

ME 500 A3 – Science Communication
Spring 2022, Tue/Thu – 11:00am-12:45pm
PSY B51

Instructor:

Prof. James Bird
EMA 207, jbird@bu.edu
Office hours: Thurs 12:45 – 1:45pm or by appointment

Prerequisites:

- 1) Original findings that you would like to share and have not yet published.
- 2) Endorsement of your research advisor (student and advisor will determine final deliverable)

Grading:

The final grade for the course is based on class participation and multiple assignments throughout the course. These assignments culminate in a deliverable (e.g. paper, proposal, proceeding) to be decided by the student and their research advisor, as well as a poster presentation based on the student's original research findings.

Textbooks:

Required

Heard, S. 2016 The Scientist's Guide to Writing.
Schimel, J. 2012 Writing Science, Oxford University Press.

Strongly recommend

Schultz, D. 2013 Eloquent Science, American Meteorological Society.
Visual strategies for biological data. A collection of Nature Methods Points of View. 2015.

Other References:

Strunk & White 1999 The Elements of Style 4th Edition, Pearson.
Silvia, P. How to Write a Lot: A Practical Guide to Productive Academic Writing 2009.
Williams, J. & Colomb, G. Style Lessons in Clarity and Grace 10th Ed. 2010.
Heath & Heath Made to Stick: Why Some Ideas Survive and Others Die 2007.
Alley, M. The Craft of Scientific Writing, 1996.
Levin, A. Networking for Nerds, 2015.
Hofmann, A. Scientific writing and communication. 2010
King, S. On Writing. 2000

Relevant Resources at BU:

SciCommers (COM) <https://sites.bu.edu/scicommers/>
Educational Resource Center: <https://www.bu.edu/erc/programs/writing/>
Career Development (Resumes, Cover letter, etc.): <http://www.bu.edu/careers/>

Lecture by topic: We will cover the following topics around these given dates.

Lecture	Date	Topic	Text	Due
1	1/20	Introduction & Elevator pitches	SH 1,2, 25	
2	1/25	Coauthorship & Selecting a journal	SH 26,27 JS 19	Short HW1
3	1/27	Designing your plan for reading/writing	SH 3-6	Short HW2
4	2/1	Titles and abstracts as outlines	SH 9	Short HW 3 & Signed deliverable form
5	2/3	Giving, getting and using feedback Self-editing and friendly review	SH 21,22	Abstract
6	2/8	Guest talk Writing Resources	JS 1,2	
7	2/10	Science writing as storytelling Making your argument stick	Handouts, JS 3, SH 7	
8	2/15	Canonical Structures (OCAR/IMRaD)	JS 4, SH 8, 16	
9	2/17	Figure - Scientific Visualization – Data & Images – <i>Kelly Krause Videos</i>	Handouts	Outline
	2/22	NO CLASS – MONDAY SCHEDULE		
10	2/24	Guest talk Scientific Visualization		Graphical abstract & caption
11	3/1	Presenting your evidence	JS 8, SH 11, 12	Confirm outline w/advisor
12	3/3	Opening and concluding your article OCAR in detail	JS 5-7, 9 SH 10, 13	
	3/7-11	NO CLASS – SPRING BREAK		
13	3/15	Guest talk Managing references	SH 14, 15	“News & Views”
14	3/17	Formal review and response	SH 23, 24	
15	3/22	GROUP 1 – Paragraphs and arcs GROUP 2 – Sentences and flow	JS10,11,SH17 JS12,13,SH18	Present with slides
16	3/24	GROUP 3 – Words and energy GROUP 4 - Condensing and editing	JS14,15,SH19 JS16,17,SH20	Present with slides
17	3/29	No class: to cover time to attend 2 ME department seminars or equivalent		
18	3/31	Pair feedback on N&V microediting & final deliverable macroediting	JS 18	Feedback on News & Views
19	4/5	Oral and non-verbal communication		Draft of final deliverable

20	4/7	Guest talk?		
21	4/12	Preparing and presenting posters	JS: 20	Seminar speaker feedback
22	4/14	Guest talk Communicating to Broader Public		
23	4/19	Small group feedback		Draft of poster
24	4/21	Launching a career after your doctorate (CV, Biosketch, letters of reference)		
25	4/26	Guest talk Writing grants proposals		
26	4/28	Wrapping up – Responding to questions reviewers and audiences	JS 21	Poster
27	5/3	Poster Presentations		Final written deliverable

Assignments:

Short HW1: Finding your ‘gold-standard’

Bring in two peer-reviewed journal articles (please print out and bring as a hard copy). One article should be close to your final presentation topic (ie one that you would definitely cite) and the other should be an article in your field that you consider as one of your favorites. Please ensure that the articles are from two separate journals.

Short HW2: Choosing between journals

- Identify the journal for which you would most likely wish to submit your research results that you are presenting in this class.
- If the journal is distinct from the 2 journals from the articles in the last homework, then proceed to step ‘d’ with these as your 3 journals for this assignment.
- If the journal is the same as one of the previous ones, then select another journal from your field that diversifies your selection (e.g. a multidisciplinary journal, like *Science*, *Nature*, *PNAS*, etc. if the others are more specialized).
- Locate an article in your field from the new journal and bring a hard copy to class.
- Locate and skim the “author guidelines” for each of the 3 journals and upload the first page of these guidelines to gradescope to turn in.

Short HW3: Different ways to communicate same result

Skim through past News & Views from Nature and select one on a topic in your field. Download this review along with the article that it is reviewing and upload the citations to both articles to Gradescope.

Signed deliverable form: Please turn in a signed form from your advisor agreeing to the deliverable, co-authors (and tentative co-author order), funding sources that need to be

acknowledged, and agreement that the contents can be shared in this class (eg would not violate non-disclosure agreement, security clearance, etc.).

Abstract: Please write an abstract of your project deliverable that is less than 300 words.

Outline: Please prepare an outline of your project deliverable following the guides discussed in class.

Graphical abstract & Caption: Please prepare a figure that captures the essence of your deliverable and provide detailed caption.

Confirm outline w/advisor: Please meet with your advisor to discuss outline and receive confirmation that it is appropriate

“News & Views”: Write an 800-900 word summary of your project following Nature’s New&Views guidelines

Present with slides: I will split you up into one of 4 groups. Your group will be responsible to create slides related to assigned chapters in the book and present them to the class (~30-45 min).

Feedback on News & Views: Using track-changes and comments, peer review a classmate’s News & Views piece (I will assign and distribute these)

Draft of final deliverable: Provide a draft of your final deliverable that is at a suitable quality that it can be viewed by your classmates

Seminar speaker feedback: Attend two 1-hour research seminars, preferably the department’s Friday seminar series, and pay specific attention to the speakers’ communication style. Write 1-2 pages of feedback on their presentations. What aspects of their structure and delivery made the talk clear (or confusing), convincing (or dubious), and engaging (or soporific)? Were their noticeable differences between the speakers?

Draft of poster: Provide a draft of your poster that is at a suitable quality that it can be viewed by your classmates

Poster: Your final poster, following size guidelines, will need to be submitted to ME front desk to be sent out for printing

Final written deliverable: Your final written deliverable will need to be submitted to both me and your advisor.