

BB1025 Project: The Truth Behind the Headlines

The goals of this project are:

- to encourage students to think critically about health information presented in the popular media
- to apply your knowledge of the basic function of human organ systems to understanding a human disease state
- to gain experience locating and reading appropriate primary scientific literature
- to gain experience in analyzing primary scientific information and drawing conclusions from potentially contradictory data
- to improve skill in accurately interpreting scientific information for a non-scientific audience

Each group will research a health “fact” they may have heard in the media, and will create a short (2-4 minute) video about their findings. A list of potential topics is attached, or students may propose their own topics. You will use both popular media sources (newspapers, magazines, the Dr. Oz Show, etc) and primary scientific literature (journal articles) to clarify the facts and obtain the best scientific evidence to support or refute your chosen health “fact”. Your video will present the results of your research in a way that is easy for non-scientists to understand while presenting the factual evidence you uncover.

Group Assignment (GA) project deliverables

There are several assignments along the way that each group will complete.

GA1: An exploration of your proposed topic in the popular media. Search the internet and read several articles relative to your proposed topic. This assignment will contain 4 distinct parts:

- 1) A summary of the proposed topic as you have read about it in popular media sources. 2-3 paragraphs will be sufficient. You should include various sources where you may have heard about the topic and details about the claim being made. (“according to the Dr. Oz website, carrots are good for your eyes because.... The Woman’s Day website also adds that carrots contain vitamins such as beta carotene.....”).
- 2) A scientifically valid hypothesis statement. This will be the hypothesis that you will test using the published scientific literature. “Eating a serving of carrots daily decreases your risk of developing degenerative eye disease, such as macular degeneration or glaucoma”. Your hypothesis should be specific, scientifically stated, and directly testable by the scientific method. Nonspecific terms like “eating carrots improves your health” or “carrots boost your immunity” are not testable and are not acceptable hypotheses.
- 3) Fill out the posted activity to describe the ideal experiment that would prove or disprove (as appropriate) your hypothesis (posted in the Project Information folder of the course website)
- 4) Citations for the popular media articles you have read.



All citations will be completed in the Council of Science Editors (CSE) Name-Year format. Examples can be found at the following website:

https://writing.wisc.edu/Handbook/DocCSE_NameYear.html#internet

Your citations for GA1 will most likely be websites. When citing websites using CSE, use the following general information:

Author(s) name (if given). Date (if given use full date, months are given with three letter abbreviations). Title of the webpage [Internet]. Publisher; [cited date]. Available from: web address

****Note:** When there is no author available for a work, the date of publication comes after the title in the name-year system.

Example:

Smith KA. 2013 Aug 13. A WWII propaganda campaign popularized the myth that carrots help you see in the dark. [Internet]. Smithsonian Magazine; [cited 2015 Apr 6]. Available from:

<http://www.smithsonianmag.com/arts-culture/a-wwii-propaganda-campaign-popularized-the-myth-that-carrots-help-you-see-in-the-dark-28812484/#KIUBGxUs47eJhUlf.99>.

GA2: Annotated Bibliography. You will provide a list of 3-5 scientific sources (*THERE MUST BE AT LEAST ONE SOURCE PER GROUP MEMBER, so if your group has 4 people you will need 4 sources*) that you will use for the project. You will likely need to look into many more than 3-5 journal articles in order to select the best/most relevant ones for your project. You should provide a brief, 1 paragraph (3-4 sentence) summary of each article, which includes the important conclusion(s) of the article AND why this article is relevant to your project. (Example: In this article by Jones *et al* in the American Journal of Nutrition, the researchers analyze the diets of mice fed with or without carrots, and perform histological analyses of the retinas of the study animals. They conclude that... This information is useful to our project because....).

In biology, the primary database for identifying scientific journal articles is PubMed.

[\(http://www.ncbi.nlm.nih.gov/pubmed/\)](http://www.ncbi.nlm.nih.gov/pubmed/).

Rebecca Ziino, a research librarian at the Gordon Library, will come to our class to talk about identifying good sources using PubMed. She will also be available for consultation about your source lists if you would like assistance. You can contact Rebecca for assistance at any time throughout the project at rziino@wpi.edu

Each of your brief article summaries should be followed by the appropriate citation. Again we will follow the CSE format for print journals: Author(s). Year (note: do not include other date info). Article title. Journal title (note: use appropriate abbreviations). Volume(issue):page numbers.



Example:

Manzi F, Flood V, Webb K, Mitchell P. 2002. The intake of carotenoids in an older Australian population: The Blue Mountains Eye Study. *Public Health Nutr.* 5(2):347-52.

Please note! In biology, we never use the “Journal Article Found Online” format. Even though you will likely be accessing and reading these articles online, we cite them as though they were in physical print, because the print version is identical (the online versions are simply .pdf files of the print versions). Please use the correct format.

GA3: Transcript with Citations. You will provide a written script of the film you are planning to create. The script should have appropriate citations of your popular media and scientific source material in the format described above. The text must be fully and accurately cited, to give proper credit to those sources where you obtained information. In-text citations should be identified with the author’s name and year (see the CSE Name-Year format mentioned above). The reference list should appear at the end of the document in alphabetical order by the last name of the first author in the list, **not in the footnotes** (you can refer to any of your scientific articles as a model). Rebecca will also be available to assist with citations if you would like assistance.

Below is an example of a line in a video transcript that should be cited:

One baseline study of intake of beta-carotene, a vitamin A derivative that is metabolized into pigments used in the rod and cone cells of the retina, identified a population of adults with elevated beta-carotene levels which may be good subjects to study the relationship of beta-carotene to eye disease (Manzi et al. 2002). Furthermore... [text goes on]

Below is the way the reference list at the end of the document would look:

References:

Manzi F, Flood V, Webb K, Mitchell P. 2002. The intake of carotenoids in an older Australian population: The Blue Mountains Eye Study. *Public Health Nutr.* 5(2):347-52.

GA4: The Video Presentation. You will make an approximately 2-4 minute video of the written transcript. One member of your group should create a YouTube account (if one of you does not already have one) and upload your video. You may create a “dummy” YouTube account if you wish, using a generic e-mail address for your group (example: WPI.BB1025.Group7@yahoo.com). You may also select the option to keep your video out of the searchable YouTube database so that it does not appear in search results.

I realize that some of you may be a bit “camera shy”. It is not necessary for everyone on the team to appear on camera. Members may participate by filming and editing, even if they are reluctant to



perform on camera. Other alternatives to acting on camera include using animations, white board/chalk board drawings, puppets, talking animals, voice-overs of other video footage, whatever! Get creative!

Jim Monaco is an Instructional Media Specialist at the ATC. He will come to our class to discuss the options for videography and film editing, and can provide assistance throughout the project as necessary. Cameras, tripods, and film editing software are all available through the ATC, or you may use your own camcorder or even your phone if it takes decent video. I do not expect professional quality videography, but you must make an attempt at a decent quality product. I cannot properly evaluate a video that is out of focus, or is too dark to see your faces, or I can't hear you over the wind noise!

You may contact Jim for assistance at any point at jmonaco@wpi.edu

You will finally upload a Word document to the dropbox on the course website that contains: your group number, your names, your YouTube link, and whether or not you permit me to show the video in class as part of our video contest.

On the final day of class, I will show several of my favorite videos, and the class will vote for their favorite. The winning team will receive a prize!

Assessment

Rubrics for each group assignment will be distributed before the assignment is due. Please pay careful attention to the rubrics! They tell you EXACTLY what you should do to receive full credit, and also will explain EXACTLY why you may have lost points on an assignment. Check your assignment against the rubric before turning it in for best results!

Twice over the course of the project, you will use the CATME system to evaluate yourself and your group members. This will be your opportunity to give feedback about your opinion of the performance of your team members. If there are certain team members that are clearly not pulling their weight, or who are doing more than their share of the work, the individual's final project grade may be adjusted to reflect this at my discretion.

Your videos will be evaluated by your professor as well as 6-8 of your classmates.

As part of your grade, you will use a posted rubric to evaluate two other groups' videos. You will be assigned other groups to evaluate once the videos are posted. Information will be collected using the Qualtrics survey system. You will receive a survey link after the videos are posted.

The project will consist of 100 cumulative points, which are worth 25% of your final grade. The allotted points and due dates of the various items can be found in the table below:



Project Schedule:

Item	Due Date	Points
GA1: Topic Summary, Hypothesis, Questions	Mon 3/28, uploaded to myWPI by 11:59pm	15 points
GA2: Annotated bibliography	Mon 4/4 Uploaded to myWPI by 11:59pm	20 points
Team assessment 1 (CATME)	Friday 4/8 Surveys close at 11:59pm	Must be completed. 5% deduction in final project grade if not completed
GA3: Transcript	Fri 4/15 Uploaded to myWPI by 11:59pm	30 points
GA4: Final Video	Fri 4/29 Uploaded to youtube and document to drop box by 11:59pm	35 points (Instructor's evaluations = 25 points, peer evals = 10 points)
Team assessment 2 (CATME)	Tue 5/3 Surveys close at 11:59pm	Must be completed. 5% deduction in final project grade if not completed
Peer Evaluation of 2 other videos (Qualtrics survey)	Tue 5/3 Surveys close at 11:59pm	Must be completed. 5% deduction in final project grade if not completed.
Video Contest	In Class on Tue 5/3	Win a fabulous prize!

A few of the better projects:

<https://www.youtube.com/watch?v=v7ZJeWGPLCE>

<https://www.youtube.com/watch?v=yPEzGpBUwvo&feature=youtu.be>

<https://youtu.be/xG3ul-U5Sjc>



List of potential topics

These are some suggestions, but you are welcome to research and propose your own topic as well. There are many, many websites out there with quasi-scientific health headlines that you can use to come up with your own ideas.

Causes Cancer:

- power lines, pesticides, fluoridated water, processed meat/nitrates, artificial sweeteners, any others

Entertainment:

- TV makes you dumber, ruins your eyesight
- Video games lead to aggressive behavior

Heart disease:

- Foods that are good for your heart (but, see banned list)
- Good dental hygiene reduces heart disease

Health benefits of consuming (though you must focus on a SPECIFIC health benefit, like blood pressure, weight loss, metabolism, cancer, dementia, etc)

- organic food, gluten-free diet, daily multivitamin, fish oil, various herbal teas or other pills/supplements, antioxidant-rich foods

Weight loss properties of (but see banned list):

- acai berry, teas, particular daily exercise regimens (8 minute workouts, etc)

Babies and Children:

- breastfeeding is healthier/better than formula/bottle
- classical music makes babies smarter
- television programs designed for infants or toddlers improve early learning
- Alcohol, caffeine is bad for a developing fetus

Immunity (but see banned list):

- cures for the common cold: zinc, lysine, Echinacea
- foods or supplements that confer resistances to infection or disease
- role of the microbiome or microbial supplements/probiotics in preventing infection or disease

Other misc:

- Ginger, peppermint, slippery elm as a cure for stomach cramps/nausea
- Ginko biloba improves memory
- Effectiveness of “neural training” games (eg. Lumosity) or use in combatting dementia or neurodegenerative disease
- Relationships between mental health and exercise, other non-strenuous activity, yoga, tai-chi, or effects on physical wellness (cholesterol, blood pressure, cancer, etc)



Banned topics (these have been patently disproven and/or have been done too many times in this class): Chocolate or red wine and heart disease, vitamin C and colds, vaccines and autism, green tea or caffeine and weight loss, oatmeal and cholesterol, and the example of carrots and eyesight used herein

