MEDEUD 2140  
Medical Writing and Presentation Skills

Class meetings:  
Spring & Fall Terms

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 you develop medical writing and presentation skills. This objective will be achieved through a combination of video mini-lectures, readings, class exercises, and homework assignments. In these activities, you will practice specific writing, critiquing, and presentation skills.

All course information, announcements, and homework assignments are available at http://courseweb.pitt.edu.

Target Audience  
The course is for students who have limited experience writing, critiquing, and presenting papers.

Course Requirements  
- **Pre-session work**: There are activities you must complete before each session to prepare for the activities that will take place during that session. Please complete your pre-session work prior to the session. **This includes the first session**.
- **Homework**:
  - Late assignments will receive a 10% (1 grade) deduction per day late.
  - Upload all homework to Courseweb.
  - Use a standard nomenclature for naming homework assignments: surname_ assignment number.
  - Include your name at the top of your assignment
- **Class attendance and participation** are required. Students who miss 3 or more of the class sessions will fail the course. For 1-2 missed classes, these will be deducted proportionately from the “class participation” component of the grade.

Required Textbooks  

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

Grading
Your letter grade for this course will be based on:

- Class participation: 10 points per session (80 total)
- Homework 1 (Abstract): 40 points
- Homework 2 (Critique): 40 points
- Homework 3 (Response Letter): 40 points
- Homework 4 (Press Release/SOCO): 40 points
- Oral Presentation and self-assessment: 50 points

The grading criteria for each homework assignment will be available on Courseweb.

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

- 98–100 = A+
- 92–97 = A
- 90–91 = A-
- 86–89 = B+
- 82–85 = B
- 80–81 = B-
- 76–79 = C+
- 70–75 = C
- <60 = F
**Academic Integrity**

As a student in this course, you are 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.

**ICRE Core Competencies Addressed, by Session**

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<thead>
<tr>
<th>Competency</th>
<th>S1</th>
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<tr>
<td>Ethics and Professional Norms: Provide examples of the norms of professional integrity with regard to designing and conducting research including: data collection, sharing and protection; and reporting of findings.</td>
<td>X</td>
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<td>Multidisciplinary Teamwork: Demonstrate behaviors necessary to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.</td>
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<td>Oral Communication: Prepare and deliver oral presentations of research at a variety of stages to a range of audiences, and respond to constructive criticism and questions.</td>
<td>X</td>
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<td>Oral Communication: Prepare critiques of oral presentations.</td>
<td>X</td>
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<tr>
<td>Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.</td>
<td>X</td>
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<td>Written Communication: Prepare critiques of written presentation following the appropriate guidelines.</td>
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<td>Written Communication: Organize and report statistical results.</td>
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**Session 1:** Course Introduction
Preparation of Scientific Abstracts
Writing Hygiene

At the end of this session, you should be able to:

- Critique abstracts and distinguish effective from ineffective abstracts.
- Write an effective (clear, focused, parsimonious) structured abstract.
- Explain why setting a personal writing goal and scheduling writing time is important.

**BEFORE CLASS**

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| Read Lang, Chapters 1 and 2, or view this video: “Writing in the Sciences: Introduction: Principles of Effective Writing” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=PPsocEFCGRU&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=1](https://www.youtube.com/watch?v=PPsocEFCGRU&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=1) (11:25 mins) |

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| “Writing in the Sciences: Abstract” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=xmzUQ46YFI](https://www.youtube.com/watch?v=xmzUQ46YFI) (12:13)  
“Writing Hygiene” (Barnato, University of Pittsburgh) (5 mins) |

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<td>Lang, Chapters 3 and 5</td>
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| Set a personal writing productivity goal and block off time on your calendar to write.  
Look up the abstract format for your favorite medical journal. |

**Optional:**

“Writing in the Sciences: Examples of What Not to Do” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=Tf0hJn7XWCs&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=2](https://www.youtube.com/watch?v=Tf0hJn7XWCs&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=2) (7:53 mins)

“Writing in the Sciences: Using the Active Voice” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=aZqjYzW-jtw&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=8](https://www.youtube.com/watch?v=aZqjYzW-jtw&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg&index=8) (15:22 mins)

“Writing in the Sciences: Write with Verbs” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=VnAsdOG_1Tw&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg](https://www.youtube.com/watch?v=VnAsdOG_1Tw&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg) (12:08 mins)

“Writing in the Sciences: Parallelism” (Sainani, Stanford)  
[https://www.youtube.com/watch?v=ScAyBtAivzk&index=16&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg](https://www.youtube.com/watch?v=ScAyBtAivzk&index=16&list=PLUk4uy2jPpXVGXqVhgs352q6jOdl608Qg) (7:54 mins)
DURING CLASS

- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- The session will begin with introductions, followed by a brief discussion of the expectations for this course in terms of attendance, participation, completion of assignments, and grading. We will describe the goals for the class and solicit your goals for the course.
- Using what you’ve learned from the videos and the readings, you will review a set of sample abstracts and complete an abstract review form for each.
- In groups, you will compare and discuss each other’s abstract review forms and then reconvene as a class to distill key take-aways.

AFTER CLASS: Homework #1

You will be assigned one of the two available manuscripts you will use for all four homework assignments. Both manuscripts are available on Courseweb.

Read your assigned manuscript; then, using what you learned from readings, videos, and class discussion, write a scientific abstract for the manuscript you chose. The abstract text should not exceed 250 words and should be structured in a format with the following headings: background, methods, results, and conclusion.

Submission: Upload your abstract to Courseweb by 5:00 p.m. See abstract review form provided on Courseweb. Your work will be graded against this rubric. Total points possible = 40

Self-assessment: Compare your submitted abstract to the “real” abstract submitted by the authors of the manuscript. The “real” abstracts will be uploaded by the instructors after all homework assignments for this session are submitted.
### Session 2: Preparation of Tables and Figures

**At the end of this session, you should be able to:**
- Describe the lexicon of Tables (e.g., "Table 1").
- Prepare easily readable tables.
- Distinguish between data best presented as a table or a figure.
- Prepare tables and figures that facilitate readers’ data interpretation.

**BEFORE CLASS**

<table>
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<th>Choose</th>
<th>Read Lang, Chapter 4, or view this video: “Tables and Figures” (Sainani, Stanford) <a href="https://www.youtube.com/watch?v=JtL5wQr1jLo">https://www.youtube.com/watch?v=JtL5wQr1jLo</a> (start: 7:05, end: 41:48)</th>
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<tbody>
<tr>
<td>Do</td>
<td>Become sufficiently familiar with the smoking data document on Courseweb that you are ready to begin working on corresponding tables and figures in class.</td>
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**DURING CLASS**
- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- Using data provided in class and available electronically on Courseweb, students will work in assigned groups (3-4 students) to create 1 table and 1 figure. Be sure to include titles and all labels.
- Group-generated tables and figures will be reviewed, discussed, and compared/contrasted with the published version.
Session 3  
Anatomy of a Research Article  
Critique of a Research Article  
Ethical Considerations

At the end of this session, you should be able to:
- Describe the form and function of each section of a research manuscript.
- Critique an original research article for style, presentation, and content.
- Explain the importance of ethical standards in writing and publishing

BEFORE CLASS

Choose

Review Lang Chapter 7, or view the following four videos:
- “Writing in the Sciences: Introduction section” (Sainani, Stanford)  
  https://www.youtube.com/watch?v=Hmi0T1NCx2w&index=29&list=PLUk4uy2jPpXVGXqVhgs35q6jOdl608Qg (28:52)
- “Writing in the Sciences: Methods section” (Sainani, Stanford)  
  https://www.youtube.com/watch?v=GJdrfsnXSra&index=28&list=PLUk4uy2jPpXVGXqVhgs35q6jOdl608Qg (10:21)
- “Writing in the Sciences: Results section” (Sainani, Stanford)  
  https://www.youtube.com/watch?v=O_BmWssXaphw&index=27&list=PLUk4uy2jPpXVGXqVhgs35q6jOdl608Qg (15:26)
- “Writing in the Sciences: Discussion section” (Sainani, Stanford)  
  https://www.youtube.com/watch?v=yazUGQdenvc&index=29&list=PLUk4uy2jPpXVGXqVhgs35q6jOdl608Qg (22:26)

View

“Anatomy of a Research Article” (Barnato, University of Pittsburgh) (15 mins)

Read

- Lang Chapter 8
- Annotated reviewer comments from JGIM Editor Carlos Estrada.

Do

- Download the “instructions for authors” from 2 journals to which you may submit your work. This may include subspecialty journals (i.e., it is best that everyone does not download the instructions for NEJM and JAMA). Download a sample article from the 2 journals. Bring to class.
- Write a draft critique of your course manuscript (either the clinical research or medical education article) using the critique review form provided. Bring to class.
- Download the “manuscript template” provided on Courseweb. This is a template the instructors use to organize their own writing. Feel free to use/adapt it for your own purposes.

DURING CLASS

- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
• Working in groups of 3-4, discuss the ways that structure varies from journal to journal, using the “Instructions for Authors” and example articles that you downloaded for homework.
• Discuss the structure of the introduction and discussion section of your articles. How extensive are the “literature review” portions of these sections? How much speculation is there in the discussion?
• Compare your critiques of the course manuscript, pooling, prioritizing, and clarifying your observations and comments to provide constructive feedback to the author.

AFTER CLASS: Homework #2
Based on your in-class discussions with your peers, write a critique of the manuscript provided to you by the instructors, including separate confidential comments to editors, major and minor comments to authors, and complete the journal’s score sheet. Your critique should be single-spaced and limited to 2-3 typed pages in length. 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 following the criteria outlined on the critique review form available on Courseweb.

Submission: Upload your manuscript review to Courseweb by 5:00 p.m. See critique review form provided. Total points possible = 40

Self-assessment: Compare your submitted manuscript review to the “real” manuscript review received by the authors of the manuscript. The “real” reviews will be uploaded by the instructors after all homework assignments for this session are submitted.
Session 4: Revising Papers for Publication  
Responding to Editor/Reviewer Critiques

At the end of this session, you should be able to:

- Describe the steps that are involved in moving a research paper from submission to publication in a peer-reviewed journal.
- Explain what peer reviewers and editors look for in manuscripts about clinical research, medical education, or health policy.
- Respond to editor and reviewer critiques.

BEFORE CLASS

Choose

Read Lang, Chapter 11 or view “Submitting and revising papers for publications” (Barnato, University of Pittsburgh) (28:00)

View

“Writing in the Sciences: How to do a peer review (Sainani, Stanford) (28:47)
https://www.youtube.com/watch?v=q7x7Nr25cic&index=42&list=PL8yeejfiNxNBT2rTomRjmWNljgh4DBmHST

Read

Guyatt GH, Haynes BR. Preparing reports for publication and responding to reviewers’ comments. J Clin Epidemiol. 2006;59:900-6. PMID: 16895811

DURING CLASS

- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- Read the actual editor and peer reviewers’ comments for the manuscript.
- Working in groups of 2-3, prepare a response to the comments.

AFTER CLASS: Homework #3

Based on your in-class discussions with your peers, prepare a response in the form of a letter to the editor and point-by-point response to review indicating how and where each issue has been addressed in a revised manuscript.

Submission: Upload your response letter to Courseweb by 5:00 p.m. See response review form provided. Total points possible = 40

Self-assessment: Compare your submitted response letter to the “real” response letter submitted by the authors of the manuscript. The “real” response letters will be uploaded by the instructors after all homework assignments for this session are submitted.
Session 5: What to Do After Your Paper Is Accepted

At the end of this session, you should be able to:

- Identify post-acceptance responsibilities.
- Identify the “single overriding communication objective” (SOCO) of a manuscript.
- Stay “on topic” during an interview.
- Prepare a press release.

BEFORE CLASS

View

- Proofs: What to expect during production, Taylor and Francis: [https://www.youtube.com/watch?v=P4Ta0fudypM](https://www.youtube.com/watch?v=P4Ta0fudypM) (3:43)
- Navigating the NIH Manuscript submission process: [https://www.youtube.com/watch?v=IIEBtnSqMA](https://www.youtube.com/watch?v=IIEBtnSqMA) (9:48)
- NCBI My Bibliography: [https://www.youtube.com/watch?v=9gApmLHdCSM](https://www.youtube.com/watch?v=9gApmLHdCSM) (2:53)
- My Bibliography: Public Access Compliance: [https://www.youtube.com/watch?v=JYODIOD_YYE](https://www.youtube.com/watch?v=JYODIOD_YYE) (3:26)
- “Why Scientists are Losing the PR Wars” (Barnato, University of Pittsburgh) (3 mins)
- YouTube SOCO video at [https://www.youtube.com/watch?v=g2sk3rqC29Q](https://www.youtube.com/watch?v=g2sk3rqC29Q) (1 min)

Read

- [http://www.prsa.org/Intelligence/Tactics/Articles/view/8460/1005/Writing_accurate_news_releases_for_medical_research#.VcOoItgJv0](http://www.prsa.org/Intelligence/Tactics/Articles/view/8460/1005/Writing_accurate_news_releases_for_medical_research#.VcOoItgJv0)
- Press releases on [www.health.pitt.edu](http://www.health.pitt.edu) and on other sites, such as Eurekalert, Newswise and AlphaGalileo.

DURING CLASS

- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- Working in groups of 3-4, complete the SOCO worksheet, and then brainstorm interview questions that you would expect a reporter to ask the authors of this manuscript.
- In pairs, take turns role-playing news reporter and scientist.

AFTER CLASS: Homework #4

Revise the SOCO worksheet you completed in class, if necessary. Write a press release based upon your SOCO worksheet.

Submission: Upload both your SOCO and your press release to Courseweb by 5:00 p.m. See press release review form provided. Total points possible = 40
Session 6: Preparation of Posters

At the end of this session, you should be able to:
- Critique posters and distinguish effective from ineffective posters.
- Organize and plan a poster to appropriately communicate scientific or curricular data.

BEFORE CLASS

View
View YouTube video on Preparing and Presenting Posters at:
https://www.youtube.com/watch?v=BoI8kceZl2Q (14:01)

Read
Lang, Chapter 12

Do
- Using criteria from the Lang reading and videos, find examples of good and bad posters, and submit one clearly labeled example of each via Courseweb. Recommendation: Use the Web. A Google search for “bad science posters” and “good examples of scientific posters” yields many results.
- Locate useful poster design websites.

DURING CLASS
- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- Review sample posters and identify features of effective and ineffective posters, using what you've learned from readings and videos. Share tips about useful poster design websites and resources.
- Bring a laptop. If you don’t own one, contact the instructors by February 8, 2017.
- Working in groups of 2-3, prepare a poster for the manuscript provided to you by the instructors. Use the examples provided in Lang as models, or find examples at a design website of your choosing. The poster can include empty box placeholders for where you would place a table or figure (e.g., students do not need to rebuild tables and figures from data in the manuscript).
Session 7  Oral Presentations

At the end of this session, you should be able to:
- Prepare and deliver a 10-minute scientific oral presentation with accompanying slides.
- Respond to questions about your presentation.
- Assess your own presentation.
- Give meaningful feedback to your classmates on their presentations.

BEFORE CLASS

View
- Oral Presentations using PowerPoint (Barnato, University of Pittsburgh) (15 mins)
- Optional: Designing Effective Scientific Presentations (42:09)
  https://www.youtube.com/watch?v=Hp7ld3Yb9XQ

Read

Do
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. All students, no matter the date of their presentation, must submit their slides no later than 5 pm.

DURING CLASS
- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- Students will be given assignments to present. If you are presenting today, you will have 10 minutes to present and 5 minutes to answer questions (time strictly enforced.) Two students will be pre-assigned to evaluate each presentation and provide constructive feedback using the oral presentation review form. All students in the audience will have the opportunity to offer comments and ask questions about the final presentations of their peers. The grade for this assignment will be based upon the instructor, not peer, grades. See grading form provided. Points possible = 40

AFTER CLASS: Self-Assessment
Each student presenting today will receive password access to a digital recording of his or her oral presentation. Review your digital recording and evaluate your presentation using the oral presentation self-assessment form. Submit your self-assessment via Courseweb by 5:00 p.m. Points possible = 10
Session 8: Oral Presentations

At the end of this session, you should be able to:

- Prepare and deliver a 10-minute scientific oral presentation with accompanying slides.
- Respond to questions about your presentation.
- Assess your own presentation.
- Give meaningful feedback to your classmates on their presentations.

Do

If you are scheduled to give an oral presentation during this session, 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.

DURING CLASS

- Come to class prepared to discuss the pre-class videos and/or readings. Questions and comments are welcomed.
- If you are presenting today, you will have 10 minutes to present and 5 minutes to answer questions (time strictly enforced.) Two students will be pre-assigned to evaluate each presentation and provide constructive feedback using the oral presentation review form. All students in the audience will have the opportunity to offer comments and ask questions about the final presentations of their peers. The grade for this assignment will be based upon the instructor, not peer, grades. See grading form provided. Points possible = 40

AFTER CLASS: Self-Assessment

Each student presenting today will receive password access to a digital recording of his or her oral presentation. Review your digital recording and evaluate your presentation using the oral presentation self-assessment form. Submit your self-assessment via Courseweb by 5:00 p.m. Points possible = 10
Additional References and Web Site Resources:

- Drubin DG. Any jackass can trash a manuscript, but it takes good scholarship to create one (how MBc promotes civil and constructive peer review). Mol Biol Cell. 2011;22:525-7. PMID: 21357757
- Mulford Health Science Library. Instructions to authors in the health sciences. http://mulford.meduhio.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).
- See the Enhancing QUAlity and Transparency Of health Research (EQUATOR) Network for a compendium of quality criteria at: http://www.equator-network.org/
- 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
- Provenzale JM. Revising a manuscript: ten principles to guide success for publication. AJR Am J Roentgenol. 2010;195:W382-7. PMID: 21098168
• Shelledy DC. How to make an effective poster. Respir Care. 2004;49:1213-6. PMID: 15447805
• Strunk and White. The Elements of Style, Fourth Edition.
• Tufte, Edward – see http://www.edwardtufte.com
• “The Cognitive Style of PowerPoint: Pitching Out Corrupts Within”
• “The Visual Display of Quantitative Information”
• “Envisioning Information”