

DR. J. HARRISON CARPENTER

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BRIEF BIO

In EBIO, I lead undergraduate classes on communication practice within the science disciplines. I teach students to analyze scientists' writing processes, structures and style from a sociorhetorical perspective. My current scholarly interests lie in pedagogy leading students to threshold concepts inherent to Writing in the Disciplines (WID) classes, as well as teaching students information literacy within STEM curricula. In the upcoming academic years, I intend to investigate trends in e-communication within the sciences, to assess potential incorporation of such practices into my classes.

EDUCATION

Ph.D., Rhetoric and Technical Communication, 2001
Michigan Technological University, Houghton, MI

Dissertation: *'Practicing our Preaching': Rhetoric and Technical Communication in American Forestry Discourse, 1905-54* (Advisor: Dr. Craig Waddell)

M.S., Rhetoric and Technical Communication, 1993
Michigan Technological University, Houghton, MI

Thesis: *The Scientific Ethos, Instrumentality, and the Public Trust: What Can Be Learned from the Michigan LLRW Authority* (Advisor: Dr. Craig Waddell)

B.S., Technical Communications (Science Writing Concentration, Speech Communication Minor), 1991

Ferris State University, Big Rapids, MI

TEACHING

Senior Instructor of Scientific Communication (1999-present)

Department of Ecology & Evolutionary Biology, University of Colorado—Boulder

Developed all materials for and teach:

EBIO 1940 Introduction to Scientific Writing

EBIO 3940 Written Communication in the Sciences

WRTG 3030 Writing on Science and Society (administered online through CU Division for Continuing Education, via Canvas LMS)

Student Honors Projects

K. Dapprich (2019): "Automation of the Motion of a Radiation Source for Testing Micromegas Detectors"

- T. Glass (2018): "ALK-EML4-Positive Cancers and Combination Therapy: Probing the Apoptotic Threshold"
- E. Moon (2018): "Exploring the Relationship Between Emotion Regulation and Executive Function in Children"
- K. Koo (2018): "Design and Synthesis of Toll-Like Receptor 8 Inhibitors: Optimizing the Potential Drugs for Autoimmune Diseases"
- S. Henshaw (2015): "Access to and Awareness of Undergraduate Research Opportunities at a Large Research University"
- C. Coleman (2015): "Characterization of Monoclonal Antibodies Specific to HPV31 L1 Protein"
- D. Chernick (2011): "Rab Conversion and Endosomal Maturation"
- K. Prodehl (2012): "Characterization of a Novel Protein Essential for Glial Cell Development"
- T. Bowen (2009): "Isolation and Conditional Mutants in the RRM2 Domain of U2AF⁶⁵"
- S.M. Young (2007): "Neonatal Infection-Induced Inflammatory Response on Glial Proliferation and Neurogenesis in the Rat Hippocampus"
- L.A. Loucks (2005): "Parental Divorce and Its Association with Satisfaction in a Dating Relationship"
- N. Casanova (2002): "Flavohemoglobin: The Role of YHb in Yeast *Saccharomyces cerevisiae*"
- R.M. Phillips (2000): "Kinetic Analysis of a Theophylline-RNA Complex"

SCHOLARSHIP

Refereed Publications

Losoff, B., Kuglistch, R. & Carpenter, J. H. (2018). Negotiating the ecology of information literacy: Ways of knowing, doing and writing in STEM. In J. L. Mattson & M. K. Oberlies (Eds.), *Framing Information Literacy: Teaching Grounded in Theory, Pedagogy, and Practice* (Vol. 5, pp. 521-26). ACRL Press.

Carpenter, J. H. (2012). A layered literacy framework for scientific writing pedagogy. [Internet]. *Currents in Teaching and Learning* 4(1), 17-33. Available from: <http://worchester.edu/currents>

Carpenter, J. H. & Krest, M. (2001). It's about the science: Students writing and thinking about data in a scientific writing course. *Language and Learning Across the Disciplines*, 5(2), 46-65.

Carpenter, J. H. (1999). 'Practicing our preaching': Gifford Pinchot, conservation, and the scientific rhetoric of 'demonstration forestry'. In J. M. Battalio (Ed.), *Interpretations of scientific discourse: Methods, practice, and pedagogy* (pp. 141-155). Bayshore, TX: Ablex Publishing Corp.

Carpenter, J. H. (1997). Define and conquer: Technical definitions and the rhetoric of risk communication. In S. Senecah (Ed.), *Proceedings of the Fourth Biennial Conference*

on Communication and Environment: Cazenovia, NY, July 26-28, 1997 (pp. 37-50). Syracuse, NY: SUNY College of Environmental Science and Forestry.

Other Publications

Dubinsky, J. & Carpenter, J. H. (Eds.). (2004). Special issue of *Technical Communication Quarterly*: Civic engagement and technical communication. (Volume 13, Number 3; Summer 2004.)

Carpenter, J. H. (2003). [Review of the book *Interacting with audiences: Social influences on the production of scientific writing* (Lawrence Erlbaum, 2001)]. *Technical Communication Quarterly*, 12, 225-227.

Carpenter, J. H. (2003). 'We look forward and back, and pine...': Can this relationship be saved? Technical communication, composition, and the attractions of disciplinarity. *Complicating Binaries: Exploring Tensions in Technical and Scientific Communication—Proceedings 2002, 29th Meeting of the Council for Programs in Technical and Scientific Communication*. Cedar Falls, IA: University of Northern Iowa. Online: <http://www.cptsc.org/conferences/conference2002/proceedings02.pdf>.

Carpenter, J. H. (2000). [Review of *The Rhetoric of Science in the Evolution of American Ornithological Discourse* (Ablex, 1998)]. *Rhetoric Society Quarterly*, 30, 108-111.

Carpenter, J. H., Chang, M., Gamez, C. E., Giron, J. R., McEwen, A., Moreno, H., Munoz, F., Rose, B., & Sandoval, C. (1994). Intercultural hazard communication. In B. Rose (Ed.), *Final Report of the Workshop on the Decade Volcano Santa Maria: Quezaltanango, Guatemala, November 7-13, 1993* (pp. 37-38). Ciudad Guatemala: Sección Vulcanología INSIVUMEH.

Conference Presentations

Carpenter, J. H. (2018, March). Sociocultural Learning Theory in Practice: Implications for Writing Teachers in STEM. Paper presented at the Annual Convention of the Conference on College Composition and Communication, Kansas City, MO.

Losoff, B., Kuglistch, R. & Carpenter, J. H. (2016, September). Negotiating the Ecology of Information Literacy: Ways of Knowing, Doing and Writing in STEM. Presentation to be given at the International Conference on Information Literacy, Savannah, GA.

Carpenter, J. H. (2013, March). *Are blogs part of scientific engagement in the Digital Age?* Paper presented at the Annual Convention of the Conference on College Composition and Communication, Las Vegas, NV.

Carpenter, J. H. (2011, April). *Disciplinarity, science curricula, and OWI: One department, one course proposal, and contested space*. Paper presented at the annual convention of the Conference on College Composition and Communication, Atlanta, GA.

Carpenter, J. H. (2010, November). *Scripting the process: Reflections on critical thinking in an online disciplinary writing course*. Paper presented at Crossing the Great Divide: Critical Thinking and Writing in the Majors, Quinnipiac University's Third International Critical Thinking/Writing-Across-the-Curriculum Conference, Hamden, CT.

Carpenter, J. H. (2009, March). *A layered literacy approach to scientific writing pedagogy*. Paper presented at the annual convention of the Conference on College Composition and Communication, San Francisco, CA.

Carpenter, J. H. (2005, March). *Why should science matter? Composition and its consideration of scientific writing*. Paper presented at the annual convention of the Conference on College Composition and Communication, San Francisco, CA.

Buchanan, A. S. & Carpenter, J. H. (2004, March). *Matters of genre in first-year composition: Literature reviews to encourage critical inquiry*. Paper presented at the annual convention of the Conference on College Composition and Communication, San Antonio, TX.

Carpenter, J. H. (2002, October). *'We look forward and back, and pine...': Can this relationship be saved? Technical communication, composition, and the attractions of disciplinarity*. Paper presented at the annual meeting of the Council for Programs in Technical and Scientific Communication, Logan, UT.

Krest, M. & Carpenter, J. H. (2002, March). *Educating the citizen scientist: Learning scientific writing, learning scientific responsibility*. Paper presented at the annual convention of the Conference on College Composition and Communication, Chicago, IL.

Carpenter, J. H. & Krest, M. (2001, March). *It's about the science: Students writing and thinking about data in scientific writing courses*. Paper presented at the annual convention of the Conference on College Composition and Communication, Denver, CO.

Carpenter, J. H. (2000, November). *'Practical advice': Reconsidering the rhetoric of the US Forest Service's Primer of Forestry (1899)*. Paper presented at the annual convention of the National Communication Association, Seattle, WA.

Carpenter, J. H. (1999, November). *The prospects and problems of authorized discourse: Gifford Pinchot and the Forest Service*. Paper presented at the annual convention of the National Communication Association, Chicago, IL.

Carpenter, J. H. (1999, March). *The epideictic dimension of technical communication: Gifford Pinchot's forestry*. Paper presented at the annual convention of the Conference on College Composition and Communication, Atlanta, GA.

Carpenter, J. H. (1998, April). *Beyond professional, legal and moral: Toward a technical communicator's environmental ethic*. Paper presented at the Association of Teachers of Technical Writing 25th anniversary meeting, Chicago, IL.

Carpenter, J. H. (1997, May). *Speaking of technical communication: Orality in the technical communication classroom*. Paper presented at interact@toronto.ca: 44th International Technical Communication Conference, Toronto, Ontario, Canada.

Carpenter, J. H. (1997, March). *Graduate students, composition, and the accountability of practices to meanings*. Paper presented at the annual convention of the Conference on College Composition and Communication, Phoenix, AZ.

Carpenter, J. H. (1996, May). *The beginning technical communication teacher: Challenges of discipline, challenges of profession*. Paper presented at the 43rd International Technical Communication Conference, Seattle, WA.

Carpenter, J. H. (1996, March). *John Muir, geologist: Ethos and holistic ecology in the discourse of participatory science*. Paper presented at the annual convention of the Conference on College Composition and Communication, Milwaukee, WI.

PROFESSIONAL MEMBERSHIPS

Association for Writing Across the Curriculum
Council for Programs in Technical and Scientific Communication
Council of Writing Program Administrators
Conference on College Composition and Communication
International Network of Writing-Across-the-Curriculum Programs
Omicron Delta Kappa (undergraduate honor society)
Society for the Social Study of Science
Sigma Xi (science and engineering honor society)

My Teaching

My teaching philosophy is founded in one of the longest running educational reform movements in higher education in the US: Writing Across the Curriculum (WAC). WAC is based on the notion that writing is an integral part of the learning process throughout a student's education—not merely in required writing courses but across the entire curriculum. Further, it is based on the premise that writing is highly contextual and tied to a social group's norms of communication and ways of knowing. Teachers in my specialty (Writing in the Disciplines; WID) aim much of our instruction towards helping students learn those norms and ways, by leading them through analysis and composition of writing they likely will do after entering their disciplines.

In my teaching, I focus on guiding students toward the conventions of scientific discourse, moving beyond the demands of basic literacy. For my students to learn about the context into which their scientific writing will be read, I aim to engage them in their own learning, move them to critical thinking about the texts they are composing, and guide them to see writing not as pure mechanics but as rhetorical choices.

In order to help students successfully learn these tasks, I've developed learning activities designed to build students' "multiple literacies" (Cook 2002). The concept of multiple literacies has been explored by writing teachers in STEM (including me; see Carpenter 2012). In essence, such writing instruction is aimed at teaching students a number of things:

Learning to write (LTW): Effective writers are those who have learned to write across a variety of rhetorical situations, for a variety of audiences, and for a variety of purposes. LTW exercises are metacognitive practices, and require students to write with attention to the conventions of a rhetorical context (i.e. within the genre and discourse conventions of a specific community) and to move through a multi-draft writing process. Note that word choice and grammatical correctness are important, but for a writing class to have an abstract focus on the "rules" of grammar and style, without any connections to sociorhetorical context is ineffective, archaic pedagogy.

Simply put, I see all my classes' assignments—including genres like literature reviews and research proposals, as well as multimodal projects like posters—as serving LTW. My students write in every class meeting, read each other's writing, and discuss the rhetorical nature of writing.

Writing as a process: For writing that will be graded, the writing process is long and complex, with the writer revising in response to developing ideas, reader feedback, and a growing understanding of the rhetorical situation. Scaffolding students' writing processes often leads to text that displays an increase in the depth of thought, an awareness of audience, and attention to style and editing. Practices that assist students in developing an effective writing process include class discussion of writing as a process, peer review of early drafts, teacher feedback to early (ungraded) drafts, and the assignment of reflective cover letters turned in with final drafts that detail the writer's process.

In all my classes, I guide students through this process by introducing them to the tasks of invention, research, organizing, drafting and revision. After assigning a literature review, I lead students through investigation of topics addressable by critically assessing the status of researchers' studies, then through the process of developing a research question. Norlin librarians guide students through critically investigating the journals, and together we aid them in "reading like a reviewer"—to note specifics about a study's methods and results, but also to think about how researchers choose information to support their study. Students are taught to store their sources electronically via Zotero. When they have a sufficient number of readings (>20) I lead them through an organizational schema. To assist with the drafting process, we do learning activities in class to synthesize the points they raise about the studies into a coherent, cohesive, succinct draft—followed by instruction in ways to critically read and revise your writing.

Writing as discursive versatility: Texts are dynamic and respond to the goals of the writer(s), the reader(s), and a wider social context, which may include situations, culture, language, genre conventions, and other texts. In order to write effectively, students need to think rhetorically, understanding that all aspects of writing—from voice, to organization, to stylistic conventions—are affected by the rhetorical situation. Practices that assist students in developing rhetorical thinking include genre analysis (comparative analysis of typified texts written within a discipline), rhetorical analysis (examining arguments in disciplinary texts to learn the rhetorical patterns of argument in a discipline), and peer review.

In my classes, these skills are developed in many ways. For instance, I prompt my students to critically read journal articles, enabling them to recognize how scientists attempt to persuade readers when they report their studies. This semester I facilitated this by requiring students to read Watson and Crick's 1953 *Nature* piece on the structure of DNA. In class, I guided students through "reading like writers" to recognize how Watson and Crick's words were likely strategically chosen to devalue competing models of DNA, as well as to evoke support for their own.

Writing as a mode of learning: Writing has long been recognized as a key method to enhance learning processes. Writing makes thinking visible, allowing learners to reflect on their ideas. Further, writing facilitates connections between new information and old, and among areas of knowledge across multiple domains. In practice, writing-to-learn (WTL) activities are informal, ungraded, and designed to focus on a particular learning outcome.

WTL serves many purposes in my classes; activities such as freewriting, reading responses, online message exchanges, and group collaboration all aim toward enhance students' learning. For example, to aid students in "making meaning" of the IMRaD genre, I ask them to locate and read a journal article, and to write responses to a series of questions about what content its authors presented. Students then move into groups to discuss what they in their readings. I guide their attention to noted similarities and differences. After group discussion, they report their findings to their classmates, in order to prompt discussions of the genre. This leads to conversations about how the conventions of the genre, as well as the subtle shifts in language and content reflect rhetorical situation into which a research report is placed.

References

Carpenter, J. H. (2012). A layered literacy framework for scientific writing pedagogy. [Internet]. *Currents in Teaching and Learning* 4(1), 17-33. Available from: <http://worchester.edu/currents>

Cook, K. C. (2002). Layered literacies: A theoretical frame for technical communication pedagogy. *Technical Communication Quarterly*, 11, 5-29.

My Service Roles/Accomplishments Since Last Reappointment

EBIO Department

Advisor for Writing Instruction

- Responsible (together with new hire, Stephanie Renfrow) for the ongoing revision/fine-tuning of EBIO's undergraduate writing classes (EBIO 1940 and EBIO 3940).
- Conference one-on-one in the EBIO Writing Lab (KTCH 1B82), with students working on assigned papers, honors theses, posters and research proposals—including the 60+ students enrolled each semester in my classes as well as other students who visit during the Lab's open hours.
- Maintain connections with the Program for Writing and Rhetoric (PWR), such that EBIO's place within CU's writing curriculum is maintained.
- Managed expenses under writing courses' rotating budget (\$1000/AY) for class materials and other expenses.
- I'm always glad to talk with EBIO faculty about incorporating writing into their classes.

Internships Coordinator

- Sponsored 32 students' requests for course credits via enrollment in EBIO 3930 (Internship).
- Revised the EBIO 3930 Information Sheet/Application Form, to make it more compatible with electronic media such as Mac Preview, MS Office and DocuSign.
- Revised the Internships page on ebio.colorado.edu. Really, this is what I do every semester, as internship opening vary over time. I've taken to regularly posting links to emergent position openings, such that students can have an up-to-the-minute listing of opportunities to which they may apply.
- Establishing and maintaining connections with local organizations and businesses offering regular internship opportunities—including Thorne Nature Experience, Boulder Open Space, Butterfly Pavilion, Denver Aquarium, Denver Botanic Gardens, and Greenwood Wildlife Rehabilitation Center.
- Maintain a bulletin board outside my office door, posting current internship openings on an ongoing basis. (Please tell your students the board is outside KTCH 1B82.)
- I'm always happy to talk with students about internships.

Assisting with Posters

- Organizing and directing EBIO's Poster Fair. Reserve rooms, set up the sessions, and assist with writing in-class exercise handouts. Close to 300 posters have been displayed in each fair the last six semesters.
- Through the use of rotating budget (\$2250/semester) funds, reserved rooms for semesters' Poster Fairs, as well as discretionarily purchased materials for and performed maintenance on the poster printer.
- I always try to work one-on-one with students to produce the best posters.

Curriculum Committee

- Attended committee meetings to assist in the ongoing development of EBIO's undergraduate curricula, especially when conversation swings to coordination of writing and disciplinary instruction.

University of Colorado

Pre-Professional Advising

Acted within committee interviews (4 in AY 2017-18; 2 in AY 2018-19) of current students and recent graduates seeking admission to medical school. As such, I contributed to the content and development of Committee Letters, and served as something of an advisor. Sadly, this arm of CU Career Services was done away at the end of AY 2018-19.

National Organizations

Council for Writing Program Administrators (WPA)

Assisted the Funding Committee on reviewing proposals submitted for WPA grant support. As an editorial board member, I consulted on a quarterly basis with reviewers/board members of the journal *Programmatic Perspectives* to discuss reviewers' work, publishing priorities, and special issues.