Instructor: Dr. Nancy Kaufmann (nkaufman@pitt.edu)

Website: University of Pittsburgh Blackboard Course website http://courseweb.pitt.edu

Class Meeting: F 1:00-2:50 PM 202 Langley Hall Office hours: By appointment

Rationale:
This course will introduce undergraduate students to key issues in communication as a researcher in the life sciences. The target audience is students enrolled in the Certificate in Biological and Biomedical Research program, who already have some experience as a research scientist and are interested in research as a career option or students outside of the Certificate interested in research. This course aims to provide this training, including topics such as poster and slide composition, oral presentation to different audiences, application and grant writing, and mentoring.

Course Description:
Research Methods: Communication in Life Sciences Research introduces students to a variety of topics associated with the communication of scientific data, taking advantage of the personal research experiences of students enrolled in the course. Students will read scientific literature throughout the course, complete assignments diverse in nature, discuss how to present data and models, and present short presentations aimed at different audiences.

Course Objectives:
Students completing this course will be competent to read and understand papers in the scientific literature, to write short research proposals and research reports, and to present their research to a variety of audiences.

This course is for one-credit and meets once a week. Students will complete an assignment each week, and the weekly meetings will include group discussions or student presentations. Because students registered for this course will be concurrently engaged in research, they have the advantage of learning about scientific communication in a strongly content-dependent structure. As students are introduced to topics such as notebook keeping, scientific writing, and oral/poster presentation, they will have the opportunities to apply these to their own individual research experiences.

Assignments and grading:
Students completing this course will be competent to read and understand papers in the scientific literature, to write short research proposals and research reports, and to present their research to a variety of audiences.

There are no required textbooks for this course. Reading and viewing assignments will be provided throughout the course.

1. Weekly assignments
   Assignments will be given each week and must be completed prior to the next meeting of the class.

2. Papers/projects
   Students will deliver two short public oral presentations one with slides and one with a poster, aimed at different audiences, write a concise abstract, prepare a 2-page research proposal, and practice other forms of current science communication about their own research. They will also actively engage in peer review.

3. Exams/Grading
   There are no exams. Grading will be determined as such:
## Assignment points:

In class assignments: 100pt  
Abstract: 50pt  
Poster design: 125pt  
Poster presentation: 125pt  
Peer review of abstract, poster, talks, other writing: 150pt  
Annotated bibliography: 50pt  
Mini-grant/application: 100pt  
Slide-making and design: 100pt  
Practice and final talk: 100pt  
Comments and suggestions in/out class participation: 50pt  
Asking science questions in/out class participation: 50pt

Students are expected to attend all class meetings and unexcused absences results in loss of Class participation points.

4. Approximate time spent outside of class  
Average of 2 hours each week. expected

## Class Schedule

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<tr>
<th>Date</th>
<th>In class plan</th>
<th>Assignments and additional items</th>
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| 1 Jan 9| Spin the bottle interviews  
Speed dating science  
Tweet your research: 140 characters or less | Due: Sign up for final talks at [http://doodle.com/pq3c3s64xy5cemmt](http://doodle.com/pq3c3s64xy5cemmt)  
Optional: 3:30pm summer fellowship research panel |
| 2 Jan 16 MLK | Optional meeting: review and workshop of summer applications.  
*Online* peer review of abstracts  
Response to reviewer | Due: 1. Meet with NK this week  
2. Submission of abstract draft  
3. Peer review of 2 abstracts by Jan 20  
Optional: Thursday Jan 15 4pm, Recommendation workshop |
| 3 Jan 23| Finalizing abstracts  
Drafting and editing posters  
-figures  
-text  
-layout | Due: 1. Response to peer review and abstract update.  
2. Use PubMed to list 8 papers in your field to read this term.  
3. Bring old poster to class (if you have one).  
4. Final Abstracts submitted Jan 26 [rescert@pitt.edu](mailto:rescert@pitt.edu)  
Resume/CV workshop 3:30 pm Langley 219B |
| 4 Jan 30| Practice poster presentation  
-for an expert  
-for a freshman | Due: 1. Read “poster design advice”  
2. Make and print final poster  
4:00-5:30pm Langley 219B poster session |
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<tr>
<th>Week</th>
<th>Date</th>
<th>Task</th>
<th>Due</th>
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<tbody>
<tr>
<td>5</td>
<td>Feb 6</td>
<td>Poster analysis and editing&lt;br&gt;What’s the hook? Sketch your research movie poster</td>
<td>1. Interview your PI: feedback on poster, their research and their career or Email with a collaborator&lt;br&gt;2. Annotated (short) bibliography on 2 papers</td>
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<td>Interview communication 1: preparing for an interview for...</td>
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<td>6</td>
<td>Feb 13</td>
<td>Interview communication 2: mock interviews for...</td>
<td>1. Interview a faculty member who may write you a recommendation letter&lt;br&gt;2. Annotated (short) bibliography on 2 papers</td>
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<td>7</td>
<td>Feb 20</td>
<td>Mini grants and applications&lt;br&gt;Watch NIH mock peer review session</td>
<td>1. Find a national or regional meeting in your field.&lt;br&gt;2. Write the travel award or other 2-page grant application research statement.</td>
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<td>8</td>
<td>Feb 27</td>
<td>Pecha Kucha talks. Slides advance every 20 seconds.&lt;br&gt;Writing titles</td>
<td>1. 6 slides NO WORDS printed out and submitted electronically. Set to advance on auto.&lt;br&gt;2. Annotated (short) bibliography on 2 papers</td>
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<td>9</td>
<td>Mar 6</td>
<td>Online submission of research/personal statement for an application and peer review</td>
<td>Due: Online submission of research/personal statement for an application and peer review</td>
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<td>10</td>
<td>Mar 13</td>
<td>SPRING BREAK NO CLASS</td>
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<td>11</td>
<td>Mar 20</td>
<td>Slide design: data figures and models</td>
<td>1. Find a paper with a data figure similar to yours and compare your figure to it.&lt;br&gt;2. Do the same for a model figure. 3. Improve your figures</td>
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<td>12</td>
<td>Mar 27</td>
<td>Mastering the 12-min talk for three audiences&lt;br&gt;Practice talk I</td>
<td>1. Finish slides. Bring laptop (if have) with slides.&lt;br&gt;2. Annotated (short) bibliography on 2 papers</td>
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<td>13</td>
<td>Apr 3</td>
<td>Practice talk II</td>
<td>Due: Practice your talk for your lab. Record feedback and questions.</td>
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<td>14</td>
<td>Apr 10</td>
<td>Final Talks, peer feedback, and question writing</td>
<td>Due: Practice your talk for non-science friends and family. Record feedback and questions.</td>
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<tr>
<td>15</td>
<td>Apr 16,17</td>
<td>Final Talks, peer feedback, and question writing</td>
<td>Due: Practice your talk for science friends and family outside your lab. Record feedback and questions.</td>
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Extra Credit Optional Assignments (can only supplement but not replace above assignments):
- Critique up to two biology research seminar talks (job talk list below, but many others available)
- Attend and critique one of the workshops listed
- Present at the Honors College Poster Fair
- Design an activity for school children to understand-and maybe even do- your research/ present activity
- Judge a science fair
- Design a museum exhibit to help students understand your work
- Present at a regional or national meeting
- Write an NIH style biosketch
- Other ideas?
Disabilities

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (TTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

Important Policies

Late work: work turned in late is docked 10% on the first day and 5% for each day after. All assignments must be completed.

Cell Phone, tablets, laptop and other electronics: All cell phones and other electronics should be off during class and may not be used during class unless it is part of a class activity. Off-topic use during class is distracting and disrespectful to Instructors and Peers and is not acceptable.

Academic Integrity Policy: (University of Pittsburgh Policies, revised 3/31/2010)
“Cheating and plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, noted below, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz, exam or assignment will be imposed.”

“Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of Turnitin.com page service is subject to the Usage Policy and Privacy Pledge posted on the Turnitin.com site.”,

“The integrity of the academic process requires fair and impartial evaluation on the part of faculty and honest academic conduct on the part of students. To this end, students are expected to conduct themselves at a high level of responsibility in the fulfillment of the course of their study. It is the corresponding responsibility of faculty to make clear to students those standards by which students will be evaluated, and the resources permissible for use by students during the course of their study and evaluation. The educational process is perceived as a joint faculty-student enterprise which will perforce involve professional judgment by faculty and may involve – without penalty- reasoned exception by students to the data or views offered by faculty.” Senate Committee on Tenure and Academic Freedom, February 1974.

E-mail Communication Policy: (University of Pittsburgh Policy, revised 3/31/2010)
Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page. Be sure to log out of your account when you have finished. (For the full E-mail Communication Policy, go to www.bc.pitt.edu/policies/policy/09/09-10-01.html.)