



MODULE: SCIENTIFIC COMMUNITY

OVERVIEW

Learning Objectives

At the conclusion of this module, you will be able to:

- Interpretation: Identify appropriate strategies for interacting with other members of your scientific community as gatherings such as conferences and meetings
- Interpretation: Identify the elements of the peer review process and the benefits of this process to researchers and the larger scientific community
- Interpretation: Describe the nature of research funding, including sources of research sponsorship and the expected outcomes of research
- Application: Prepare a list of questions or other interactions you might be able to use at a conference related to your research area
- Evaluation: Review a research article and evaluate its strengths and weaknesses as well as completeness
- Interpretation: Describe the importance of funding to the research process

Checklist

Prior to meeting with mentor

- Review the elements central to effective participation in the scientific community: Peer Review Process, Interaction within the scientific community at events such as conferences and meetings, The nature of research funding
- At the direction of your mentor, complete one or more of the deliverable assignments associated with the elements of Scientific Community

Discussion with mentor

- Discuss your understanding of the peer review process
- Discuss options available to you for participating as a member of the scientific community either at your own campus or another meeting
- Discuss available types of funding for your area of research, and strategies for securing funding



Mentee Deliverables

1. **Deliverable Option 1: Bring a printed list of questions you might be able to pose to researchers who have presented at past meetings as well as those who may be visiting your campus.**
2. **Deliverable Option 2: Peer Review Assignment**
3. **Deliverable Option 3: Research Funding Assignment**
4. **Deliverable 2: Bring a printed copy of your Five Minute Reflection to the next meeting with your mentor.**

Introduction to Scientific Community

In addition to learning and practicing the skills directly associated with consuming and conducting research, a key element required to realize benefits from research is the effective participation within the scientific community. Successful researchers must be able to communicate with members of their research community in order to disseminate their findings, drive progress, and find new opportunities. Research community functions include the peer review process, by which members of a particular community assist with the critique of their colleagues' research prior to publication or conference presentation. The dissemination, or sharing, of research often takes place at regional meetings and national/international conferences. Becoming an effective participant at such meetings enables researchers to expand their networks, identify new opportunities for collaboration, and share their own work. Of course, before research can be conducted, scientists and engineers often need to secure funding to support the research and researchers involved in a particular project. The materials in this module provide an overview on these elements.

Materials for this Module

- Handout 1: The Peer Review Process
- Video: Peer Review in Three Minutes: <https://www.youtube.com/watch?v=rOCQZ7QnoN0>
- Handout 2: Participation in Scientific Meetings and Conferences
- Handout 3: Presentation on Types of Research Funding

Assignment(s) for this Module

Participation in Scientific Conferences and Meeting: Discuss your area of research with your mentor and identify relevant scientific communities at your school, relevant regional or national conferences, or upcoming events on your own campus. Find online resources for past conferences and find information on research that was presented. Imagine that you were in attendance and formulate ways in which you might have interacted with the researchers who presented.

- Identify a presentation that is directly related to your line of research. Also identify a presentation that is tangential to your research.



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- Formulate some potential questions that you could pose to the presenting researchers. Consider how you might participate as a member of the audience during the Question and Answer portion of the presentation. How might you be able to interact with the researchers in a more formal setting, such as during a networking break at the meeting?
- Identify an upcoming event at your school (i.e., a guest lecturer symposium or presentation). Do some introductory examination of the topic and come up with a plan as to how you might be an active part of the research community during the event.

Deliverable Option 1: Bring a printed list of questions you could pose to researchers who have presented at past meetings as well as those who may be visiting your campus.

Peer Review Process:

- Read a journal article assigned by your mentor, find two strengths of the research described and two weaknesses or gaps. Do you agree with the author's conclusions?
- Using the same journal article, assess the materials and methods and make a list of missing details as well as helpful details.

Deliverable Option 2: Bring a printed list of the two strengths and two weaknesses as well as the list of missing and helpful details.

Identifying Funding Opportunities:

- Identify one source of funding that supports your advisor's work. What type of funding is it (government, industry, philanthropic, state, etc.)?
- Using journal articles that you have found in your research, name one source of government funding, one source of philanthropic funding and one source of industry funding that supports research like yours.

Deliverable Option 3: Bring a printed list of the funding source you identified that supports your advisor's work and the three funding sources that you identified from your reading.



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Five-Minute Reflection

Come up with one question to discuss with your mentor (maybe a concept you are unclear on, something you found interesting, etc.)

What information did you feel was the most informative? Least?

Of the three elements covered in this module relating to Scientific Community, which one are you able to best consider for your own development at this stage in your career as a researcher? Explain.