# **Patricia W. Brannan**

# **ENGL 7755**

# **Dr. Erin Clark**

# **Philosophical and Historical Perspectives of Rhetoric and Medicine**

The intercommunication between rhetoric and medicine has been long and significant. However, at first glimpse, rhetoric and medicine appear to share few common themes as “one is the art involving persuasion with speech, and the other is the art of healing bodies with medicine” (Jouanna, 2012, p. 39). In the fourth century, Plato tried to separate the two disciplines by “attempting to discredit rhetoric and to demonstrate that it lacks the qualities of a true art, and he often compares it to medicine which he views as the model for a true art or techne (Roth, 2017, p.55). In his argument, Plato examines the Gorgias (Socratic dialogue) and further develops his argument by expressing that, “rhetoric as a mere “knack” or “skill” and an incomplete art are based on his early employment of rhetoric as a foil, the clear opposite of medicine (Roth, 2017). Other philosophers opposed Plato’s views. According to Jouanna (2012), “In the fifth century, Gorgias, in his Encomium of Helen, compared the power of speech on the soul with the power of drugs, on the body” (p. 39). This comparison oddly comingles the affective prose of speech with the science of medicine which are widely opposing themes. Yet, Petit (2023) also speaks of the association in her book, *Rhetoric and Medicine,* as one that “has been explored in some contexts, from antiquity onwards, with varying degrees of depth by Greek and Roman doctors who were well-known paradigms of scientific rhetoric, scientific setting the scene for later medical authorship, notably Byzantine, and Islamic” (p. 219). This research further demonstrates the interrelatedness of rhetoric and medicine from the beginning of recorded history.

 In the Socratic dialogue, Phaedrus, Plato ceases his attack on rhetoric and begins to allow space for what he called the possibility of an authentic rhetoric likened to the healing art of medicine (Roth, 2017). Plato’s stance in the Phaedrus was the birth of a new discernment of rhetoric and portrays its relationship to medicine.

Rhetoric and medicine share common themes, but paradigms and perspectives between the two fields are fundamentally different. I argue that in the writing of persuasive rhetorical articles about medical practices, rhetoricians need to offer an invitation to medical professionals to discuss ways of “knowing and seeing” regarding the often-criticized discourse of medical rhetoric and practice. Without a genuine invitation to participate, medical professionals would be hesitant to enter discussions with a field that is often subjectively critical of their practice and their scientific fundamentals. The differing perspectives of rhetoric and medicine sanction dissimilar goals and communication methods between the two would likewise be dissimilar. The primary goals of the medical field are to diagnose a patient’s illness based on research and scientific standards and prescribe a treatment plan to help the patient regain a healthy body. Often, particularly if the treatment is for an emergency, minimal communication between the medical personnel and the patient will take place.

Contrastingly, the primary goals of the rhetorician are to understand what is communicated through language (as with a medical patient) and how this is communicated. Rhetorical study of the medical field would focus on how physicians inform, persuade, and motivate patients, and whether this focus is altruistically or fiscally motivated.

When we analyze the way participants of each field are educated, the difference in discourse communication is readily apparent. Communication in the medical field is of necessity truncated and swift, whereas communication in the field of rhetoric takes time and is inspired by deep thought. A significant difference in the two fields is the differing educational models of student learning.

# **Educational Models**

Fountain (2014) asks, “how do newcomers in a professional group come to see according to the practices, values, and beliefs of that community?” (p.2). The difference in perspectives of rhetoricians and medical personnel is influenced by how each field receives formal education. "Rhetorical theory includes study of, among other things, epistemology, which is the study of ‘seeing’ or ‘knowing’ (Clark 2024). Analyzing when, and why, some relational conversations situated in different lived experiences are appropriate, and some are not, has long been of interest to rhetoricians, communication scholars, and philosophers (Goldsmith, 2004). The educational models representing how rhetorician professional vs medical professionals learn clarify why the different learning models result in different discourse modes.

Medical personnel learn by doing. “See one, do one, teach one” is a common theme in medical educational models. This model was developed for surgery and trauma medicine but quickly filtered into other healthcare educational programs. Halsted (1997) developed the model which directly “increases the responsibility of trainees” (p.1). This is one of the ways health care personnel learn to *see* and *know* how to care for patients. The patient is the primary responsibility, and medical staff take that responsibility seriously. It is impressed on students to do no harm to patients or allow any harm to come to the patients in our care.

Medical professionals learn “to see” and “to know” in much the same way Fountain describes in his book. Students in the medical field learn in classrooms and laboratories that, “have assemblages of multimodal displays, medical and institutional discourses, and rhetorical and embodied practices” (Fountain, 2014, pg. 2). Learning always involves the movement and action of professionals as they interact with bodies and medical equipment. Discourse in learning surrounds the anatomy and physiology of the human body. To learn to *see* anatomy, students use anatomical models, anatomy textbooks, student models, and actual patients. Thankfully, some fields, for example radiographers (x-ray technologists), only need to learn proficient knowledge about the skeletal system, digestive system, excretory system, respiratory system, nervous system, and the circulatory system. However, according to Fountain (2014), radiography students … “understood what I call representations not as a substitute for cadaveric specimens, but as a specialized lens that makes them visible in a new way. For those not trained in anatomy, x-ray representations are … just representations of bodies” (p.80). Healthcare students would struggle in comprehending Fountain’s meaning here because they are taught the physics behind how the “representative” x-ray images are formed, and the images are undeniably accurate replicas of the unique skeletal anatomy of the patient.

The ways of knowing and seeing are vastly different in a rhetorical education model. In describing rhetorical education, Schilb (1987) as cited in Glenn, et al. (2004), states:

Rhetorical learning in its infancy seems to be a passive process focusing intensely on the thinking process. The embryo of rhetorical learning often involves sustained, even laborious confrontation with the intricacies of texts—with the word “texts” applying to so-called primary sources, other histories of rhetoric, and even the revisionary historian’s own discourse. As the historian tracks back and forth between the possible difference within texts and possible difference within the world outside them, with not even the historian’s own works exempt from such determined oscillations, a revisionary history of rhetoric may indeed seem more the demonstration of a way of reading than the churning out of a product. (p.57)

Jill Swiencicki (2004) further describes the ways of knowing in rhetorical practice as thinking deeply about interesting themes among words and the contexts in which they are written. The rhetorician makes associations between these themes to encourage others to really look at what is happening in interactions between people and culture, and people and things, to emphasize, “differences, displacements, and disruptions” to further the direction of rhetoric education” (Schilb, 1987, p. 57).

As the rhetorical learning model evolves, it has grown to include the more active expression of technical and professional communication. Circa 1993, Slack, Miller, and Doak began to recognize the learning model of rhetoric as having power through the written word, thereby effecting active change through articulating how technical and professional communicators, “engage with power and use it to build relationships” rather than the lull of passivity (p. 312). For Slack, et al. (1993), definitions of the field are vital because clear “definitions create power and legitimacy” (p.313). Power and legitimacy lead to credibility and eventually acceptance of ideas and concepts.

# **Discordant Themes**

## **Rhetoric as a Mode of Inquiry**

Rhetoric has evolved to include both written and spoken text and has risen above traditional oratory to include persuasive foundations in human interactions (Derkatch & Segal, 2023). The success of persuasion is dependent on many factors: “the rhetorical strategies of the writer or speaker, the receptiveness of the reader or listener, and the context in which the speech takes place” (Derkatch & Segal, 2023, p. 138). Because the definition of persuasion is concrete rather than abstract, research situates well within ethnographic settings like medicine where interactions happen between practitioners and patients every day. Both the field of medicine and the field of rhetoric share in the need to use persuasive methods, indicating a common shared theme, but an impasse interrupts discourse when rhetoricians criticize healthcare communication modes from the rhetorician’s perspective. According to Derkatch & Segal (2023), “the goal of rhetorical criticism is a greater understanding of human action, while rhetorical theory as a whole has considerable explanatory power in a world in which we act upon each other by influence” (p.139). I believe that *meaning making* of the interactions between physicians and patients is not valid from the rhetorical perspective unless both contributors participate in the discussion.

## **Everyday Texts in Medicine**

The medical field is inundated with text and data. A few examples are patient educational pamphlets, patient charts, pharmacy prescriptions, patient information forms, consent forms, and insurance forms. This data is often close - structured for the patient and time consuming to modify due to the time constraints and rules regarding how long these artifacts must be kept. The only reasonable way to keep this amount of data is to streamline the forms. Derkatch & Segal (2023) lament in their article, *Realms of Rhetoric in Health and Medicine,* that medical journal articles are written in a heavily regulated and prescribed way. Healthcare research journal articles are required to be written using the (Introduction, Methods, Results, and Discussion (IMRAD) format. Healthcare as an institution is based on science and includes a unique language developed to communicate with other healthcare personnel in an efficient manner. Within the scientific community, it is believed that following a clear structured format is more effective in organizing and structuring research data and helps scientist do better quality research (Shiely, F., Gallagher, K., & Millar, S. R. (2024). Additionally, the structured format is believed to minimize errors, oversight, and ensure compliance with best practice research (Shiely, F., Gallagher, K., & Millar, S. R.). Medical students must read copious amounts of academic material, estimated seven to fourteen hours a week, and knowing the format is vital in keeping reading and comprehension time manageable (Shiely et al. 2024).

## **Medical Metaphors and Models**

Metaphors are an often-used rhetorical device and have found recognition in the medical field. The most often cited works of a metaphor in a medical context is the article *The Egg and the Sperm: how Science has Constructed a Romance Based on Stereotypical Male-Female Roles* written by the anthropologist Emily Martin (1991). In a classic article in gender studies, Martin argues that the “deeply held cultural beliefs about masculinity and femininity” resulted in the gendered assumption of the sperm and egg being recast as biological assumptions about active sperm racing and competing to penetrate a passive egg” (Derkatch & Segal, 2023, p.138). As a health care student in the 1970s, I do not believe rhetorical metaphors were prominent in my instruction. The textbooks from which I learned were scientific and clinical, backed by science, and did not promote the idea of a romance between the egg and the sperm. The following content from a 2021 textbook outlines the content being taught in a scientific and medical program.

According to Siu, et al. (2021): the sequence of the sperm fertilization of the egg is explained:

During sexual reproduction, the oocyte, and sperm fuse to generate a new and unique embryo. The journey of a sperm to an egg end in the ampulla of the female oviduct. From there, the sperm must overcome a number of physical and biochemical barriers. After undergoing the acrosome reaction and binding the ova, the sperm penetrates through the cumulus oophorus cells and the zona pellucida (ZP) to reach the perivitelline space (PVS) and oocyte membrane. Upon fusion of the sperm and egg membranes, the sperm nucleus and organelles are incorporated into the egg cytoplasm.

 If you compare Martin’s (1991) depiction of the sperm and egg romance to Siu’s (2021) depiction, feminism seems to have made an impact on Siu’s description of the sperm and the egg. This most current description of the union of sperm and egg gives equivalent amount of activity in the process.

Although I do not agree with Martin in her observation of the intentional use of the romance metaphor in this circumstance, I do agree that dominant cultural perceptions may have affected many fields. I propose that many medical texts may be written with the layperson and non-medical students in mind.

The field of medicine utilizes a flagship anatomy textbook that was first published by Henry Gray in 1848. The text has been used for over one hundred years to teach medical professionals the finer points of anatomy. I have provided an excerpt of the sperm and egg union from Gray’s anatomy here.

Fertilization normally occurs in the ampullary region of the uterine tube, probably within 24 hours of ovulation. Very few spermatozoa reach the ampulla to achieve fertilization. They must undergo capacitation, a process that is still incompletely understood, and which may involve modifications of membrane sterols or surface proteins. They traverse the cumulus oophorus and corona radiata, then bind to specific glycoprotein receptors on the zona pellucida, ZP3 and ZP2. Interaction of ZP3 with the sperm head induces the acrosome reaction, in which fusion of membranes on the sperm head releases enzymes, such as acrosin, which help to digest the zona around the sperm head, allowing the sperm to reach the perivitelline space. In the perivitelline space, the spermatozoon fuses with the oocyte microvilli, possibly via two disintegrin peptides in the sperm head and integrin in the oolemma. (Chapter 8, p. 163, para 5)

# **Concordant Themes**

In their introduction to the edited collection of articles entitled, *Interrogating Gendered Pathologies ed.* by Erin A. Frost *&* Michelle F. Eble*, “*promise to privilege experiential evidence “in the same way traditional medical knowledge is oftenprivileged” (p. 15). Viewing healthcare rhetoric through the lens of the patient’s lived experience is less objectionable and more acceptable to the healthcare practitioners’ sensibilities and will encourage better communication and more appropriate responses.

Chapter one written by Cathryn Molloy (2020), introduced several brief case studies in which the diagnosis of women’s pathologies was biased by the physician’s perspective of women’s health issues. One case study regarded the ongoing symptoms of a young high school student, Emily Deaton, and her struggle to discover the cause of her joint pain, dizziness, and fatigue. Emily’s physicians persuaded her that her symptoms were psychogenic (Molloy, 2020), meaning psychological stressors were causing her to have physical symptoms. Despite this diagnosis, Emily’s symptoms continued, and her physicians continued to doubt her belief that something was wrong with her body. Later, physicians diagnosed Emily as having a pathology called postural orthostatic tachycardia syndrome (POTS) that was causing her symptoms (Molloy, 2020). I am familiar with how Emily Deaton’s physician took her credibility. When I was sixteen, I experienced several episodes of extreme dizziness and almost fainted many times. My physician quickly diagnosed my *pathology* as being that of a young girl who was dieting, stressed, and losing weight too fast. When the symptoms did not resolve on their own, my physician ordered bloodwork that showed I was extremely anemic. This was an easy fix with medication, but I had suffered for almost six months prior to the blood-work report establishing a diagnosis. Emily spoke for me, too, when she stated that, “Ultimately, doctors need to realize that patients know their bodies best” (p.31).

Jackie Derritt (ENGL 7755-Week 13 Post-November 13, 2024) added a lived experiential view to this conversation in an online post. Jackie voiced concern to her gynecologist regarding symptoms after switching to a new birth control method called Nexplanon. She expressed to the nurse that she was having pain and mental health changes since the prescription change. The gynecological nurses tell her they do not know what factors are making me feel that way, indicating her symptoms were not drug side effects, thereby nullifying Jackie’s symptoms. Birth control options often have side effects, and each patient’s body is different. Jackie thought the medical staff should have offered another option for birth control. In discussions with other women who had used birth control options, Jackie learned that many did not work well with their bodies. Jackie reiterated her point in her post with a quote, “I believe the practice of experiential knowledge in this case to be both beneficial and validating as I not only get to have an active listener try to understand what the medicine is putting me through, but contribute to helping others understand” (Gerdes, J., 2023, p., 97).

Derritt (2024) continued by expressing:

In a discussion post from the ENGL 7755 course, a student wrote, “Something I really resonated with in your post (and also felt bad for) was your mentioning of identifying with "... ways these women were considered as not having credibility in making meaning of health or illness in their bodies." In one of our very early discussions, I talked about how during Covid, I was having a lot of generative issues that no urgent care doctor (as I didn't have health insurance) could seem to figure out. I consistently mentioned the non-stop pain I had felt for months and recalled crying because of its impact and out of frustration, as well as having my experiences being brushed off by these male doctors through telling me they either weren't sure, assigning yet another diagnosis, or simply waving me off with another prescription (Derritt, November 13, 2024).

Healthcare experiences of individual patients often provide evidence of the absence of empathy during the physician/patient interaction. Sharing these experiences through written texts will bring to light the number of times these communication breaches occur. Each patient is an individual with unique bodies and pathologies, and many healthcare professionals are aware of this, truly listen to the patient, and offer empathy. More medical professionals need to “see” healthcare issues through the lens of the patient’s lived experiences to encourage better communication, more appropriate responses, and more accurate diagnoses.

## **Themes of Intersectionality**

Another field to consider as a juncture between rhetoric and medicine is the field of the Medical Humanities (MH). The MH field is more established than the emerging RHM field and has roots in the 1960s. Toulmin and Cassell date the birth of the medical humanities critique to the early 1960s, “When social and professional criticisms produced curricular change” (Wailoo, 2022, p. 196). Women and students from minority backgrounds entered medical schools in the next ten years, and initiated changes by pressuring for medical humanities classes because they believed it to be “essential that the problems of poverty, racial bias, and political oppression be relevant” (p.196). MH scholars began to focus on physician training programs and pressed for the addition of curriculum skills of close observation, empathy, compassion, and patient listening skills (Wailoo, 2022). The medical humanities field further expanded in the 1980s and 1990s with the publication of journals, associations, and teaching initiatives framed from a patient-centered philosophy, and continued to expand in the early twenty-first century with the fast-paced growth of medical humanity coursework in undergraduate college programs (Wailoo, 2022).

The continually evolving field of rhetoric of health and medicine (RHM) and the established field of medical humanities (MH) support mutual goals in their rhetorical efforts aimed towards medicine (Hannah and Arduser, 2018). Both entities are passionate about improving the practice of medicine (Angeli, 2015) to improve patient care and health (Meloncon, L., & Frost, E. ,2015). Both the MH and RMH focus on the medical field from the patient’s lived perspective, rather than focusing solely on disease diagnosis.

Although both RHM and MH are motivated by similar goals and aspirations, there are key differences. RHM is also framed as “health communication” (HC) and has found a disciplinary home in communication studies and scholarly publishing” (Meloncon & Frost, 2015, p. 8). RHM has also “aligned itself with the fields of rhetoric, composition, and technical communication to pursue the common goal of “suggest[ing] alternative discursive practices” in healthcare workplaces” (Heifferon & Brown, 2000, p. 247).

According to Podolsky & Greene (2016) medical humanities affiliates itself with the literary arts and writes from within the medial space, “while RHM has “queried/ critiqued/uncovered “medicine’s epistemology, culture, principles, practices, and discourses” (Scott et al., 2013, p. 2), from locations situated both inside and outside of medical environments. Despite the differences, there is promise that these three entities will benefit at the intersection of the medical field, the medical humanities field, and the rhetoric and medicine field to engage in research and improvement in the patient’s experience in healthcare.

## **Conclusion**

Rhetoric and medicine have existed alongside each other for centuries with minimal interaction. In this essay, I have attempted to point out discordant themes, concordant themes, and intersections between the medical field, the RMH field, and the MH field. The RMH field has written critical articles about communication between doctors and patients. Many of the articles are written from the perspective of an outsider looking into the field who does not understand the complexities of the medical field or the differences in their educational models. Recently, more articles have been written from the lived perspective of the patient, and these accounts are much more truthful and valuable. While investigation is warranted, the information retrieved would be much more valued if a health care practitioner were given a seat at the table and the chance to share in the discourse.

The future of communication between the medical field, RMH field, and MH field will be more inclusive if an alliance is formed at the intersection of these fields with patient-centered care. An alliance would promote better patient care and make communication more effective between the contributing parties. Hopefully, future cooperation between the fields will bring about necessary changes in patient care.

References

Adam, R. (2017). *Embodied discourse: Revising Plato’s stance on the connections between rhetoric* *and medicine.* Akropolis (Podgorica. Online)

[https://www.researchgate.net/publication/332837808\_Embodied\_Discourse\_Revisiting\_Plato's\_Stance\_on\_the\_Connections\_between\_Rhetoric\_and\_Medicine](https://www.researchgate.net/publication/332837808_Embodied_Discourse_Revisiting_Plato%27s_Stance_on_the_Connections_between_Rhetoric_and_Medicine)

Angeli, E. L. (2015). *Three types of memory in emergency medical services communication*. Written Communication,32(1), 3–38. doi:10.1177/0741088314556598

Burry, J., & Melonçon, L. (2024). Rhetoric of health and medicine. Oxford Research Encyclopedia of Communication. Retrieved 6 Nov. 2024, from

https://oxfordre.com/communication/view/10.1093/acrefore/9780190228613.001.0001/acrefore-9780190228613-e-1442.

Catita, M., Aguas, A., & Morgado, P. (2020). *Normality in medicine: a critical view.* Philosophy, Ethics, and Humanities in Medicine: 15, Article number: 3. Open Access.

Danni Liao, Lindsay F. Kelpinski & Lisa M. Guntzviller. (2023*).* [*Using normative rhetorical theory to identify dilemmas and responses in internal medicine patient-provider communication*](https://www.tandfonline.com/doi/full/10.1080/10410236.2021.2021691). Health Communication 38:8, pages 1581-1590

Derkatch, C., & Segal, J. Z. (2023). *Realms of rhetoric in health and medicine.* (Version 1). Toronto Metropolitan University. <https://doi.org/10.32920/24660444.v1>

Derritt, J. (2024, November 13). Re: Women’s healthcare [Discussion post]. East Carolina University Canvas

Gerdes, J. (2023). *[Review of the book Interrogating Gendered Pathologies ed. by Erin A. Frost & Michelle F. Eble].* Rhetoric of Health & Medicine 6(3), 1-5. [https://muse.jhu.edu/article/917535](https://muse-jhu-edu.eu1.proxy.openathens.net/article/917535).

Gettings, P.E., Chernichky-Karcher, S., Iannarion, N.T. (2021) *A qualitative evidence synthesis of normative rhetorical theory scholarship.* Routledge. https://doi.org/10.1080/23808985.2021.1945480

Glenn, C.J., Johnson, N., Lyday, M.M., Sharer, W.B., Denman, W.N., Miller, T.P., Logan, S.W., Swiencicki, J., Kates, S. & Lane, R. (2004). *Rhetorical education in America*. University of Alabama Press.

Goldsmith, D. J. (2019). *Normative rhetorical theory*. In S. R. Wilson, & S. W. Smith (Eds.), Reﬂections on interpersonal communication research (pp. 211–230). Cognella.

Goldsmith, D. J. (2004). Communicating social support. Cambridge University Press. <https://doi.org/10.1017/cbo9780511606984>.

Gray, H. (2013). *Gray’s Anatomy: With original illustrations by Henry Carter*. Arcturus Publishing. <https://archive.org/stream/GraysAnatomy41E2015PDF/Grays%20Anatomy-41%20E%20%282015%29%20%5BPDF%5D_djvu.txt>

Hannah, M. A., & Arduser, L. (2017). *Mapping the terrain*: *Examining the conditions for alignment* *between the rhetoric of health and medicine and the medical humanities.* Technical Communication Quarterly, *27*(1), 33–49. https://doi.org/10.1080/10572252.2017.1402561

Heifferon, B., & Brown, S. (2000). *Guest editors’ column.* Technical Communication Quarterly, 9(3), 245–248.doi:10.1080/10572250009364698

Henning, T. & Bemer, A. (2016). *Reconsidering power and legitimacy in technical communication: A case for enlarging the definition of the technical communicator.* Journal of Technical Writing and Communication, Vol. 46(3) 311-341. Sage. <https://journals.sagepub.com/doi/pdf/10.1177/0047281616639484> DOI: 10.1177/0047281616639484.

Hsu, V. J. (2024). *Trans tricksters, looping effects, and gender diagnoses as containment.* Rhetoric of Health & Medicine*, 7*(1), 17-45. <https://doi.org/10.5744/rhm.2024.1002>

Jouanna, J., & Allies, N. (2012). *Rhetoric and medicine in the* *hippocratic corpus.: A contribution to the history of rhetoric in the fifth century.* In P. van der Eijk (Ed.), *Greek Medicine from Hippocrates to Galen: Selected Papers* (pp. 39–54). Brill. <http://www.jstor.org/stable/10.1163/j.ctt1w76vxr.8>

Martin, E. (1991). *The egg and the sperm: How science has constructed a romance based on stereotypical male-female roles.* The University of Chicago Press. <https://www.jstor.org/stable/3174586>

 Meloncon, L., & Frost, E. (2015). *Charting an emerging field: The rhetorics of health and medicine and its importance in communication design*. Communication Design Quarterly, 3(4), 7–14. doi:10.1145/2826972.2826973

Petit, C. (2023). *Rhetoric and medicine: Introduction*.Rhetorica, *41*(3), 219-224. https://doi.org/10.1353/rht.2023.a910298

Podolsky, S. H., & Greene, J. A. (2016). *Are the medical humanities for sale*? *Lessons from a historical debate*. Journal of Medical Humanities, 37(4), 355–370. doi:10.1007/s10912-014-9301-9

Rief, J. J. (2021). Rhetoric of Health and Medicine As/Is: Theories and Approaches for the Field: edited by Lisa Melonçon, S. Scott Graham, Jenell Johnson, John A. Lynch, and Cynthia Ryan, Columbus, OH, The Ohio State University Press, 2020, vii–255 pp., $34.95 (paperback), $119.95 (hardcover). *Quarterly Journal of Speech*, *107*(4), 487–491. <https://doi.org/10.1080/00335630.2021.1980946>

Scott, B., Segal, J. Z., & Keränen, L. (2013). *The rhetorics of health and* *medicine: Inventional possibilities for scholarship and engaged practice.* Poroi, an Interdisciplinary Journal of Rhetorical Analysis and Invention. Retrieved from: http://ir.uiowa.edu/poroi/vol9/iss1/17/

Shiely, F., Gallagher, K., & Millar, S. R. (2024). How, and why, science and health researchers read scientific. <https://doi.org/10.1371/journal.pone.0297034>

Schilb, J. (1987). *Differences, displacements, and disruptions: Toward revisionary histories of* *rhetoric*. *Pre/Text*, *8*(1–2), 29-44.

Schilb, J. (1992). Traveling theory and defining of new rhetorics. Rhetoric Review. 11:1, 34-48, DOI:10.1080/07350199209388985

Siu, K. K., Serrão, V. H. B., Ziyyat, A., & Lee, J. E. (2021). *The cell biology of fertilization: Gamete attachment and fusion.* The Journal of cell biology, *220*(10), e202102146. <https://doi.org/10.1083/jcb.202102146>

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8406655/>

Slack, J. D., Miller, D. J., & Doak, J. (1993). *The technical communicator as author meaning,* *power, authority*. Journal of Business and Technical Communication, 7(1), 12–36.

Wailoo, K. (2022). *Patients are humans too: The emergence of medical humanities.* Daedalus; 151 (3): 194-205. doi: https//doi.org/10.1162/daed\_a\_01938