

## **Preliminary discussions regarding a sustainability literacy assessment for Miami University**

**Background:** In early Fall 2015 a handful of Miami faculty and staff met to discuss the creation of a sustainability literacy assessment. Although they ultimately decided to transfer the effort to the Spring 2016 class of one of the participating faculty, the group had quickly assembled a set of thoughts and eleven questions that might be of use to others. They follow.

**Introduction:** The overall goal of this set of questions is to sketch a green profile of incoming students, predominantly freshmen early in their first semester. The data will be used to inform a focused effort, endorsed in the 2015 Sustainability Commitments and Goals (in development) to craft a pre- and post- Miami treatment sustainability literacy assessment, with the ultimate objective of assessing how well a Miami education is preparing graduates to understand and address sustainability challenges.

The heavy concentration on carbon-related questions reflects the stated focus of Miami's 2015 SCAG.

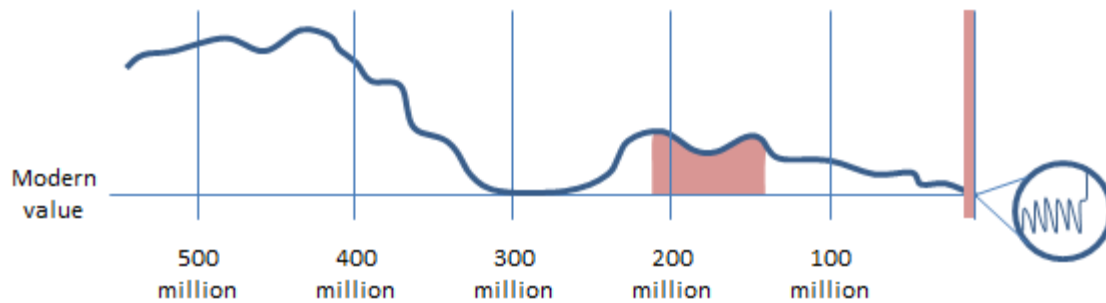
Questions in this survey address:

- a) the meaning of sustainability (Q4),
- b) awareness of planning, architectural and engineering features of sustainability on campus (Q1)
- c) atmospheric carbon dioxide data interpretation (Q2), significance (Q3), personal assessment of global warming understanding (Q10), and personal actions one can take to reduce their carbon footprint (Q7). Note: Q10 was taken from the Gallop Environmental Poll, with the thought that it would allow us to compare our answers to those who have taken that published poll
- d) attitude toward the existence of an ecological crisis (Q8) and toward human interference with nature (Q9). Note: Q8 and Q9 are taken from the New Ecological Paradigm Scale. Agreement with them bucks the dominant social paradigm in favor of the new ecological paradigm
- e) awareness of elements of sustainability in business (Q5)
- f) discernment of environmental social justice, or injustice (Q11)
- g) and a general science question (Q6) from the PEW science quiz, with the thought that it would allow us to compare our answers to those who have taken that published poll

### **Draft questions:**

- 1) How certain are you that the following are installed on Miami's main campus? (Use features of the survey tool to display a reasonable number of these.)
  - a. vegetated roofs
  - b. storm water management ponds
  - c. rain gardens
  - d. low maintenance native plants
  - e. naked street
  - f. LED lights
  - g. LEED buildings
  - h. geothermal electricity
  - i. bike lanes
  - j. electric vehicle charging stations
  - k. coal burning steam boilers
  - l. natural gas burning steam boilers
  - m. solar-electric panels
  - n. sidewalks heated to melt snow

## Carbon Dioxide in Earth's Atmosphere



- 2) The chart above shows atmospheric carbon dioxide levels during 500 million years of earth's history, all of which are higher than modern values. The Jurassic Period (shaded) around 200 million years ago is part of the second highest period, with the highest period occurring between 400 and 500 million years ago. The thin shaded rectangle on the right represents the past 600,000 years, which is enlarged in the circle. What is unique about this time period? Select all that apply.
- It is the only time homo sapiens have existed on earth
  - It is the only time animals have existed on earth
  - Its carbon profile ends with a marked upward direction for reasons science can't explain
  - Its carbon profile ends with a marked upward direction that corresponds to the industrial revolution
  - Its carbon profile ends with a marked upward direction that corresponds to volcanic eruption
  - None of the above
- 3) Why do we care about the amount of carbon dioxide in the atmosphere? Select all that apply.
- It is the primary greenhouse gas that is warming the planet and causing climate change
  - The oceans have absorbed so much of it they are acidifying
  - Global warming is melting glaciers and therefore contributing to sea level rise
  - Severe storms and rising sea levels are creating climate refugees around the world
  - Changes are happening faster than some species of plants and animals can adapt or migrate
  - None of the above
- 4) Which of the following are included in Miami's commitment to sustainability?
- environmental stewardship
  - social responsibility
  - economic viability
  - future generations
  - academic programs
  - All of the above
- 5) Which of the following are likely to be practiced by a business that is commitment to sustainability? Select all that apply.
- Socially responsible investments
  - Checking the environmental practices of suppliers
  - Water and energy conservation
  - Paying a living wage to employees
  - Tracking and reducing their carbon footprint
  - Involvement in the communities in which they are located

- 6) Which of these is the main way that ocean tides are created?
- The rotation of the earth on its axis
  - The gravitational pull of the moon
  - The gravitational pull of the sun
- 7) Which of these actions does NOT reduce your personal carbon footprint?
- Drink bottled water rather than soda
  - Use Energy Star light bulbs in lamps and lighting
  - Compost food and yard waste
  - Make sure your auto tire pressure is at the recommended level
- 8) The so-called “ecological crisis” facing humankind has been greatly exaggerated.  
(strongly agree, mildly agree, unsure, mildly disagree, strongly disagree)
- 9) When humans interfere with nature it often produces disastrous consequences. **OR** If things continue on their present course, we will soon experience a major ecological catastrophe.  
(strongly agree, mildly agree, unsure, mildly disagree, strongly disagree)
- 10) From the Gallop Environmental Poll: <http://www.gallup.com/poll/1615/environment.aspx> Thinking about the issue of global warming, how well do you feel you understand this issue?
- very well
  - fairly well
  - not very well
  - not at all
  - no opinion
- 11) Which of the following is an example of environmental justice?
- Urban citizens win a bill to have toxic wastes taken to rural communities.
  - Indigenous communities are involved in setting a quota for the amount of wood that they can take from a protected forest next to their village.
  - Government dams a river, flooding Native American tribal lands, to create hydro-power for large cities.
  - Corporations build factories in developing countries where environmental laws are less strict.