| **GARP 0110 Fall 2020: Week #5 Cookbook.** |
|---|
| Welcome to Week #5 of the semester - this week we look at scientific communication and how science is portrayed in the media. We also review the CRAP Test and online source evaluation. Then we look ahead and summarize the complex and wicked issue of climate change as 5 key facts in only 10 words and finally explore the 21 Big Questions that we will use to better understand climate change / global warming.<br><br>⇒ Everything that you need for this week is included in / linked from this cookbook.<br><br>Questions / Feedback: cbraun@westfield.ma.edu or Anonymous (via Padlet) |

| 1) Week #5 Introduction Video | |
|---|---|
| 2) Topics. | 1. Review and Reflection.<br>2. The CRAP Test<br>3. Science Communication and the Media<br>4. Zoom Wednesday<br>5. (Online) Source Evaluation<br>6. Climate Change: The Big Questions<br>7. Your Turn: The Week #5 Assignment |
| 3) Zoom Wednesdays.<br><br>GARP 0110-001: 11:30-12:20<br>GARP 0110-002: 12:35-13:25<br>GARP 0110-003: 08:15-09:05 | Join Zoom Meeting:<br>https://zoom.us/j/93899213283 |
| 4) Week #5 Synopsis Video | |

**Please contact me for help or clarification of my expectations as needed.**
**I'm here to help.**

## Course Schedule.

| Week | Dates | Delivery Method. | Topic/Theme. |
|---|---|---|---|
| Week 1 | W 9/2<br>F 9/4 | Zoom Wednesday<br>Asynchronous Online Learning | Introduction, Course Logistics<br>What is SFFP? |
| Week 2 | M 9/7<br>W 9/9<br>F 9/11 | No class (Labor Day)<br>Zoom Wednesday<br>Asynchronous Online Learning | What is Science?<br>What is Science?<br>What is Science? |
| Week 3 | M 9/14<br>W 9/16<br>F 9/18 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | The Limits of Science<br>The Limits of Science<br>The Limits of Science |
| Week 4 | M 9/21<br>W 9/23<br>F 9/25 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Presidential Briefing #1<br>Library Session<br>Presidential Briefing #2 |
| Week 5 | M 9/28<br>W 9/30<br>F 10/2 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Science and Society<br>Science and Society<br>Science and Society |
| Week 6 | M 10/5<br>W 10/7<br>F 10/9 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Climate Change<br>Climate Change<br>Climate Change |
| Week 7 | M 10/12<br>T 10/13<br>W 10/14<br>F 10/16 | No class (Columbus Day)<br>Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | <br>Climate Change<br>Climate Change<br>Climate Change |
| Week 8 | M 10/19<br>W 10/21<br>F 10/23 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Climate Change<br>Climate Change<br>Climate Change |
| Week 9 | M 10/26<br>W 10/28<br>F 10/30 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Climate Change<br>Climate Change<br>Climate Change |
| Week 10 | M 11/2<br>W 11/4<br>F 11/6 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Climate Change<br>Climate Change<br>Climate Change |
| Week 11 | M 11/9<br>W 11/11<br>F 11/13 | Asynchronous Online Learning<br>No class (Veteran's Day)<br>Asynchronous Online Learning | Test #1<br><br>Test #1 |
| Week 12 | M 11/16<br>W 11/18<br>F 11/20 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Sustainable Energy<br>Sustainable Energy<br>Sustainable Energy |
| Week 13 | M 11/23<br>W 11/25<br>F 11/27 | Asynchronous Online Learning<br>No class (Thanksgiving Break)<br>No class (Thanksgiving Break) | Sustainable Energy |
| Week 14 | M 11/30<br>W 12/2<br>F 12/4 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Sustainable Energy<br>Sustainable Energy<br>Sustainable Energy |
| Week 15 | M 12/7<br>W 12/9<br>F 12/11 | Asynchronous Online Learning<br>Zoom Wednesday<br>Asynchronous Online Learning | Special Topics<br>Special Topics<br>Special Topics |
| Week 16 | M 12/14<br>W 12/16 | Asynchronous Online Learning<br>Zoom Wednesday<br>Test # 2 (as scheduled) | Special Topics<br>Special Topics<br>Test #2 |

# 1) Review and Reflection.

Remember John Dewey: We do not learn from experience, we learn from reflecting up experience.

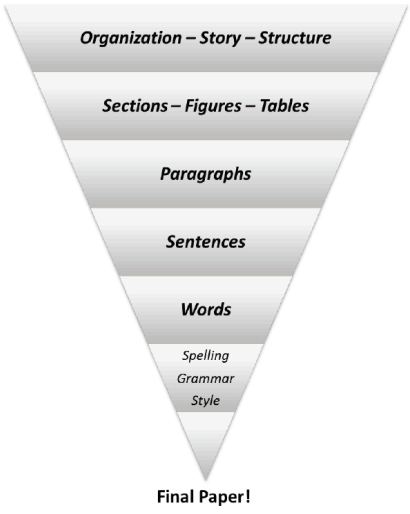
### 1.1) The Ozone Hole and Climate.


Please remember (and understand) these five simple facts:

1. The ozone hole does not cause global warming.
2. Global warming does not cause the ozone hole.
3. There is good ozone and bad ozone.
4. The bad ozone contributes to global warming.
5. There are many interesting indirect connections between ozone and global warming.

Katharine Hayhoe's video What About the Ozone Hole (YouTube, 8:33-minutes) explains it all.

### 1.2) Professional Writing.




Please remember (and understand) these five simple facts about professional writing:

1. You don't have to be a great writer: just follow the basic rules.
2. Work from an outline.
3. Use figures properly and to your advantage.
4. Details and formatting matters. A lot.
5. Review and revise.

Take a look at the Writing and Presenting section of my website for great resources and tips on writing and presenting.

Bonus Tip: use the free Westfield State Reading and Writing Center.

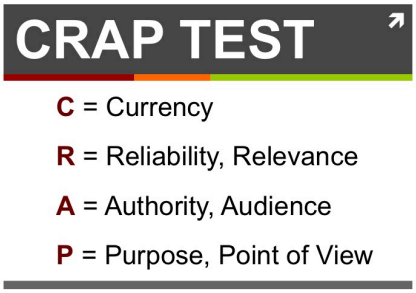
### 1.3) The Week #5 Review Quiz.

Please complete the Week #5 Review Quiz.

## 2) The CRAP Test.

The CRAP Test is a quick and simple tool to assess if a website (or any other source) is reliable enough for academic work by looking at four criteria: currency, reliability, authority, and purpose. Here's how (copied from Laura Guertin's GeoEd Trek):

- C = Currency = When was the source written? published? updated? Was it published near the date of the original event/discovery?
- R = Reliability/Relevance = Is the information still relevant today? Who is the intended audience for the source? Are there links to other articles/sites within the source? If so, how many? Is it a primary or secondary source? Was it peer reviewed?
- A = Authority/Audience = Who is the author of the source? What are the credentials/reputation of the publishing source? How do you know the author is an expert? What are his/her or the organization's credentials? Google the author/institution. Was the source written with any bias?
- P = Purpose/Point of View = Why was this source published? Is it intended to persuade or inform? Is the source for the general public, scholars, first-year students, etc.? Are there advertisements attached to the source, and if so, what purpose do they serve? Is this a first-hand account of an event or research?




The bottom line: can/should this article be used for a college-level assignment (yes/no)?

### 2.1) The CRAP Test.

Please review The CRAP Test slides and make sure that you read and understand the speaker notes below each slide for additional context, questions, and explanations - these notes summarize what I would say in-class. You can move the divider between the slide and the speaker notes so that you can see all of the speaker notes or use the presentation mode.

### 2.2) Try the CRAP Test.

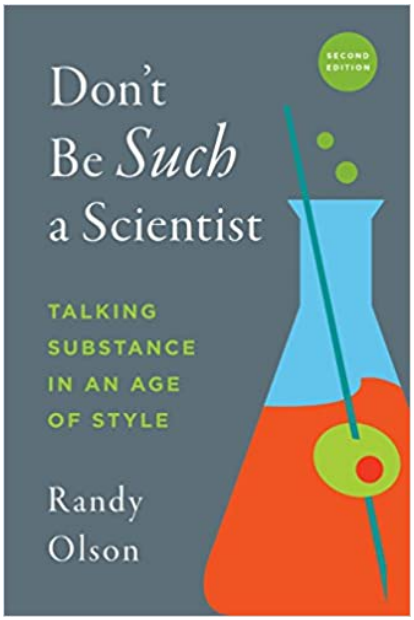
Please make sure that you assess the reliability of every source that you use for your Presidential Briefing paper. In other words: make it a habit to use the CRAP Test in your academic or professional work. You can copy and use my version of the CRAP Test:

- The CRAP Test as Google Docs (File - Make a copy or download as MS Word).
- The CRAP Test as MS Word

## 3) Science Communication / Science in the Media.

Obviously, science communication and the way that science is portrayed in the media are connected. Many scientists find it difficult to communicate their complex work to the non-expert public and many media outlets feel compelled to present a 'false' balance when covering scientific topics.

### 3.1) Science Communication.




First, please review my Science Communication slides and make sure that you read and understand the speaker notes below each slide for additional context, questions, and explanations - these notes summarize what I would say in-class. You can move the divider between the slide and the speaker notes so that you can see all of the speaker notes or use the presentation mode.

Next, please watch the first 18-minutes of this video: Anthony Leiserowitz talks climate communication and take notes along the way to answer the following questions (see Week #5 Assignment):

1. What are the 5 key things/ideas that people should understand about climate change?
2. Why are scientists bad communicators?
3. Why is the scientific consensus so important to communicate?

Third, please complete the brief Science Communication Quiz.

### 3.2) Science in the Media.

First, please review my Science in the Media slides and make sure that you read and understand the speaker notes below each slide for additional context, questions, and explanations - these notes summarize what I would say in-class. You can move the divider between the slide and the speaker notes so that you can see all of the speaker notes or use the presentation mode.

- Please watch How to explain scientific ideas: 6 SIMPLE tips from a communication expert (YouTube, 4:52 minutes) - these 6 tips apply to anything that you may want to explain to someone else.
- Science Communication in a Virtual World is awesome (YouTube, 8:15 minutes).

**3.3) The Issue of False Media Balance.**

False media balance is a media bias when an issue as being presented as more balanced between opposing viewpoints than the evidence supports. A classic example of false media balance is the ‘debate’ on global warming. Giving equal exposure to scientists on both sides makes it seem like there is indeed disagreement within the scientific community, when in fact there is an overwhelming scientific consensus on the science of human-caused global warming.

- Please watch the Climate Change Debate: Last Week Tonight with John Oliver (4:26 minutes). This is probably the single-best illustration of the false media balance when it comes to climate change. (Fyi: the language is a little salty)

- Please read False Balance - what is it and why is it dangerous? (by Sophie Cremen, 6 March 2018), especially the first two paragraphs.


Source: https://www.skepticalscience.com/graphics.php?g=302

## 4) Week #5 Zoom Wednesday.

- Zoom Link: https://zoom.us/j/93899213283
- Week #5 Zoom Wednesday Worksheet

## 5) (Online) Source Evaluation.

The following is a brief synopsis of the excellent open-source book Web Literacy for Student Fact-Checkers by Mike Caulfield. Fact: the Internet is both the greatest propaganda machine and the greatest fact-checking tool ever-invented and that's what makes it so powerful and dangerous at the same time.

**Fact-Checking: Four Strategies.**

1. Check for previous work. This means checking if others have already evaluated the source. This can include Wikipedia as Wikipedia usually provides its sources as footnotes at the bottom of the page.
2. Go 'upstream' and trace the claims back to their original source. The original source may be very different from the website that you found it on!
3. Read laterally. Find out more by reading what others have said about the source - this will tell you a lot about the qualifications or trustworthiness of the source.
4. Circle back. Start the process again and/or find an alternate source.

In-general: Follow these strategies in-sequence and stop when you are satisfied with your source evaluation. But, be aware of this dilemma: we tend trust sources that say things that are correct, but often what we consider to be 'correct' is actually what we already believe to be true.

Today, unwelcome news is often rebranded as 'fake news'.
And inconvenient evidence is often rebranded as 'fake science'.
That's just intellectually lazy.

**What is reliable?**

1. Reliable sources have internal and external processes for verifying facts and correcting mistakes. That obviously applies to peer-reviewed scientific publications, but also to reputable news outlets such as the Boston Globe, PBS/NPR, CNN, BBC News, and others.
2. Reliable sources will employ professionals with expertise and experience.
3. Reliable sources have an incentive to get things right as their reputation (and thus profits) depend on that.

**Additional Resources.**

- https://www.biointeractive.org/classroom-resources/evaluating-science-news
- https://www.pbs.org/now/classroom/lessonplan-03.html
- https://serc.carleton.edu/NAGTWorkshops/urban/activities/22279.html

## 6) Climate Change: The Big Questions.

Let's look ahead at our climate change / global warming topic as one of these 'wicked' scientific issues that we need to make sound decisions on as a democratic society.

### 6.1) The Five Key Ideas / The Five Key Disbeliefs.

Here is everything that you need to know about climate change:

| | | | | | |
|---|---|---|---|---|---|
| **Facts:** | It's real. | It's us. | Experts agree. | It's bad. | There's hope. |
| | ↕ | ↕ | ↕ | ↕ | ↕ |
| **Disbeliefs:** | It's not real. | It's not us. | Experts are unreliable. | It's not bad. | There's no hope |

In his video [The five climate disbeliefs: a crash course in climate misinformation] John Cook walks you through these five key facts and matching five key disbeliefs in some detail. Please watch the video - trust me: it's worth it.

- Introduction (0 - 2:15 minutes)
- The Five Key Ideas and Disbeliefs (2:15 - 26:38 minutes)
- Summary (26:38 - 27:29 minutes)

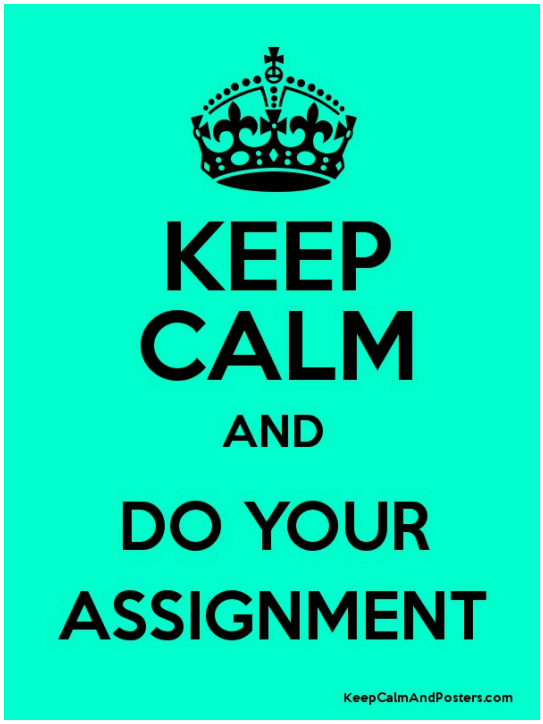
### 6.2) The 21 Big Questions.

Our upcoming climate change / global warming section is organized around 21 Big Questions that we need to understand to make sound decisions on as a democratic society.

Please explore the [21 Big Questions] on our course website.

## 7) Your Turn: The Week #5 Assignment.

Please complete the Week #5 Assignment.

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