# ACTIVISM IN THE SCIENCE CLASSROOM:
## WHERE TO DRAW THE LINE?

Annissa Furr
Tyra Hall-Pogar
Amy Smith

Purdue University Global
General Education Science Department

PURDUE UNIVERSITY GLOBAL

# WHAT IS THE CLASSROOM?

WHEN YOU TEACH, ARE YOU AWARE OF THE CLASSROOM SPACE YOU HAVE CONSTRUCTED FOR YOUR STUDENTS?

# THIS IS OUR SCIENCE CLASSROOM

- Science education in the 21st century
- Consider the impact of the following on your instructional style
  - Social, cultural, economic, and political issues
- Our science classes include issue-based curriculum as we utilize real life examples to engage students
  - Goal is to inspire scientific literacy to increase students' performance
- We will present examples and strategies in confronting scientific issues while engaging in the teaching and learning of science

# ACTIVISM AND EDUCATION

- Where do students get scientific knowledge before the classroom?
  - Media Influence
  - Social media
- Education for awareness
  - Questions
  - Explore uncertainties
  - Understand research practices


# TOPIC: RECYCLING

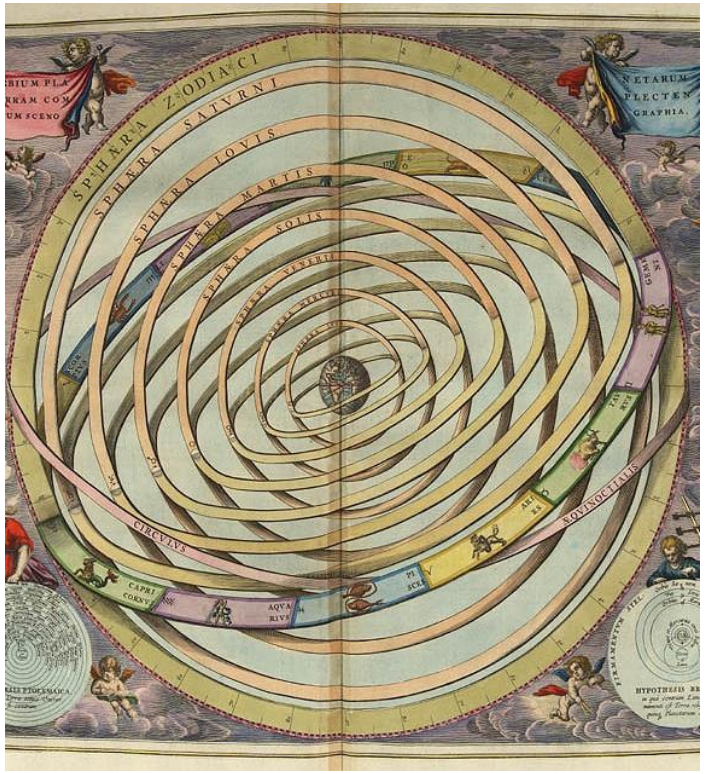
**Student Survey Comments:** "I was hoping to learn more science, but was instead, presented agendas such as recycling, green energy and global warming as "science" with no discussion of "total cost ownership" of these processes"

Is there a valid opposing viewpoint to recycling and waste reduction?

Am I obligated to present an invalid point of opposition?

Is activism acceptable in a classroom setting?

# TOPIC: EVOLUTION




- SC200: Discovering Science – a broad, non-science major survey of science course
- Unit 8 Seminar: Evolution and Intelligent Design
  - Focus on the lines of evidence

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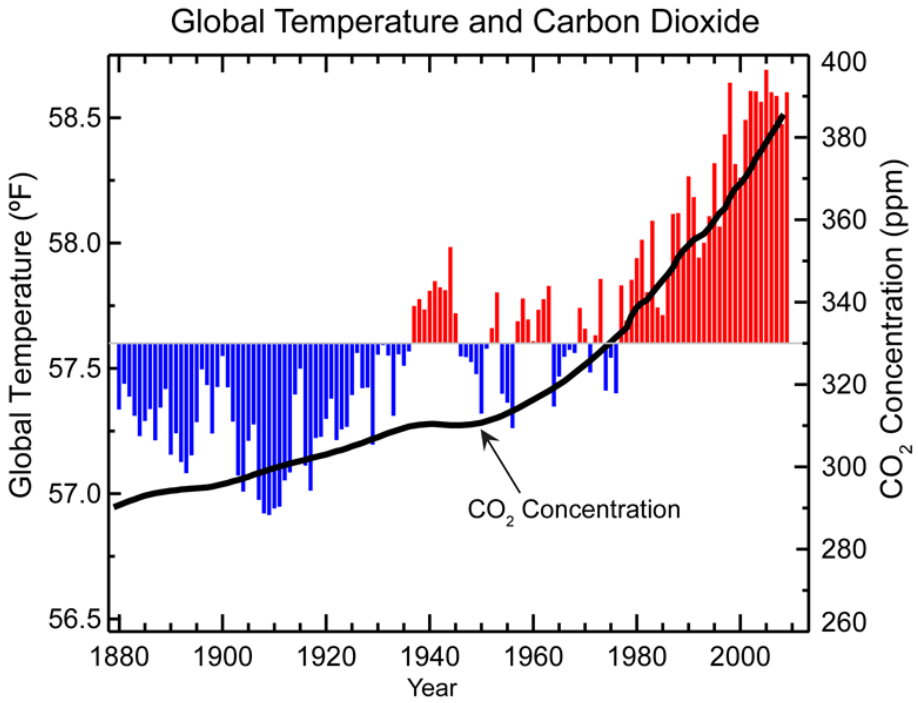
- How can we ensure an open-minded and productive discussion?
  - Instructors must prepare for possible negative interactions and be ready for them.
- How do scientists deal with opposition based on cultural beliefs?
  - One strategy- present both sides but be clear about where the body of scientific knowledge stands
  - Some instructors clearly state their beliefs, others remain neutral – carefully choose a stance




# TOPIC: CLIMATE CHANGE

- Climate change is presented in several of our science classes.
- Focus on data and evidence.
- Where does the scientific community find consensus?
  - 7-10 years ago there was not complete consensus on human-caused climate change
  - UNFCCC Report compiled evidence from across the globe and clearly stated that climate change is human caused

# What happens when scientific findings dispute common myths?

# The vaccine debate……

# History of the Anti-Vaccine Movement

1905- the U.S. Supreme Court ruled that states had the authority to create laws making vaccination mandatory

1982- the documentary *DPT: Vaccine Roulette* aired on public TV

1998- Dr. Andrew Wakefield study linking vaccines to MMR vaccine

Celebrity support and internet groups fuel growth

# You can’t unring a bell: The Wakefield Study

- Dr. Andrew Wakefield claimed to find a possible link between the MMR vaccine and autism based on a study of 12 children in 1998
- Admitted falsification for profit
- In the classroom, focus on presenting the evidence and current research
- Use empathy and keep an open mind, particularly with non-science majors

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- Discussion: herd immunity
- Discussion: the flu shot
- Debate: should vaccines be mandatory?

# In the Classroom

Tread lightly and encourage respectful debate

Great conversation starter about the importance of research, bioethics, and credible sources

Encourage students to find facts on both sides of any argument

# References


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# QUESTIONS?

Annissa Furr
AFurr@purdueglobal.edu

Tyra Hall-Pogar
THall-Pogar@purdueglobal.edu

Amy Smith
ASmith@purdueglobal.edu