Overview and Objectives:
Medical educators and researchers must be able to present their work clearly and effectively in oral and written forms. However, important educational material and research data are sometimes poorly communicated or even obscured by poorly delivered presentations or ineffectively written abstracts, manuscripts, slides, and posters. The main objective of this course is to help students develop excellent medical writing and presentation skills. This objective will be achieved through a combination of didactic sessions, readings, class exercises, homework assignments, and a final project. In these activities, students will practice specific writing, critiquing, and presentation skills.

Responsibilities:
- There will be reading assignments in the textbook in addition to selected articles and handouts distributed during class. The readings of book chapters assigned in the syllabus are expected to be completed before class.
- Students will have four homework assignments (in addition to preparing a final oral presentation). Homework assignments should be submitted to the following class instructors via e-mail: Conroy, Kraemer, and Zickmund. They should also be posted on Blackboard.
- Homework assignments are due to these instructors no later than 5:00 PM on the Wednesday before the session in which the assignment is discussed. Students will receive a 10% (1 grade) deduction per day on the points awarded by the instructor for an assignment received late and will receive 0 points for an assignment received after the day on which it is discussed in class.
- A student who anticipates problems concerning an upcoming deadline should consult with a course coordinator (Zickmund) to determine whether alternative arrangements are possible. All assignments must be completed to receive credit and a final grade for the course.
- Students will have a final project to be presented during the last session of the class. For this project, students will develop a 10-minute oral scientific presentation based on background materials provided in class or on their own original data.
- Class attendance and participation are required.

Course Requirements:
The letter grade will be based on:

- Class participation 15%
- Abstract preparation 15%
- Table and figure preparation 15%
- Article critique 15%
- Response letter to the editor 15%
- Final project 25%

A grade of “Incomplete” will be given if one or more of these assignments are not completed.
Attendance Policy:

- Students are expected to sign in when they arrive for each class (use the computer provided in the suite lobby). If a problem is encountered with the computer sign-in system, please contact the course coordinators and Lauren Talotta (talottals@upmc.edu) immediately.

- Students who miss 3 or more of the 2-hour sessions will not receive a passing grade. Missed classes will be deducted from the “class participation” component of the course grade.

Course Grading Scale:

We will use the following grading scale for the computation of the final course grade, as well as for the course assignments.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
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<tbody>
<tr>
<td>A</td>
<td>92–100</td>
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<tr>
<td>A-</td>
<td>90–91</td>
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<tr>
<td>B+</td>
<td>86–89</td>
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<tr>
<td>B</td>
<td>82–85</td>
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<tr>
<td>B-</td>
<td>80–81</td>
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<tr>
<td>C+</td>
<td>76–79</td>
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<tr>
<td>C</td>
<td>70–75</td>
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<tr>
<td>D</td>
<td>60–69</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
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</tbody>
</table>

NOTE: Homework assignments, course information, and announcements will be available at http://courseweb.pitt.edu.


Additional Readings: Will be distributed in class and posted on Course Web. Please remember to shred abstracts and manuscripts at the end of the course.

Supplemental Textbooks: None.

Additional References and Web Site Resources:


3. BMJ. Checklists for editors, reviewers, statisticians, and others. [http://resources.bmj.com/bmj/authors/checklists-forms](http://resources.bmj.com/bmj/authors/checklists-forms). Accessed August 18, 2011.


10. Drubin DG. Any jackass can trash a manuscript, but it takes good scholarship to create one (how MBoC promotes civil and constructive peer review). *Mol Biol Cell*. 2011;22:525-7. **PMID: 21357757**


17. Mulford Health Science Library. Instructions to authors in the health sciences. [http://mulford.meduohio.edu/instr/](http://mulford.meduohio.edu/instr/). Accessed August 18, 2011. Provides direct links to the following: (1) instructions to authors for over 6,000 journals in the health and life sciences; (2) Uniform Requirements for Manuscripts Submitted to Biomedical Publications (also called the Vancouver style requirements); (3) ASSERT statement and checklist (ASSERT = a standard for the scientific and ethical review of trials); (4) CONSORT statement, checklist, and flowsheet (CONSORT = consolidated standards of reporting trials); (5) COPE guidelines (COPE = Committee on Publication Ethics); and (6) MOOSE consensus statement (MOOSE = meta-analysis of observational studies in epidemiology).

18. Pierson DJ. How to write an abstract that will be accepted for presentation at a national meeting. *Respir Care*. 2004;49:1206-12. **PMID: 15447804**


**Academic Integrity:**

Students in this course will be expected to comply with the University of Pittsburgh’s Policy on Academic Integrity ([http://www.provost.pitt.edu/info/ai1.html](http://www.provost.pitt.edu/info/ai1.html)). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.
## Course Schedule

| Session 1: Course Intro/Why Is Effective Communication Important? | Preparation of Scientific Abstracts |

### At the conclusion of this lecture, the student will be able to:

1. Understand course mechanics and expectations.
2. Describe how errors in medical writing and presentations inhibit effective communication.
3. Write a structured abstract that is clear and focused.
4. Effectively critique abstracts and distinguish “good” from “bad” abstracts.

### Topics:

1. The session will begin with a brief discussion of the expectations for this course in terms of attendance, participation, completion of assignments, and grading. The instructors will describe the goals for the class and solicit the students’ educational goals for the course.

2. The first hour of Session 1 will address the importance of excellent written and oral communication skills in biomedical education and research. Real-life examples will be given to illustrate how poor writing and presentations can obscure otherwise excellent information and lead to confusion on the part of readers and listeners.

3. The second hour of Session 1 will focus on the preparation of scientific abstracts. General rules for writing an effective structured abstract will be covered. General guidelines for submitting abstracts for presentation at national scientific meetings will be presented. The instructors will identify examples of well-written and poorly written abstracts from national scientific meetings and will distribute abstract scoring criteria from several national medical organizations. Students will break into small groups to critique several abstracts.

### Required Readings before Session 1:

Lang, Chapters 1, 2, 3, and 5.

### Graded Homework Assignment #1:

Students will write a scientific abstract for a manuscript provided to them by the instructors. The abstract text should **not exceed 400 words** and should be structured in a format with the following headings: background, methods, results, and conclusion. Completed assignments should be e-mailed to the appropriate section instructors (Conroy, Kraemer, and Zickmund) and posted on Blackboard.
At the conclusion of this lecture, the student will be able to:

1. Organize and plan a poster to appropriately communicate scientific or curricular data.
2. Critique posters and distinguish “good” from “bad” posters.
3. Prepare an effective 10-minute oral abstract presentation.

Topics:

1. In the first part of Session 2, we will continue the discussion of preparing and submitting scientific abstracts. The abstracts that students completed for the assignment will be discussed.
2. In the second part of Session 2, the instructors will cover the organization and planning of a poster to effectively communicate scientific, curricular, or clinical data. Students will learn important pitfalls to avoid when creating a poster. Different techniques for developing posters (such as the use of panels or single sheets) will be presented. The instructors will show a number of examples of posters in class for review and discussion.
3. The final part of Session 2 will review lecturing and public speaking techniques, with a particular focus on presenting oral abstracts at national meetings. Students will learn oral delivery techniques designed to capture and maintain audience interest.

Required Readings before Session 2:

Lang, Chapters 12 and 13.

Homework Assignment (non-graded):

Students will read the parts of Lang Chapter 7 that focus on the introduction and methods sections of research papers. In addition, review the handouts on “Elements of Style” (to be distributed in class) and be prepared to discuss at the next session.

Due Date: nothing needs to be turned in for this assignment.
Session 3: Tables and Figures and Elements of Style
Anatomy of a Research Article

At the conclusion of this lecture, the student will be able to:

1. Understand how to use original data to create clear and informative tables and figures for manuscripts.
2. Write succinct and well-structured sentences and paragraphs.
3. Choose proper voice and verb tenses for manuscripts.
4. Understand the form and function of the introduction and methods sections of a manuscript.

Topics:

1. During the first half of Session 3, the instructors will discuss the creation of effective tables and figures for use in posters and papers. Data will be provided and discussed for use in the assignment for the preparation of a table and figure. Elements of writing style will also be discussed during the first hour.
2. The second hour will cover the functions of the introduction and methods sections of a research paper. If time allows, students will break into small groups to critique introduction and methods sections provided to them.

Required Readings before Session 3:
Lang, Chapter 4 and 7; “Elements of Style” handouts.

Graded Homework Assignment #2:
Using data provided in class and available electronically on Blackboard, students will work in assigned groups (2-4 students) to create either a table or figure suitable for inclusion in a manuscript or poster. Completed assignments should be e-mailed to the appropriate section instructors (Conroy, Kraemer, and Zickmund) and posted on Blackboard.
Session 4: Anatomy of a Research Article (continued)
Critique of a Research Article

At the conclusion of this lecture, the student will be able to:

1. Understand the form and function of the results and discussion sections of a manuscript.
2. Understand how to critique an original research article for style, presentation, and content.

Topics:

1. The session will cover the functions and style of the results section and discussion section of a research paper. The class will discuss the writing style and function of the results and discussion sections of the manuscripts initially provided in Session 1.
2. In class, students will work as a group to formally critique a manuscript. Examples of actual peer-review critiques will be distributed and discussed in class.

Required Readings before Session 4:

Lang, Chapter 7.

Graded Homework Assignment #3:

Instructions about performing a peer-review critique and examples of actual critiques will be provided in class. Students will be asked to write a critique of a manuscript initially provided in Session 1. The critique should be single-spaced and limited to 2-3 typed pages in length. It should include separate Comments to the Editors and Comments to the Authors, and it should focus on issues related to study design, manuscript organization, the content and function of the individual components of the paper, effective use of tables and figures, and style and clarity of writing. Completed assignments should be e-mailed to the appropriate section instructors (Conroy, Kraemer, and Zickmund) and posted on Blackboard.
At the conclusion of this lecture, the student will be able to:

1. Describe the steps that are involved in moving a research paper from submission to publication in a peer-reviewed journal.

2. Explain what peer reviewers and editors look for in manuscripts about clinical research, medical education, or health policy.

Topics:

1. The session will begin with a discussion of the manuscript critiques completed by each student prior to this session. Students will be given the actual editor’s and peer reviewers’ comments for the manuscripts.

2. The remainder of Session 5 will be used to describe the steps that are involved in moving a paper from submission to publication in a peer-reviewed journal. The instructors will draw on their past experiences as reviewers and authors of scientific papers to explain what peer reviewers and editors look for in manuscripts about clinical research, medical education, and health policy. General guidelines and tips on how to respond to editor and reviewer critiques will be provided. Examples of actual response letters will be distributed. There will be an in-class group exercise on responding to editor and reviewer critiques.

Required Readings before Session 5:
Lang, Chapter 11.

Graded Homework Assignment #4:
Students will prepare a response to the actual peer-reviewed critique of the manuscript. The response will be in the form of a letter to the editor that indicates how each issue will be addressed in a revised manuscript. Examples of letters to the editor will be provided by the instructors. Completed assignments should be e-mailed to the appropriate section instructors (Conroy, Kraemer, and Zickmund) and posted on Blackboard.
Session 6: Responding to Editor/Reviewer Critiques
What to Do After Your Paper is Accepted

At the conclusion of this lecture, the student will be able to:
1. Understand how to respond to reviewer and editor critiques of scientific manuscripts.
2. Know what activities to perform and notifications to provide after an article is accepted for publication.

Topics:
1. The first part of Session 6 will review the students’ responses to the editor and reviewers (the assignment from last week) and will continue discussion of the topic. The students’ responses will be compared with the responses developed by the original authors. This will be followed by a discussion of what authors need to do following acceptance of a peer-reviewed manuscript, ranging from providing key notifications to preparing a press release to dealing with the lay press.

Required Readings before Session 6:
None.

Graded Homework Assignment: Final Presentation
For the final project, each student will prepare a 10-minute oral scientific presentation with 12–15 accompanying slides. The presentation will be based on the research paper (introduction, methods, results, and discussion) provided at the outset of the course or on the student’s own original data or materials. For students planning to use their own data or materials, it is imperative to obtain approval in advance with one of the course coordinators (Zickmund).
At the conclusion of this session, the student will be able to:

1. Prepare and deliver a 10-minute scientific oral presentation with accompanying slides.
2. Respond to questions about your presentation.
3. Critique the oral presentations of your fellow students.

Topics:

The 4-hour final sessions will be devoted to student final projects. The instructors will moderate these sessions and help direct questions. Each student will have 10 minutes to present and 5 minutes to answer questions. Students in the audience will have the opportunity to offer comments and ask questions about the final presentations of their peers. Each student will receive password access to a digital recording of his or her oral presentation.