MEDEDU–2140	**Fall 2009**
Medical Writing and Presentation Skills	**Course Instructors:** Michael Elnicki, MD (elnickim@upmc.edu) Michael Fine, MD, MSc (finemj@upmc.edu) Kevin Kraemer, MD, MSc (kraemerKL@upmc.edu) Sharon Maddox, MA (maddoxsk@upmc.edu) Brian Primack, MD, EdM, MS (primba@upmc.edu)

Course summary: 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 obscured by poorly delivered presentations or poorly 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 lectures, readings, and projects in which students will practice specific skills. For the final project, students will develop a 10-minute oral scientific presentation based on background materials provided in class or on their own data.

Objectives: The following table lists the specific teaching objectives of the MEDEDU–2140 sessions.

Topic	**Students will be able to:**
Introduction	Describe how errors in medical writing and lectures inhibit effective communication.
General Writing Skills/Elements of Style	Write succinct and well-constructed sentences and paragraphs. Choose proper subject, verb, and object placement. Choose proper voice and tense. Effectively edit a poorly written document.
Writing Scientific Abstracts	Write a structured abstract that is clear and focused. Effectively critique an abstract.
Anatomy of a Research Article	List the essential types of scholarly written reports. Understand the form and function of the basic building blocks of research articles. Effectively critique an original research article for style, presentation, and content.
Submitting and Revising Papers for Publication	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 editors' and reviewers' critiques.

Oral Abstract Presentation Skills	Practice delivery techniques to capture and maintain audience interest. Tailor oral presentations to different audiences.
Illustrating Lectures with Visual Aids	Use visual aids appropriately and effectively. Use PowerPoint software.
Preparation of Poster Presentations	Describe how to organize and plan a poster to effectively communicate scientific, curricular, or clinical data. Develop an effective 1-minute "bullet" to quickly summarize the main content of a poster.
Final Projects	Prepare and deliver a 10-minute scientific oral presentation with accompanying slides. Graciously receive written and verbal critique of the final project.

Course mechanics:

1 credit (16 contact hours)
1 session per week for 7 weeks from 10/30/09 until 12/18 /09 (no class on Friday 11/27/09)
2 hours per session (class time 1-3pm except for a 4-hour final session on 12/18/09 from 1-5pm)

Attendance policy: Students who miss **3 or more** of the 2-hour sessions will not receive a passing grade. Missed classes will be deducted proportionately from the "class participation" component of the course grade.

Grading: 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

Lateness policy: All homework assignments (except the oral presentation) are due to the instructors no later than 5 PM on the Wednesday before the session in which the assignment will be discussed. Students will receive a 10% (1 grade) deduction 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 the course coordinator(s) to see whether alternative arrangements are possible. All assignments must be completed to receive credit and a final grade for the course.

Location: Institute for Clinical Research Education, Parkvale Building, 200 Meyran Avenue (corner of Forbes and Meyran in Oakland), 3rd floor lecture room.

Prerequisites: None.

Textbook: Zeiger M. *Essentials of Writing Biomedical Research Papers.* 2nd ed. San Francisco: McGraw-Hill; 2000.

Course Web site: Access through http://courseweb.pitt.edu/.

Additional readings: To be distributed in class. *Please remember to shred abstracts and manuscripts at the end of the course.*

Session 1	10/30/09 1-3 PM	Hour 1: Why Is Effective Communication Important? Hour 2: Preparation of Scientific Abstracts	Elnicki, Fine, Maddox

Description: After the instructors and students introduce themselves, 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.

The first part 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.

The second part of Session 1 will focus on the preparation of scientific abstracts. General rules for writing an effective, structured abstract will be covered. 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.

Reading before Session 1: Zeiger, Chapter 10.

Assignment for Session 2 (due by 5 PM on Wednesday, 11/04/09, prior to Session 2): 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 Dr. Elnicki (elnickim@upmc.edu) and Dr. Fine (finemj@upmc.edu) and posted on Blackboard.

Session 2	11/06/09 1-3 PM	Hour 1: Preparation of Scientific Abstracts (continued) Hour 2: Preparation of Scientific Posters	Elnicki, Fine, Maddox

Description: During the first half 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. General guidelines for submitting abstracts for presentation at national scientific meetings will be presented.

Many scientific abstracts are presented at meetings in poster format. In the second half 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. In addition, 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.

Reading before Session 2: Handouts concerning tables and figures.

Assignment for Session 3 (due by 5 PM on Wednesday, 11/11/09, prior to Session 3): Students working in assigned groups (2-4 students) will create a table and figure suitable for inclusion in a manuscript or poster based on data provided in class and available electronically on Blackboard. Completed assignments should be e-mailed to Dr. Elnicki (elnickim@upmc.edu) and posted on Blackboard. Students will also review the introduction and methods sections of the manuscripts provided in Session 1 and will formulate an assessment of whether each section was clearly written and fulfilled its functions. Students will read Zeiger Chapters 4 and 5 on the introduction and methods sections of research papers. Use these readings for the completion of this assignment. In addition, review the handouts on "Elements of Style" (to be distributed in class) and be prepared to discuss at the next session.

Session 3	11/13/09 1-3 PM	Hour 1: Posters (continued) and Elements of Style Hour 2: Anatomy of a Research Article	Elnicki, Maddox

Description: During the first half of Session 3, we will continue the discussion of preparing tables and figures. The tables and figures that student groups prepared for the assignment will be discussed. Elements of writing style will also be discussed during the first hour.

The second hour will cover the functions of the introduction and methods section of a research paper. More specifically, the class will discuss the style and function of the introduction and methods sections of the manuscripts initially provided in Session 1, with facilitation by the instructors.

Reading before Session 3: Zeiger, Chapters 4 and 5; "Elements of Style" handouts.

Assignment for Session 4: Students will review the results section, tables and figures, and discussion section of the manuscripts initially provided in Session 1 and will formulate an assessment of whether each of these manuscript components was clearly written and fulfilled its functions. A new manuscript and additional readings on the role of the results section, tables and figures, and discussion section of research papers will be distributed in class in preparation for the next session. Read the new manuscript provided in class, and be prepared to conduct a critique of it in class during the next session.

Session 4	11/20/09 1-3 PM	Anatomy of a Research Article (continued)	Elnicki, Fine, Maddox

Description: 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. In class, students will work as a group to formally critique the new manuscript handed out at the end of the previous session. Examples of actual peer-review critiques will be distributed and discussed in class.

Reading before Session 4: Zeiger, Chapters 6 and 7.

Assignment for Session 5 (due by 5 PM on Wednesday, 12/02/09, prior to Session 5): 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 Dr. Elnicki (elnickim@upmc.edu) and Dr. Fine (finemj@upmc.edu) and posted on Blackboard.

Session 5	12/04/09 1-3 PM	Submitting and Revising Papers for Publication Responding to Editor/Reviewer Critiques	Elnicki, Fine, Maddox

Description: 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.

The remaining part 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.

Reading before Session 5: Zeiger, Chapter 12; Zeiger, "Reaching the Goal"; *Academic Medicine* supplement.

Assignment for Session 6 (due by 5 PM on Wednesday, 12/09/09, prior to Session 6): 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 Dr. Elnicki (elnickim@upmc.edu) and Dr. Fine (finemj@upmc.edu) and posted on Blackboard.

Session 6	12/11/09 1-3 PM	Hour 1: Responding to Editor/Reviewer Critiques and What to Do after Article Acceptance Hour 2: Oral Abstract Presentations	Fine, Kraemer, Primack, Maddox

Description: The first part of Session 6 will review the students' responses to the editor (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.

The second part of Session 6 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.

Reading before Session 6: None.

Assignment for Session 7 (due at Session 7): For the final project, students will prepare a 10-minute oral scientific presentation with 12 to 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 instructors.

Session 7	12/18/09 1-5 PM	Final Projects and Critiques	Elnicki, Fine, Maddox

Description: The 4-hour final session will be devoted to the student projects. The instructors will moderate this session and help direct questions. Each student will have 10 minutes to present and 5 minutes to answer questions. Each student will receive password access to a digital recording of his or her oral presentation.

References and Resources

American College of Physicians. Guide to preparing for the abstract competition. http://www.acponline.org/srf/abstracts/guide.htm. Accessed September 28, 2009.

Bacchetti P. Peer review of statistics in medical research: the other problem. *BMJ*. 2002;324:1271–3. PMID: 12028986

Black N, van Rooyen S, Godlee F, Smith R, Evans S. What makes a good reviewer and a good review for a general medical journal? *JAMA*. 1998;280:231–3. PMID: 9676665

BMJ. Checklists for editors, reviewers, statisticians, and others. http://resources.bmj.com/bmj/authors/checklists-forms. Accessed September 28, 2009.

BMJ. Training package for BMJ peer reviewers. http://resources.bmj.com/bmj/reviewers/training-materials. Accessed September 28, 2009.

Bordage G. Reasons reviewers reject and accept manuscripts: the strengths and weaknesses in medical education reports. Acad Med. 2001;76:889–96. PMID: 11553504

Branson RD. Anatomy of a research paper. Respir Care. 2004;49:1222–8. PMID: 15447807

Cummings P, Rivara FP. Responding to reviewers' comments on submitted articles. Arch Pediatr Adolesc Med. 2002;156:105–7. PMID: 11814367

Cummings P, Rivara FP. Reviewing manuscripts for Archives of Pediatrics and Adolescent Medicine. Arch Pediatr Adolesc Med. 2002;156:11–3. PMID: 11772184

Cummings P, Rivara FP, Koepsell TD. Writing informative abstracts for journal articles. Arch Pediatr Adolesc Med. 2004;158:1086–8. PMID: 15520348

Durbin CG Jr. Effective use of tables and figures in abstracts, presentations, and papers. Respir Care. 2004;49:1233–7. PMID: 15447809

Estrada CA, Patel SR, Talente G, Kraemer S. The 10-minute oral presentation: what should I focus on? Am J Med Sci. 2005;329:306–9. PMID: 15958872

Godlee F. Making reviewers visible: openness, accountability, and credit. JAMA. 2002;287:2762–5. PMID: 12038905

Green J. Graphs. Chest. 2006;130:620–1. PMID: 16899870

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

Hess DR. How to write an effective discussion. Respir Care. 2004;49:1238–41. PMID: 15447810

Huth EJ. Writing and Publishing in Medicine. 3rd ed. Baltimore: Williams and Wilkins; 1999.

Iverson C, Christiansen S, Flanagin A, et al. AMA Manual of Style: A Guide for Authors and Editors. 10th ed. New York, NY: Oxford University Press; 2007. http://www.amamanualofstyle.com//oso/public/index.html. Accessed September 28, 2009.

Kallet RH. How to write the methods section of a research paper. Respir Care. 2004;49:1229–32. PMID: 15447808

Lee KP, Boyd EA, Holroyd-Leduc JM, Bacchetti P, Bero LA. Predictors of publication: characteristics of submitted manuscripts associated with acceptance at major biomedical journals. Med J Aust. 2006;184:621–6. PMID: 16803442

Mulford Library. Instructions to authors in the health sciences. http://mulford.meduohio.edu/instr/. Accessed September 28, 2009. Provides direct links to the following: (1) instructions to authors for over 5,000 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); (6) MOOSE consensus statement (MOOSE = meta-analysis of observational studies in epidemiology); and (7) QUOROM statement, checklist, and flowsheet (QUOROM = quality of reports of meta-analyses of randomised controlled trials).

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

Puhan MA, ter Riet G, Eichler K, Steurer J, Bachmann LM. More medical journals should inform their contributors about three key principles of graph construction. J Clin Epidemiol. 2006;59:1017–22. PMID: 16980140

Roberts LW, Coverdale J, Edenharder K, Louie A. How to review a manuscript: a “down-to-earth” approach. Acad Psychiatry 2004;28:81–7. PMID: 15298858

Shelledy DC. How to make an effective poster. Respir Care. 2004;49:1213–6. PMID: 15447805

St. James D. Writing and Speaking for Excellence: A Guide for Physicians. Boston: Jones and Bartlett; 1996.

Task Force of Academic Medicine and the GEA-RIME Committee. Checklist of review criteria. Acad Med. 2001;76:958–9. http://academicmedicine.org/pt/re/acmed/pdfhandler.00001888-200109000-00037.pdf;jsessionid=F1JGpKL0CHw3vgZXcRJcFBbBLvf6810dKK8xGht1J0M4Q4V6gCxz!-1186671185!-949856145!8091!-1. Accessed September 28, 2009.

Williams JM. Style: Ten Lessons in Clarity and Grace. 9th ed. New York: Longman; 2006.

Zeiger M. Essentials of Writing Biomedical Research Papers. 2nd ed. San Francisco: McGraw-Hill; 2000.