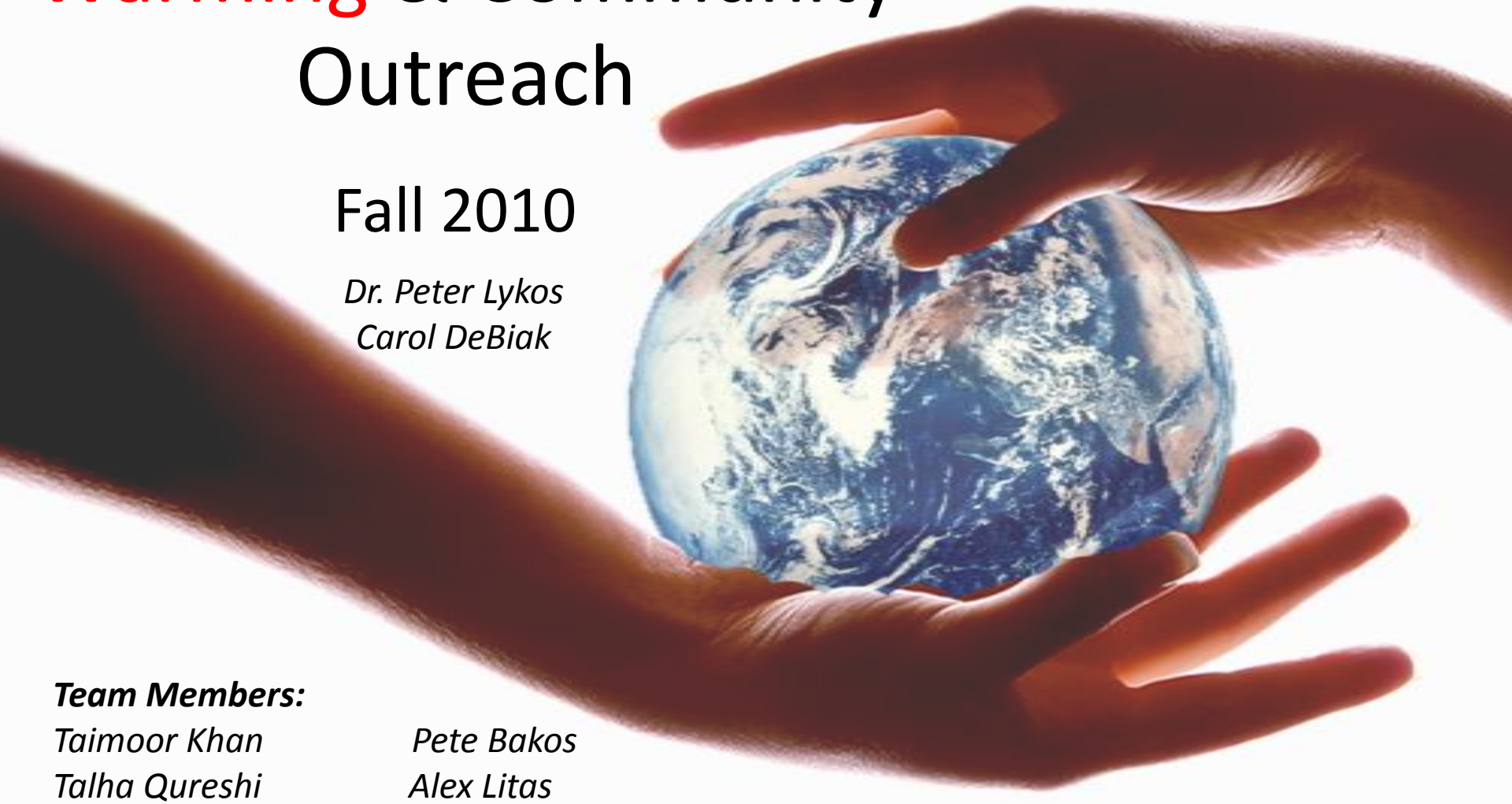
IPRO 331 Global Warming & Community Outreach

ILLINOIS INSTITUTE OF TECHNOLOGY

Fall 2010

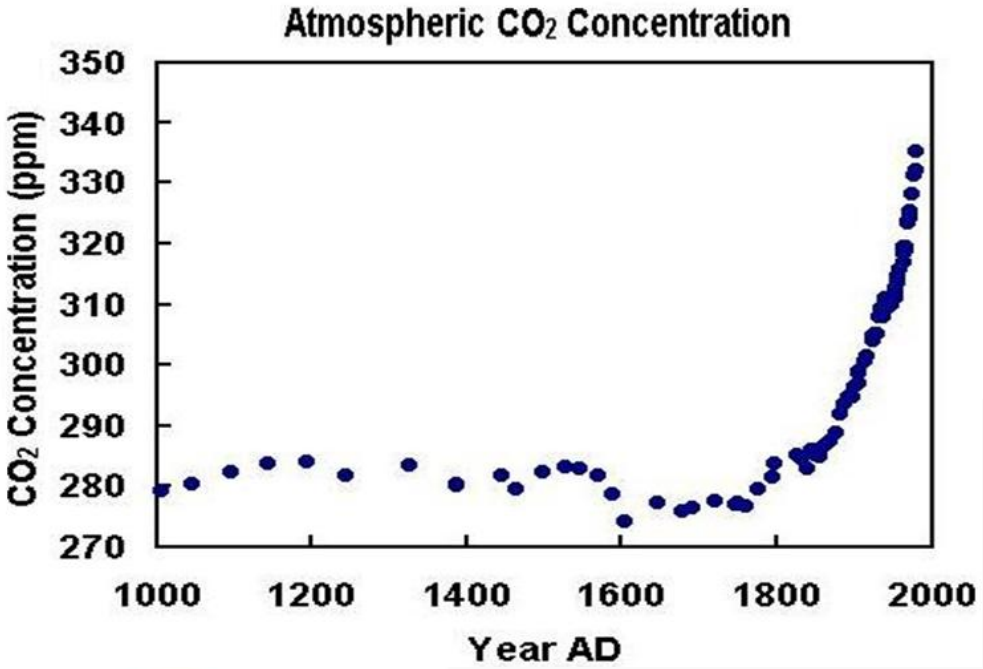
Dr. Peter Lykos
Carol DeBiak



Team Members:

Taimoor Khan
Talha Qureshi
Nicole Valio
Sophia Hoxha
Pete Bakos
Alex Litas
Jaeha Jun
Matt Pinto
Bushra Hussaini
Antonio Gutierrez

Introduction



- .74°C increase in average surface temperature
- Glaciers and snow are melting at a faster rate
- Increase in atmospheric CO2 concentrations

Background

"45% of American voters believe global warming is caused by natural planetary trends"

"27% believe investing in fossil fuels is a better long-term investment than renewable energy"

-Rasmussen Reports, Nov. 2010

Purpose

- Educate the public concerning the causes and effects of global warming
- Increase awareness of practical solutions to prevent global warming

Objectives

Update the presentation with new topics

Create a presentation suited for different age groups

Make the presentation interactive by integrating quizzes and games

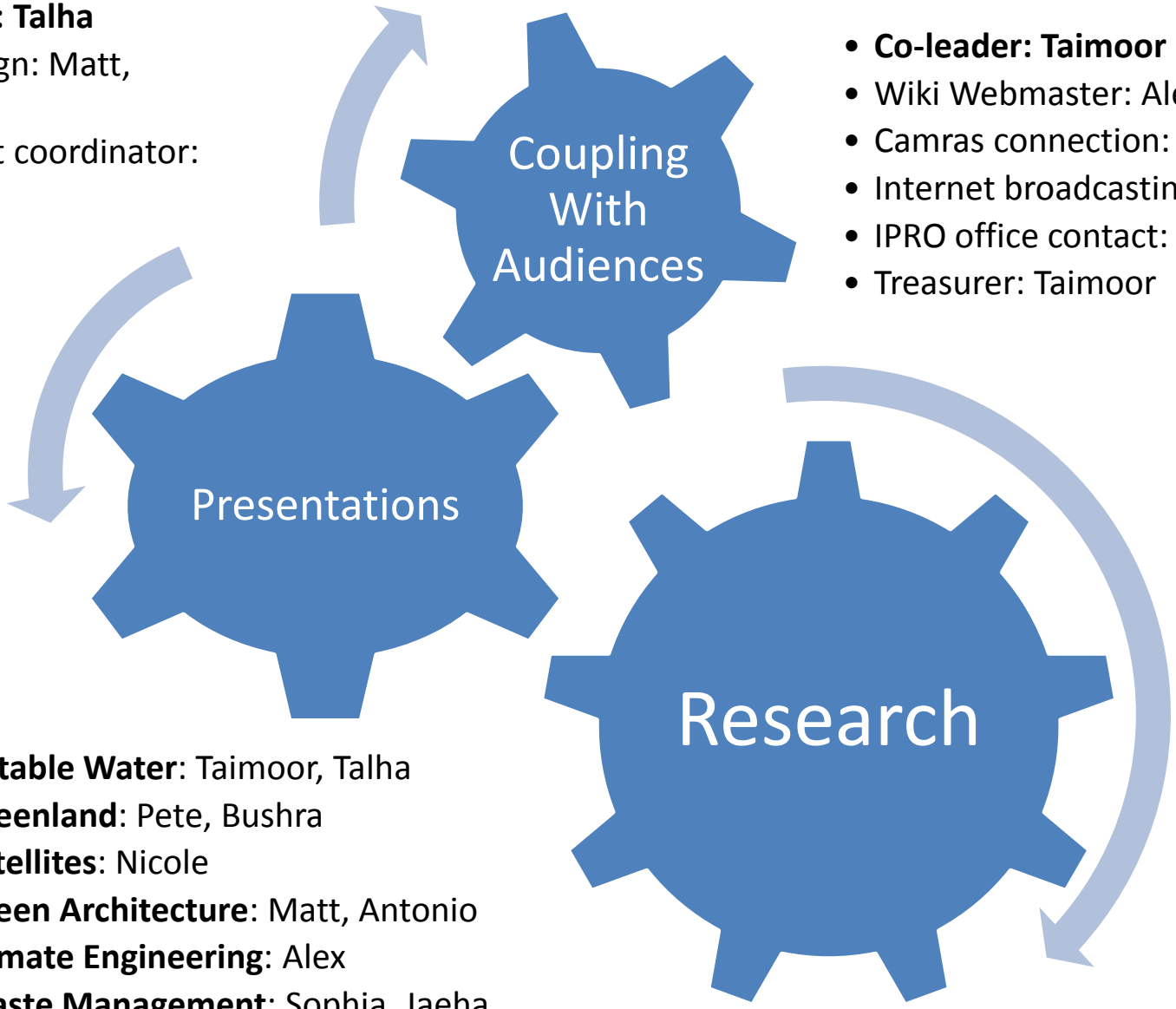
Create a social network and Wiki space

Reach out to more than 1000 individuals

Record our data, research and progress through out the semester

Team Organization

- **Co- Leader: Talha**
- Visual Design: Matt, Antonio
- Powerpoint coordinator: Bushra



- **Co-leader: Taimoor**
- Wiki Webmaster: Alex
- Camras connection: Nicole
- Internet broadcasting: Pete
- IPRO office contact: Taimoor
- Treasurer: Taimoor

- **Potable Water**: Taimoor, Talha
- **Greenland**: Pete, Bushra
- **Satellites**: Nicole
- **Green Architecture**: Matt, Antonio
- **Climate Engineering**: Alex
- **Waste Management**: Sophia, Jaeha

Team Approach

Project History

Focused on educating high school students in Chicago about global warming

Provided basics for the presentation, brochures and surveys

Addressed five main topics: fossil fuels, skeptics, alternative energies and climate engineering

Obstacles

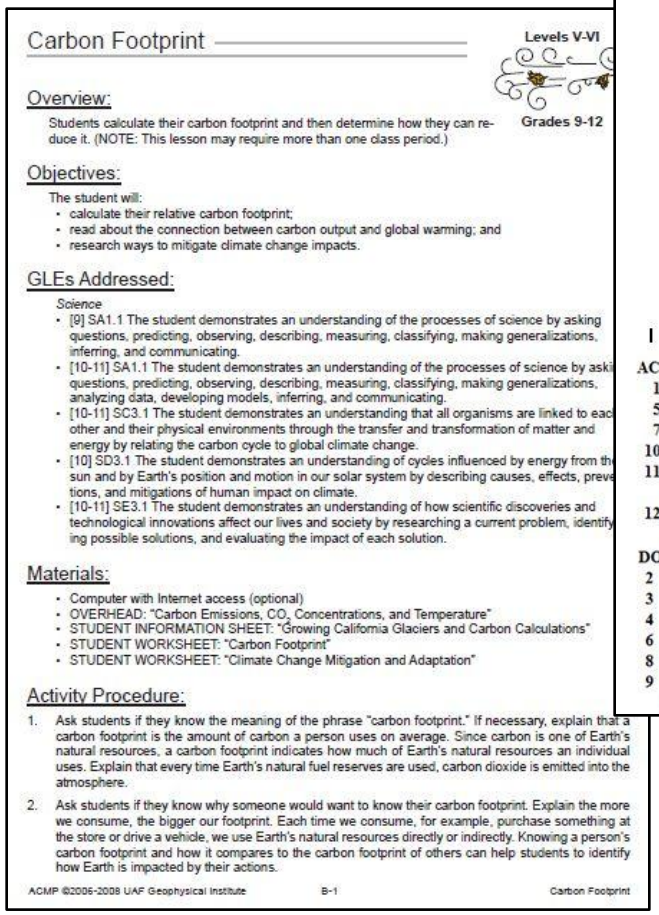
- Finding interested contacts and schools
- Coordinating presentations to fit each member's schedules
- Transportation to and from presentation locations
- Communication among team members

Achievements

- Updated and added topics to make a more cohesive and effective presentation and brochure
- Created a different presentation for younger audiences
- Incorporated our presentation into school's curriculum

  "Legacy Program"
- Established contacts for next semester's Camras Special Project

Achievements



Carbon Footprint

Levels V-VI

Grades 9-12

Overview:

Students calculate their carbon footprint and then determine how they can reduce it. (NOTE: This lesson may require more than one class period.)

Objectives:

The student will:

- calculate their relative carbon footprint;
- read about the connection between carbon output and global warming; and
- research ways to mitigate climate change impacts.

GLEs Addressed:

Science

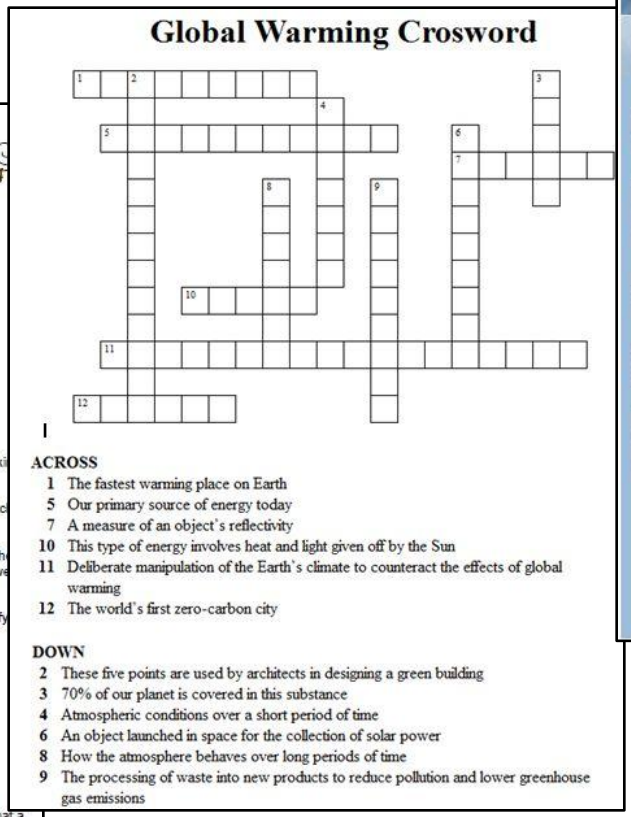
- [9] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [10-11] SA1.1 The student demonstrates an understanding of the processes of science by aski questions, predicting, observing, describing, measuring, classifying, making generalizations, analyzing data, developing models, inferring, and communicating.
- [10-11] SC3.1 The student demonstrates an understanding that all organisms are linked to eac other and their physical environments through the transfer and transformation of matter and energy by relating the carbon cycle to global climate change.
- [10] SD3.1 The student demonstrates an understanding of cycles influenced by energy from th sun and by Earth's position and motion in our solar system by describing causes, effects, preve tions, and mitigations of human impact on climate.
- [10-11] SE3.1 The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by researching a current problem, identify ing possible solutions, and evaluating the impact of each solution.

Materials:

- Computer with Internet access (optional)
- OVERHEAD: "Carbon Emissions, CO_2 Concentrations, and Temperature"
- STUDENT INFORMATION SHEET: "Growing California Glaciers and Carbon Calculations"
- STUDENT WORKSHEET: "Carbon Footprint"
- STUDENT WORKSHEET: "Climate Change Mitigation and Adaptation"

Activity Procedure:

1. Ask students if they know the meaning of the phrase "carbon footprint." If necessary, explain that a carbon footprint is the amount of carbon a person uses on average. Since carbon is one of Earth's natural resources, a carbon footprint indicates how much of Earth's natural resources an individual uses. Explain that every time Earth's natural fuel reserves are used, carbon dioxide is emitted into the atmosphere.
2. Ask students if they know why someone would want to know their carbon footprint. Explain the more we consume, the bigger our footprint. Each time we consume, for example, purchase something at the store or drive a vehicle, we use Earth's natural resources directly or indirectly. Knowing a person's carbon footprint and how it compares to the carbon footprint of others can help students to identify how Earth is impacted by their actions.



Global Warming Crosword

ACROSS

1 The fastest warming place on Earth
5 Our primary source of energy today
7 A measure of an object's reflectivity
10 This type of energy involves heat and light given off by the Sun
11 Deliberate manipulation of the Earth's climate to counteract the effects of global warming
12 The world's first zero-carbon city

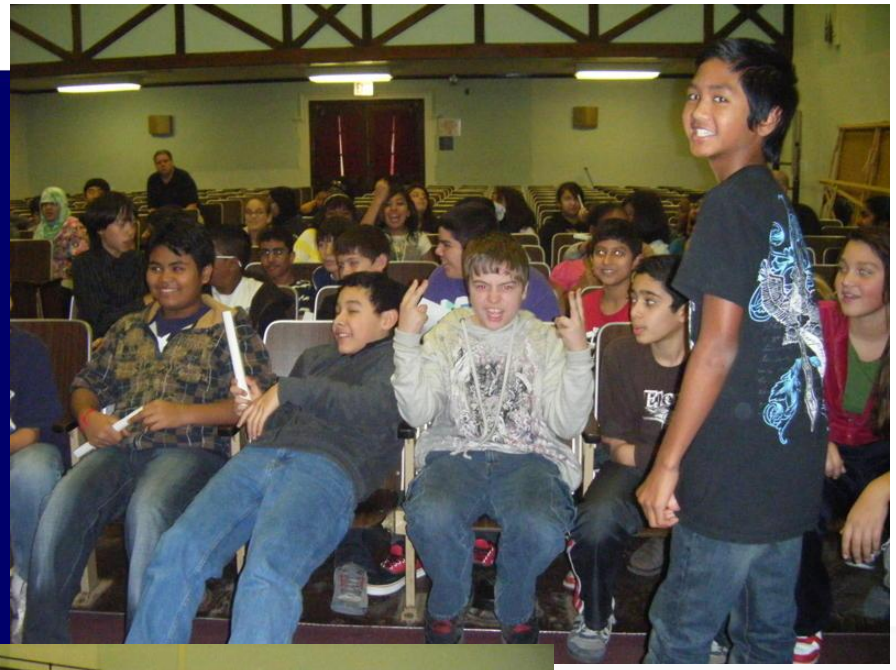
DOWN

2 These five points are used by architects in designing a green building
3 70% of our planet is covered in this substance
4 Atmospheric conditions over a short period of time
6 An object launched in space for the collection of solar power
8 How the atmosphere behaves over long periods of time
9 The processing of waste into new products to reduce pollution and lower greenhouse gas emissions

- Increased communication and interaction with the audience

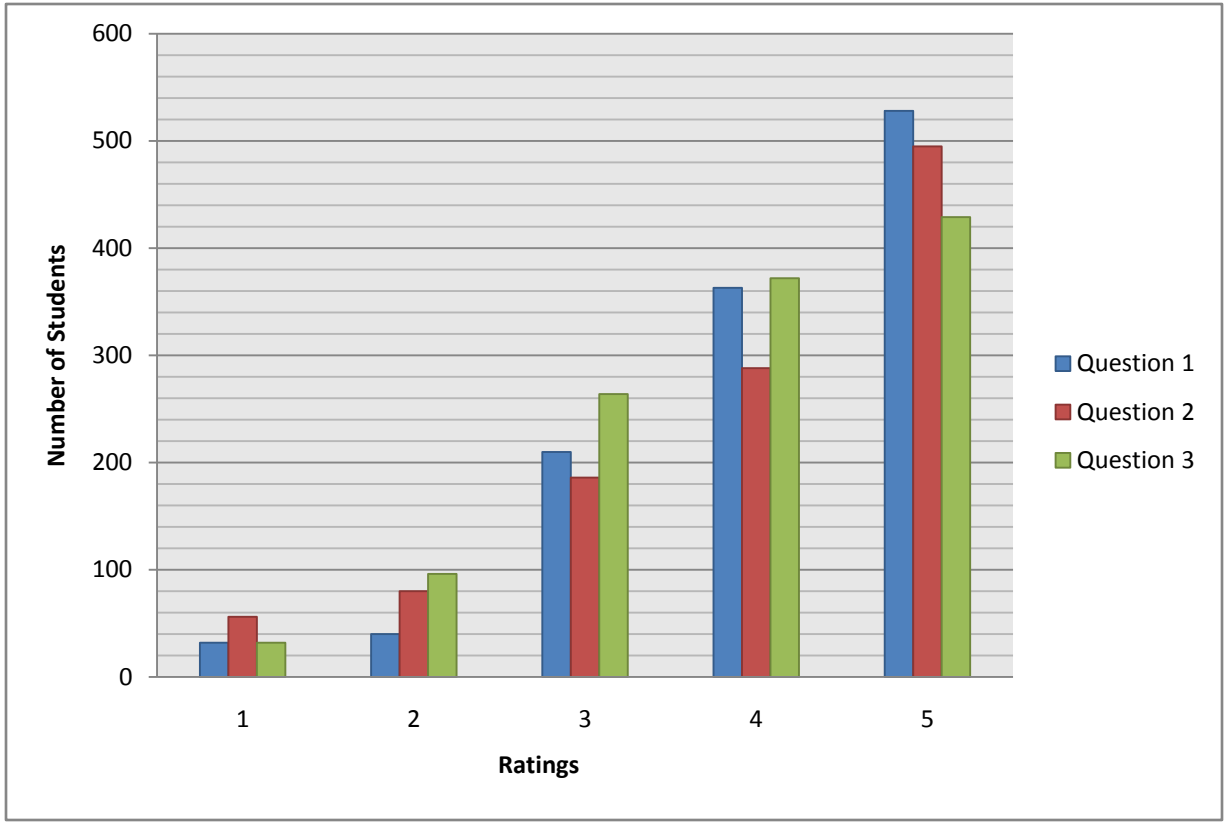
Jeopardy

Global Warming	Greenland & Potable Water	Innovation	What Can You Do?	Believers or Skeptics?
$100	$100	$100	$100	$100
$200	$200	$200	$200	$200
$300	$300	$300	$300	$300
$400	$400	$400	$400	$400
$500	$500	$500	$500	$500



Achievements

- Presented to over 1100 students and received positive feedback



Q1: How informative was the presentation?

Q2: How interesting was the presentation style?

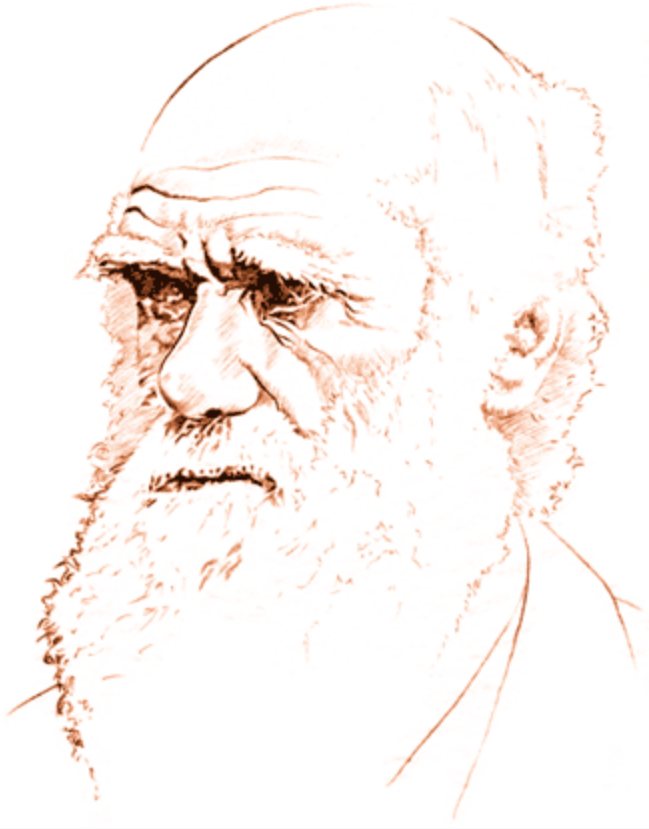
Q3: How much did the presentation increase your awareness of global warming?

Future Plans

- Conclusion of IPRO 331
- Continuation of global warming project in grade and high schools
- Adaptation of IPRO 331 into a Camras special project

•Further research space solar satellites
•Continue global warming and community outreach presentations
•Add voice-overs to past IPRO 331 Powerpoints
•Expand IPRO 331s wiki
• Creating a live broadcasting presentation

THANK YOU



“It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change."

- Charles Darwin