

INTS 301-001
2017

Science in the News

Spring

Time/Place: Mondays, 7:20-10, Planetary Hall 206

Instructor: Dr. Kimberly Klinger, PhD, Cultural Studies; professor, School of Integrative Studies, Global Affairs

E-Mail: kklinger@gmu.edu

Office Hours: As an adjunct, I do not have an office, so please reach me via email for any questions, or to schedule a meeting on a Monday before class.

Course Description (from the Catalogue): Examination and discussion of the current trends in science as reported in the popular media. Students learn how to evaluate the science that is reported so they may become informed consumers; discuss how scientific advancement might shape society by looking at how science and society have changed together over time; and use examples from the past to discuss future trends.

Course Description (from me): You will become an informed consumer of science-related information, able to use the science that others create. You will increase your critical thinking abilities to understand, analyze and evaluate the scientific claims in news stories, on websites, in movies, etc.; increase your capacity to communicate ideas/opinions that involve scientific data and concepts; and increase your willingness to speak out with confidence and precision regarding scientific data and concepts.

Objectives: By the end of this course you should be able to:

- interpret and critically analyze scientific information distributed by the mass media
- use oral and written communication skills effectively communicate scientific information, and to correct typical myths and common errors regarding science
- discover new personal interests involving science
- understand that science is an institution, immersed in wider social beliefs and practices
- understand and explain some key scientific concepts

Text: *Science Matters* by Robert M. Hazen and James Trefil, 2nd Edition, Anchor Books, June 2009. Not in the bookstore - available online very cheaply at [Amazon](https://www.amazon.com/Science-Matters-2nd-Edition-Anchor-Books/dp/0393978310).

Other Readings: Any additional readings will be posted to BlackBoard in the readings folder or linked on the schedule.

Additional Course Materials: A notebook

Required (free) Subscription: All students must subscribe to "Smart Brief," a free e-newsletter produced by Sigma Xi in conjunction with "American Scientist Online." The newsletter provides a digest of the top stories from "Science in the News," and is an excellent

source of articles for this course. It is a daily newsletter, not weekly as it used to be, so be prepared for these emails. To subscribe, click [here](#). If you have trouble receiving emails, click [here](#) for the archive.

Course Website: Blackboard. I will post course materials and make all announcements, which will also be sent via email, here. Please check it regularly, and be sure you are following the assignments schedule – I will not be handing out paper copies. I reserve the right to change the schedule, but I will always keep you up-to-date. Thus...

GMU email: Students must use ONLY their Mason email accounts to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more information.

SIS Course Competencies: Critical Thinking, Strategic Problem Solving, Communication, and Group Interaction. See <http://integrative.gmu.edu/current-students/competencies> for their descriptions.

Important Course Policies:

Cell phone and laptop usage: **All cell phones must be turned off and put away in a backpack or bag for the entire duration of class.** There are no exceptions to this policy and I will put my phone away, too. Laptop use is fine due to the nature of the class, but there is to be no outside work done, and no watching videos, randomly Googling things, or using social media. I will ask that screens be put down for some parts of the class, so that we can all work together.

Academic integrity: All work done must be your own. If you are referring to the work of others, whether in direct quote or paraphrase, you must cite all sources properly, according to whatever style guide you choose. Please refer to the [Owl at Purdue](#) for help if you are not certain. If you do not cite your sources and format your bibliographies properly, your grade will suffer, and/or you may be in dangerous territory re: plagiarism. **I take proper attrition very, very seriously.** Be sure you are following your style guide to the letter; the Owl website makes it easy to check your work.

Food: I don't mind snacks, but please, no large meals or smelly things, out of respect to your classmates and to me.

Absences: Since this class only meets once a week, and has two weeks without meetings, I will only allow **one** excused absence, such as illness, for the semester. Any more beyond that, and your grade will be in jeopardy. We cover a lot of ground week to week; don't skip.

Late work: The almost-weekly news briefing packets are due to class, so no late work will be accepted for this assignment. For your papers, I will reduce the number of available points by

15% for every day you are late. So...don't be late. **No extensions** will be granted except in the very, very rare case of serious and documented health or personal emergencies. (A cold isn't serious, nor is an out-of-town function.)

Assignments

News Briefing Packets:

(8 of them; 10 points for each post to Blackboard plus 10 points each for each of two presentations, for 100 points total)

In 8 of 15 weeks – see schedule for due dates – you will find an online news story and write a one-half to one page “briefing” sheet on the article containing the URL, a title, a short synopsis (that you have written – not one that’s from the article), and some notes you could use to present an informal report on the article to the class. These notes are not to be paragraphs that you read but just snippets or bullet points, like you might put on a 3x5 note card.

Twice in the semester you will be called upon to give an informal presentation on the article, using, naturally, the briefing packet you prepared.

“A New Study Shows...”: due Feb 27

(60 points)

You will provide analysis of one scientific research study as reported in the scientific literature, plus an assessment of how both science-focused news sources (a list is provided for you on BB should you need help) and mass-media news articles and sources reported on that particular topic.

The first challenge is to find an article about new research findings. Articles in Proceedings of the National Academy of Sciences (<http://www.pnas.org>) are a good source. However, you can go backwards, too: start with the mass media report, and find the study they are citing by searching the GMU library databases.

You will describe the research in your own words, discussing research procedures as well as conclusions. You will then find mass-media reports related to the topic, and describe how that sort of science is being transmitted into the general culture.

In your paper of **at least 3 but no longer than 4 pages**, be sure to:

- identify the article on which you are reporting
- identify the specific science question/problem discussed in the article, and/or state what specific problem/hypothesis was being addressed by the research
- describe the research: how the scientists reached their results/conclusion, and what alternatives did they consider/disprove. If you see a potential limitation in the research that was not highlighted in the report, then identify it (i.e., “it appears the research subjects were all

college-age males, so the recommended treatment for athlete's foot may not be as relevant to females or other age groups").

- describe how one science-focused news source reports on the research, and
- describe how mass media, with at least two different sources, reports on the research.
 - how was it reported? What was the focus? What was left out? How was it contextualized?
- describe how the research might affect society today, or in the future. What is the potential impact of the results, and who might be affected? How do you think mass media may incorporate the new science in future news coverage?
- think about why the media reported the way they did – what's flashy/sexy about the research? What significance might it have for their audience? Etc.
- carefully cite all sources. A properly formatted bibliography should be attached at the end of your paper. This is in addition to the required page length of the essay.

Museum/Zoo/Aquarium Interpretation: due April 10 (50 points)

We live in an area rich in science-related facilities that are open to the public, at low cost. Some sites are even free, such as the National Zoo. You can get broad exposure to various aspects of science at these facilities – but what if you were in charge? What would you do if someone gave you \$10,000 to upgrade some aspect of the interpretation at a local science facility?

This is a written assignment that can include a photo/video/podcast component. It will be based on a field trip you will make in person to a local museum/zoo/aquarium. To give you a little extra time, there will be **NO CLASS on March 27**. Make arrangements to visit a place, examine its interpretation of some species, item, or scientific concept, and then identify how you might supplement/replace the material with your own content. You can visit places on your own, or with others in the class, but make arrangements on your own. (GMU will not provide transportation or cover entrance fees.)

If you really got the assignment to upgrade the science-based education at a specific site (maybe a rich relative made a specific bequest in a will, and required that you be involved), just what would you do with \$10,000?

Describe what you saw on your field trip in a 1-page written report, double-spaced in a 12-point font with no more than 1-inch margins, and submit your own proposal and draft brochure/web site/exhibit design/or other form of interpretation. Be sure to identify in your proposal who is your target audience, and how you would measure if whether your interpretive approach was more "successful" than the facility's existing interpretation.

Your hypothetical budget to implement your proposal is \$10,000, so be realistic. You won't get to travel to Africa and do a safari for a year to collect new video imagery of hippos, or visit Antarctica to drill new ice cores.

Remember, you're re-examining interpretation that was produced by highly-paid professionals at the Smithsonian, National Academy of Sciences, etc. Don't dismiss existing museum/zoo/aquarium material as low-quality "dumbed down" content, or assume it is outdated. Pay attention to the real-world challenges of an exhibit designer who has to communicate to many cultures. One constructive approach might be to identify a niche audience that the current material ignores, and target your proposal to expand upon rather than replace the generic material already implemented by the professionals.

Science Now Presentation and Research Paper: due May 1

(60 points for paper, 60 for presentation, for 120 points total)

Now that you've seen both good and bad science reporting, it's your turn to try it: small groups of students will investigate in-depth a current scientific issue, and report on it. There will be two products to this effort. First, each student in the group will write an independent, well-referenced paper on the selected scientific topic of length **at least 3 but no longer than 4 pages**. You will use a range of sources: journal articles, books, science-focused magazines/websites, and media sources. A properly formatted bibliography should be attached at the end of your paper. This is in addition to the required page length of the essay. Each group should choose an issue that has several sub-issues or facets, so that each person can write on a specific aspect of the issue. In addition, each group will create a skit in the style of a news broadcast that synthesizes this research, discusses the topic, presents background information, describes the current controversy, etc., and both informs and entertains the class.

Demonstrate your capacity to match Walter Cronkite regarding space news coverage, Sanjay Gupta regarding medical news coverage, or Al Roker regarding weather: exercise your science presentation skills by pretending to be a team of TV reporters covering breaking news with a heavy component of science content. Be creative. TV news is all about hot-topic controversy and disagreements between experts, not about background education and the rational process of scientific discovery – but be "fair and balanced" when you present the issue, background information, current controversy, etc. Give us the sexy AND the scientific.

We will create groups early in the semester, and review topics/outline before making actual presentations (with video/audio, for those groups who can get it together...) on the last day of class. Each group will have only about 10-15 minutes, so be sure to rehearse, and wow us.

Science Literacy Essay: due May 8

(50 points)

Students should keep all of their research, articles, analyses, and essays over the course of the semester. At the end of the term you will look back over all of your class materials and write a **two to three page** essay discussing any changes in how you perceive science in the news

and your own scientific literacy. You should include a discussion of your progress on two of the course competencies: pick one from Strategic Problem Solving and Critical Thinking and one from Communication and Group Interaction (<http://integrative.gmu.edu/current-students/competencies>). Any sources, if used, must be cited, as per usual, and a bibliography attached.

Quizzes on your course readings and the class discussions:

(80 points)

There will be 8 ten-point multiple choice/true-false/short answer quizzes based on the assigned readings and the class discussions/activities. Quizzes are given at the start of class, but **I will not announce the dates in advance**, so keep up with the reading schedule and come to class.

Class Participation:

(40 points)

Please show up to class regularly and on time, and be prepared to participate fully in discussions and group work.

Grade Breakdown:

Grade Ranges (in %)			
A+	98-100	C+	77-79
A	93-97	C	73-76
A-	90-92	C-	70-72
B+	87-89	D	60-69
B	83-86	F	Less than 60
B-	80-82		

Assignment	Points	Per Cent	
Weekly News Briefing Packets	80	16%	8 at 10 points each
Presentation on Briefing Packet	20	4%	two times at 10 pts each
"A New Study Shows..." Essay	60	12%	
Museum/Zoo/Aquarium	50	10%	
Quizzes	80	16%	8 at 10 pts each
News "Skit" - Research Paper	60	12%	
News "Skit" - Presentation	60	12%	
Science Literacy Essay	50	10%	
Class Participation	40	8%	
TOTAL	500	100%	

Honor Code: GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. Except when explicitly stated to the contrary, all work is to be your own work. Evidence of violation of this policy constitutes grounds for referral to the University Honor Committee.

Disability Services: If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS: <http://ods.gmu.edu>

Counseling and Psychological Services (CAPS): (703) 993-2380: <http://caps.gmu.edu>

The University Catalog, <http://catalog.gmu.edu>, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at <http://universitypolicy.gmu.edu/>. All members of the university community are responsible for knowing and following established policies.

SIS Commitment to Diversity:

The School of Integrative Studies, an intentionally inclusive community, promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion or irreligion, age and disability.

- We value our diverse student body and desire to increase the diversity of our faculty and staff.
- We commit to supporting students, faculty and staff who have been the victims of bias and discrimination.
- We promote continuous learning and improvement to create an environment that values diverse points of view and life experiences.
- We believe that faculty, staff and students play a role in creating an environment that engages diverse points of view.
- We believe that by fostering their willingness to hear and learn from a variety of sources and viewpoints, our students will gain competence in communication, critical thinking and global understanding, and become aware of their biases and how they affect their interactions with others and the world.

Important dates:

Last day to drop with no tuition penalty: Mon Jan 30

Last day to drop with a 33% tuition penalty: Mon Feb 13

Final Drop Deadline (67% tuition penalty): Fri Feb 24
Selective Withdrawal Period: Mon Feb 27 – Fri Mar 31
Spring Break: Mon Mar 13 – Sun Mar 19