* just a matter of winding up the intern and watching them go. Quality mentoring requires a substantial time commitment and the willingness and ability to take a leadership role.

Below are warning signs adapted from The Google Summer of Code Mentor Guide which provides great ideas for mentoring an intern remotely (https://google.github.io/gsocguides/mentor/).

Mentors are best able to identify the warning signs and "red flags". Responding to these signs is key to addressing potential problems before they go too far.

Not enough hours in the day: If your intern has problems setting and following a specified time schedule, this may be a red flag that they need help with time management, they have over committed themselves (another job, classes, family commitments), or that they have other issues that need attention.

Missing intern: Missing a predefined meeting is a warning sign that your intern might not be taking the internship seriously and this should be remedied as early as possible. If your intern was in such a deep train of thought working on the project that they forgot the meeting, but afterwards you held an alternate meeting and they did complete the tasks, that might be acceptable. A single meeting that was overlooked is likely not an issue, particularly if they notice and contact you about it, but be alert if it happens repeatedly or if the intern seems unaware of the missed meeting.

"My village was invaded by aliens": What is a valid excuse? Interns have been known to come up with outlandish excuses as to why they are not meeting their milestones. *(You did agree on milestones beforehand, right?)* If you think that your intern is not being honest with you, that is a warning that things might be going sour. Make sure to remind them that real life sometimes gets in the way and assure them that they can redouble their efforts next week to get back on track. This is always better than "my village was invaded by aliens."

Bad interns happen to good mentors: One thing to keep in mind: *Sometimes bad interns happen to good mentors.* Don't take it personally. If a mentor tries their hardest and their intern fails, this does not reflect badly on the mentor.

"*Actions Speak Louder Than Words*" - Below are some specific scenarios to watch.

The disappearing intern: An intern is enthusiastic about discussing the project and getting started. You rank them high, they get accepted, and then they drop off the face of the earth. How do you reconnect with your intern? This is the time to coordinate with your Lab's Workforce Development/Education (WD/E) staff to discuss the next steps.

Underperformance: Your intern enthusiastically participates in the professional development and community outreach activities but when it comes time to completing a task, they seriously underperform. They offer excuses when pressed and offer parts of a task here and there. They continue not to meet the agreed upon requirements. Is there a communication problem about what is required/expected? Does your intern not have the skills necessary to complete the project? Do you need to renegotiate the project? The sooner you can reconnect with your intern the better.

Wrong Priorities: Your intern is completing their assigned tasks but has been offered the opportunity by their university to present their research at a 3-day conference. You agree to this because you think it will be a great experience for your intern to develop their presentation skills. After they return, the quality or quantity of work is seriously affected. You discuss this with them immediately and they promise to reprioritize, but the work is not produced. You need to review your project agreement and try to get them back on track.

Depending on your personality type, some of these might seem harsh. You might also shoulder some of the blame because you think that if you had been a better mentor, more on top of the situation, it would have been avoided. But even if you are partly to blame, so is the intern. And it is up to the intern to perform when expectations are communicated and agreed upon.

Delivering Feedback

Whether mentoring in-person or remotely, effective feedback should be delivered to your intern throughout the project. Feedback should be provided about their communication, progress, and documentation.

Deliver timely feedback: Don't wait until several issues have come up, or until your intern has impressed you multiple times with their efficiency. Let them know right away what you think.

Make a point to give positive feedback: When your intern completes a task on time, and especially when they exceed your expectations, let them know! Early praise is a far better motivator than late criticism.

Do not avoid critique – but be sure commentary is useful and constructive: Try to put yourself in your intern's shoes and consider how you might want to receive constructive criticism. Make sure to phrase suggestions positively. If your criticism is somewhat personal in nature (i.e. tone of an email, timeliness or other non-work issues), deliver it in private rather than in a public forum. When videoconferencing, ensure others are not around. When in doubt about how to deliver constructive criticism, ask for advice from more experienced mentors or from your organization's administrator.

Consider the situation when deadlines are missed, or the project is not progressing as planned: Don't be overly critical of date slippage. It happens. Fanatical adherence to dates does not lead to successful project completion, nor does it make your intern feel excited to contribute to your research long-term. Be sure to discuss any critical milestones during initial correspondence and review them periodically to ensure your intern stays on track.

DOE WDTS Deliverables Guidance

1. Ensure any remaining project/program deliverables are met (Table X1), and that posters and presentations acknowledge WDTS support (Figure X1).
2. Ensure you and your intern have submitted the WDTS Mentor and Intern surveys, available online through WARS.
3. Coordinate with Workforce Development/Education staff to ensure completion of any *lab-specific* mentor and intern surveys. Generally, exit mentor surveys focus on interaction with students, caliber of students, interest in mentoring again, etc.
4. Verify all data, research materials, electronic lab journal, reports, and records your intern created or worked on are transferred to you or your team's document sharing platform.
5. Mentors can coordinate with Workforce Development/Education staff to have interns use the same document sharing platform for transferring notes and daily entries/logs as they used to monitor intern engagement, contact information, and research status.
6. All WDTS deliverables must be uploaded to WARS on or before the last day of the internship (Table X1). The mentor is responsible for the final technical review and approval of the research paper, poster, and presentation.
7. Research paper, poster, and presentation guidelines (hyperlink):
    a. SULI
    b. CCI
    c. VFP faculty
    d. VFP student

Table X1. SULI, CCI, and VFP student deliverables.

Deliverable	SULI	CCI	VFP student	Upload to WARS
Pre-survey	X	X	X	
Post-survey	X	X	X	
Research or project report (CCI) paper	X	X	X	X
Poster or PPT presentation	X	X	X	X
Peer review of presentation	X		X	X
General audience abstract	X		X	X

Figure X1. Language to acknowledge WDTS support for SULI, CCI, VFP, and SCGSR-funded projects.

Paper & Poster must have **Acknowledgements**

To help maintain accountability and accuracy of its federally-mandated assessment and reporting functions, WDTS requires funded work to appropriately acknowledge its support in the presentations and publications resulting from its funding. When acknowledging WDTS support, please use the following statement

"*This work was supported in part by the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists (WDTS) under the Science Undergraduate Laboratory Internships (SULI) program.*"

"This work was supported in part by the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists (WDTS) under the Community College Internships (CCI) program."

"This work was supported in part by the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists (WDTS) under the Visiting Faculty Program (VFP)."

"This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Workforce Development for Teachers and Scientists, Office of Science Graduate Student Research (SCGSR) program. The SCGSR program is administered by the Oak Ridge Institute for Science and Education for the DOE under contract number DE-AC05-06OR23100."

Exit Checklist

Use this resource to help your summer intern continue and exit successfully from a remote internship.

Intern Name	Start Date	Primary Work Location	Group Leader	Peer Mentor	Team Leader

First Month: Steps to be completed within the first month:

- ☐ Continue to check in weekly with new intern.
- ☐ Establish bi-weekly or quarterly meetings to discuss challenges, impressions, and integration progress.
- ☐ Provide new intern with key resources and encourage them to reach out virtually via video to broaden their network.
- ☐ Discuss future assignments and key department initiatives.
- ☐ Review performance evaluation process and review goals with intern
- ☐ Other: _____

Beyond First Month: Steps to be completed throughout a new intern's journey:

- ☐ Continue to clarify roles, responsibilities, and expectations.
- ☐ Discuss continued education opportunities and training needs.
- ☐ Provide feedback regarding intern's job performance and recognition for accomplishments.
- ☐ Share best practices to collaborate with others.
- ☐ Assign a *mentor(s).* (see definition section for details)
- ☐ Continue socialization and encourage new intern to become involved with Laboratory-sponsored events/committees.
- ☐ Suggest additional training opportunities (e.g., books, project reports, publications in peer-reviewed journals, virtual conferences, presentations, proposals, involvement in press releases)
- ☐ Keep notes on discussions, outlining topics as discussed. Your notes can serve as reminders of important topics to revisit.
- ☐ Other: _____

Before End Date: Steps to be completed prior to exit:

- ☐ Mentor and manager complete and approve performance review of intern.
- ☐ Mentor & manager meet with intern and provide performance review feedback and rating.
- ☐ Mentor completes end of internship mentor survey
- ☐ Ensure intern completes end of internship intern survey
- ☐ Ensure all Laboratory equipment has been returned
- ☐ Determine if intern will be (1) continuing/returning (keep on the books) or (2) terminating

Frequently Asked Questions (FAQ)

What if my intern is not able to work 40 hours/week or I do not have enough work to fill 40 hours/week?

If this is the case, a remote internship should not be offered. Please contact your Workforce Development/Education (WD/E) team member if the situation changes mid-internship

What should I do if my intern realizes they cannot complete their remote internship?

Contact your Workforce Development/Education (WD/E) team member as soon as you realize your intern has concerns about finishing their remote internship.

How many times can an intern participate in CCI?

Students can participate twice in the CCI program.

How many times can an intern participate in SULI?

Students can participate twice in the SULI program

What if my intern wants to end the appointment early?

Contact your WD/E team member.

Click or tap here to enter text.

Click or tap here to enter text.

Click or tap here to enter text.

Appendix B – Optional Mentoring Resources

SMART Goals

SMART is an acronym for a framework to help guide goal setting. It is intended to ensure that goals are planned, clear, trackable, and reachable. With SMART goals, you are more likely to achieve the goal efficiently and effectively. Below is an overview of the framework to establish SMART goals.

S = Specific
Be specific in what you want to accomplish. A specific goal has a much greater chance of being accomplished than a general goal. To set a specific goal you must answer the six "W" questions:

- Who: Who is involved?
- What: What do I want to accomplish?
- Where: Where is located (if applicable)?
- When: When will you complete this?
- Which: Which requirements or constraints are involved?
- Why: Why is this important (i.e. specific reasons, purpose or benefits of accomplishing goal)?

M = Measurable
Establish metrics or criteria to determine whether you met your goal. This makes your goal more tangible and provides a means of measuring progress. When progress is measured, you are more likely to stay on track, reach your target dates, and experience the exhilaration of achievement.

To determine if a goal is measurable, ask questions such as……*How much? How many? How will I know when it is accomplished?*

A = Attainable
Make your goal attainable. Your goal needs to be attainable and realistic to be achievable. When a goal is important to you, you begin to figure out ways to reach it. You develop the attitudes, abilities, or skills and determine the financial capacity or resources to achieve it.

To determine if a goal is attainable, ask questions such as……*Is the goal doable? Do I have the necessary resources? Do I have the necessary skills?*

R = Realistic
Set a realistic goal. A realistic goal must represent an objective toward which you are both *willing* and *able* to work. A goal can be both high and realistic; you are the only one who can decide just how high your goal should be. But be sure that every goal represents substantial progress.

T = Timely
Set a realistic target date to complete your goal. With no time frame tied to your goal, there's no sense of urgency. If you want to complete an analysis of a dataset, when do you want to finish the analysis? Stating "someday" will not work. But if you anchor it within a time frame, "by July 1st", then you've set your unconscious mind into motion to begin working on your goal.

Undergraduate Research Expectations

1. Why do you want to do research?

2. What are your career goals? How can this research experience and the mentor– trainee relationship help you achieve them?

3. What would success in this research experience look like to you?

4. How many hours per week and at what times/days do you expect to work on your research?

5. What, if any, specific technical or communication skills do you expect to learn as part of the research experience?

6. What techniques and skills are required for this research experience and how will you learn them (through a written procedure, verbal instructions, videos, etc.)? What can your mentor do to help you learn the techniques and skills that you need to be successful in your research experience? What can you do to help yourself learn?

7. If you have previous research experience, what skills do you expect to bring to your new research group?

8. How will you document your research results? Is there a specific platform and format your mentor would like you to use? How often does your mentor expect you to report on your research, and what details would they like you to include?

9. If you have questions about your research project, whom will you ask? Should you bring questions to your research mentor first, or to others in the research group? If others, can your mentor identify those in the group who would be good resource people for your project?

10. Will the research that you will be involved in be confidential? Are you allowed to discuss your project with other individuals outside of your laboratory?

11. What role will your mentor play in the development of your skills as a writer? Is your mentor willing to help you with your research-related writing along the way or does he/she only want to read it after it is in its final version? If your mentor only wants to read final versions of your writing, whom should you go to for proofreading?

12. Are you aware of all the safety and ethics training that is required to work in your research project? Discuss the required training with your mentor and establish a deadline by which you should complete it.

Adapted from Branchaw, J. L., Butz, A. R., & Smith A. (2018). *Entering Research* (2nd ed.). New York: Macmillan.

Mentor Expectations for the Remote Research Experience

1. How can having an intern work on this remote research project contribute to your career goals? How can the mentor - intern relationship contribute to your career goals?

2. At the end of the internship term, what does success for this remote research project look like to you?

3. How many hours per week and at what times/days do you expect your intern to work on their research project?

4. What, if any, specific technical or communication skills do you expect your intern to learn as part of their research experience? How do you plan to teach these skills to your intern (through a written procedure, verbal instructions, videos, remote demonstration through screenshare or other method, written or verbal feedback, etc.)?

5. What is your mentoring approach? Once your intern has learned the techniques and procedures used in your lab do you prefer to monitor your intern closely, walking them through all the steps or do you prefer to let your intern work independently?

6. How will your intern document research progress and results? Is there a specific platform and format you would like your intern to use? How often would you like your intern to document their research progress, and what details would you like them to include?

7. To whom should your trainee go if they have questions about your research project? Do you expect them to come to you solely (or first), or should they feel free to ask others in the research group? If others, who would be good resource people for your project?

8. Is your intern's research confidential? Are they allowed to discuss your project with other individuals outside of your laboratory? What are your expectations?

9. What role will you play in the development of your trainee's skills as a writer? Are you willing to help them with research-related writing along the way or do you only want to read it after it is in its final version? Is there someone else in the lab/research team who is available to help your trainee with their writing?

10. Discuss the institutional training that is required for your trainee to work on your research project and establish a deadline by which they should complete it.

11. If a student has previous research experience, is there anything that you need to share about this research group that is unique and that the student should be aware of?

Adapted from Branchaw, J. L., Butz, A. R., & Smith A. (2018). *Entering Research* (2nd ed.). New York: Macmillan.

Mentor-Mentee Expectations

It is a good practice to establish expectations between you and your intern to further foster your mentoring relationship, especially during a remote mentoring experience. Below is a guide that you can reference.

*I expect my **mentor** to:*

1. meet with me at least 2-3 times each week, using video when possible.
2. be open to my questions and to take time to think about them carefully.
3. be patient with me because I am new to research.
4. initially be directive but eventually let me design and do experiments on my own.
5. challenge and encourage me.
6. teach me basic research techniques/procedures and safety protocols.
7. help me define a project that is doable, yet relevant, and that keeps me busy.
8. help me understand the basic scientific concepts and study design underlying my project.
9. understand when I need to take time away from research to focus on my professional development and allow me to take it.
10. help me network with other researchers in the group and/or discipline.
11. be willing to discuss possible career goals and/or future jobs that will utilize the skills being learned during this research opportunity.

*I expect my **intern** to:*

1. be present (video) and punctual when we have scheduled meeting times.
2. work hard and give their best effort.
3. manage their time efficiently and effectively when doing research.
4. keep up with the assigned tasks, but to let me know if they need a break from research.
5. make every effort on their own to understand the research our group does, but to ask questions when they do not understand.
6. listen carefully, take notes, and follow instructions when being taught new techniques.
7. follow all safety procedures and behave ethically.
8. gradually gain independence, but to regularly communicate with me about what they are doing.
9. be able to analyze their experimental data, generate logical conclusions based on that analysis, and propose future experiments, with assistance.
10. work cooperatively, collaboratively, and respectfully with other members of the research team.
11. be attentive and creative and contribute at research group meetings.

FAST Constructive Feedback

The basics of providing constructive feedback remotely are the same as the basics of providing constructive feedback in person. Providing quick, specific, and constructive feedback is essential. A recommended format is "FAST" – Frequent, Accurate, Specific, and Timely feedback. The following details the key elements of the FAST feedback process.

Frequent	Some interns need feedback more often than others – each one has a unique "feedback frequency." Giving interns feedback at their individual rates of need is the first key behavior of the best coaching-style mentors. Identifying and tuning in to each intern's frequency is the corresponding skill of this behavior.
Accurate	Every instance of feedback has an effect on the intern's trust and performance. Giving feedback that is correct, balanced, and appropriate is the second key behavior of effective coaching style mentors. Its corresponding skills include taking the time to reflect and question assumptions, check facts, and rehearse the feedback's delivery.
Specific	Telling people exactly what they do right and wrong is not specific enough – you must also tell people exactly what next steps are necessary to achieve the best results. This is the third key behavior in giving feedback, with setting concrete goals and deadlines, and providing clear guidelines, as the corresponding skills.
Timely	The closer in time feedback follows the performance issue, the more impact the feedback will have on the intern, and the better the chances that any needed improvements will be made. Giving feedback immediately is thus the fourth key behavior of good coaching-style mentors. Effective time management is its corresponding skill.

Source: National Renewable Energy Laboratory Mentor Manual

Research Group Focus

This activity is intended to help new research interns learn about their research group's goals and how their project fits into these goals.

Write one paragraph, *in your own words*, describing the focus of your group's research. Be sure to include the group's major research questions or hypotheses, the types of techniques they use to investigate these questions, and what area(s) of this work are most interesting to you.

Read your paragraph out loud to your research team during your next lab meeting to get feedback on your understanding of your research group's focus.

Research Group Diagram

This activity is intended to help new research interns learn about their research group and how their project fits into the "big picture" of the group's research goals.

1. Ask your mentor to give you an overview of the people in your research group and their roles and responsibilities. Use the table below to document what you learn. Refer to the table on the next page if you are unfamiliar with the typical titles in a lab group.
2. If possible, meet each member of your research group to learn more about them and their research. Update the table below with any additional information you learn.
3. Draw a diagram to identify the people and projects in your research group. The diagram should represent how the projects are connected to one another, how the people are connected to one another, and how the projects and people are connected. The research group's overall area of study should be represented, and ideally encompass all parts of the diagram. Specifically include how you and your project fit in, and with whom in the group you see yourself collaborating.

Personnel in Your Research Group

Title (e.g. professor, grad student)	**Responsibilities and Specific Projects**

Diagram of Your Research Group:

Research Group Personnel

Titles	Degree	Roles & Responsibilities
Professor (Assistant, Associate, Full)	MS or PhD	Faculty member at an academic institution who is the leader of the research group. Typically, is the principal investigator (PI) on grants funding the group's research. Senior mentor to all personnel in the research group. In addition to research, professors also have teaching and service responsibilities.
Principal Investigator (PI)	MS or PhD	The lead person on a grant funded project. Responsible for oversight of all aspects of the project. Often is a professor but may be a senior researcher or scientist who does not have teaching or service responsibilities.
Scientist	PhD	A staff person whose primary responsibility is to do research. Although scientists are usually part of a research group, core research facility, or research institute they are highly independent and often provide leadership within the research group.
Researcher	MS or PhD	A staff person who collaborates with the PI and scientists on the research team to carry out research projects.
Instructor	MS or PhD	A staff person dedicated to teaching lecture and lab/field courses. Instructors may also serve as academic advisors.
Post-doc	PhD	Post-doctoral fellows have earned their PhD and are gaining additional training to prepare for the next step in their career. Post-docs are mentored by the PI but work independently on the research team and may provide mentorship for more novice team members. Post-docs are usually focused on research, but some positions include teaching.
Technician	BS or MS	Technicians can perform a wide variety of tasks depending on their skill set and the needs of the research team. Technicians often are experts on particular techniques and, in addition to helping with research projects, they may supervise students, order supplies, and perform administrative tasks.
Graduate Student	BA, BS, MS	Graduate students have completed a bachelor's degree and are working toward a MS and/or PhD degree. This includes taking courses and doing research. Graduate students are mentored by the PI as they learn research techniques, experimental design, data analysis and publication skills with the goal of becoming an independent researcher. Graduate students will develop their own research question/hypothesis to investigate and must defend their research findings to earn their advanced degree.
Undergraduate Researcher	None	Undergraduate student working with a mentor on a research project either for academic credit or a stipend. Depending on the undergraduate researcher's level of experience, they may help their mentor with a project or work independently on a project of their own.
Lab Assistant	None	Undergraduate student working on the research team, usually paid by the hour, to support the team through maintenance tasks such as washing glassware/dishes, autoclaving, sorting samples, making common lab solutions, etc.

Reading Scientific Articles

Scientific Article Worksheet

This activity is intended to guide new-to-research interns through reading scientific articles.

Article Title:

Authors:

Journal Title:

Year:

The Basics:

1. What hypothesis or research question does the paper address?

2. What experiments were done to test the hypothesis or investigate the research question?

3. What are the major conclusions?

4. What evidence supports each of the conclusions?

The Critique:

1. Do the conclusions seem logical given the data presented? Why or why not?

2. Why are the conclusions important?

3. What were the best aspects of the research presented, and how could it be improved?

Additional Resources:

1. What other information or resources would help you better understand the paper?

Further Questions:

Write *at least* three comments or questions about the article to discuss with your mentor.

1.

2.

3.

Creating a Research Outline & Abstract

This activity is intended to help new research interns to conceptualize and plan their research project and develop a draft abstract to describe their research project.

Research Group's Focus:

Research Project Title:

Introduction/Background: Identify and summarize the key background information needed to understand your research project. Write these pieces of information as a *bulleted list of statements*. Your hypothesis or research question should follow from this information.

Hypothesis or Research Question:

Relevance and Implications of Your Research Project: Why is your research important? What may be the potential implications of your results? Will your project benefit basic research, or lead to advances in the fields of energy, environment, or national security?

Experimental Design and Potential Results: Outline the experiments you will do to test your hypothesis. For each experiment, explain:

1. the technique(s) that will be used and the reason(s) for selecting that technique.
2. the type of data that will be collected and why this type of data will inform the hypothesis.
3. all the potential results and whether each would support, or not support, your hypothesis. Draw what the predicted results will look like, if applicable (e.g., gel, microscope image, data table, or graph).

Timeline: Outline a weekly timeline for your project. Be sure to refer to each of the proposed experiments (or parts of the experiments), allow time for analysis of data, and allow time for the preparation of a presentation of the data (e.g., poster or oral presentation).

Abstract: Synthesize the core information in your outline and write a scientific abstract of 200 words or less.

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