

I PRO 331

Global Warming & Community Outreach Final Report

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Executive Summary

The main goal of IPRO 331 is to create awareness in the community about global warming. The issue of global warming was not really paid any attention until the late 1980s and early 1990s although there were papers published on the subject in the 1930s. Even now some people have only heard of the idea of global warming, but don't even have a grasp of the science behind it. We want to raise awareness because it is a very important issue to understand. During the coming years people will need to make important decisions concerning this issue and they should be fully informed before making these decisions. We set aside goals at the beginning of the semester which we felt were important. Some of them included reaching a larger and more diverse audience, developing public speaking skills, providing an objective view of the issue, and giving the audience a way to contact us for further information. The goal of providing an objective view for the topic was also an ethical issue we faced among others.

To reach the goals we set for the semester, we first assigned the following tasks to all of our members: presentation and contact leaders, minute taking, creating budget, printing, contacting the IPRO office, scheduling, and organizing transportation. After everyone knew their positions, we started doing research to update last semesters PowerPoint presentation, adding a new "skeptics" section. Every member of the IPRO was responsible for contacting schools and organizations to schedule presentations. After each of our presentations, we analyzed the results of our survey and discussed how we could improve.

After presenting to 918 people, we learned that our presentation was targeted more towards older audiences. Nevertheless, we consistently received good feedback. The team encourages next semester's IPRO to reach out to even more people, and to be prepared to start scheduling presentations sooner. The team has created a contact list to make it easier for next semester's team to schedule.

Purpose and Objectives

Objectives

The main purpose of IPRO 331 is to increase awareness about the causes and consequences of global warming and potential solutions for its effects. This semester, the main IPRO worked closely with two other emerging IPROs: one designing a metric for measuring CO₂ absorption by various vegetation, and the other investigating people's motivations for investing in green technology. All three projects depend on each other to give a comprehensive analysis of global warming.

Global Warming Outreach

The main goal for the semester was to reach out to as many people as possible, presenting objective facts about every aspect of global warming. To accomplish this, we first had to learn about this issue. Splitting up into groups, we researched the topics of alternative energy, views of the skeptics, and climate engineering. Our first objective was to revise last semester's presentation to include a new section and more recent information. This was critical since new data about global warming is always being produced. We wanted to develop a more involved presentation that would appeal to a wide range of age groups. The second objective was to present the information in an unbiased way, stressing the importance of conservation and alternative energies. The third objective was to reach out to at least 1000 people this semester. Another one of our objectives was to keep a detailed record of our progress throughout the semester. We wanted to create surveys to give out after each presentation to keep track of the number of people we presented to, and to help us improve our presentation. Our fifth objective was to create a working website and email address that people could contact for more information. This, along with the sixth objective to revise the IPRO brochure, allowed us to keep in touch with interested teachers and students. Our final objective was for each team member to develop better public speaking skills. Public speaking is an important skill to develop because it is utilized in many different professions.

Organization and Approach

Throughout the semester when tasks needed to be completed the two team leaders would decide what the best course of action was. Some tasks would require small groups while other tasks could be accomplished individually. For example, the task which required breaking up into smaller groups was the PowerPoint presentation. The presentation was made up of four groups with two-three members in each group. Each of the four groups had to work together to research their topic and update the slides from the previous semester. The research process involved finding up-to-date information while making sure it was coming from a credible source. One of the research methods which were used was obtaining the most recent copy of the IPCC Assessment Report. The basis of the report is peer reviewed scientific articles. While the report is somewhat outdated (2007), the panel is working on a newer version of the report which should be released in September of 2014. Other research methods which were used in obtaining information were the internet and books. We felt that the internet was a good source because it is continually updated providing the most up-to-date information. Books were given to us by Dr. Lykos and Carol DeBiak and we used those because they have been a part of this IPRO before and we know that they would steer us in the right direction. The tasks which could be accomplished by just one individual were the brochure and the website. Although the brochure and website were not a group task, the remaining members did give feedback and ideas of how to improve them.

A. Scheduling Presentations and Brochure

The contact leader of the group was in charge of assigning schools and organizations for the team members to contact. Contacts were given out in the beginning of the semester once the PowerPoint Presentation was completed. Each team member tried to get into contact with these locations through email or by telephone. This proved to be a difficult task because contacts were not always responsive and also had no availability for a presentation.

Once the brochure and website were completed they were used as tools to help us

describe to our contacts what IPRO331 was all about. The brochure had a brief summary of each of the four subgroups and a way of getting in touch with us to set up possible presentations. On the other hand, the website had links to our actual presentation in case teachers wanted to make sure that the presentation was age appropriate and to get a better idea what we were trying to get across to our audience. Also the website included links to PowerPoint presentations done in CHEM 410 that broke down the first working group of the IPCC Assessment Report. These presentations included voiceovers that summarized the entire 1000 plus page documents.

B. Presentations Given (as of 4/9/2010)

Location	Presenters	Total Attendees
De LaSalle High School	Haien, Sapna, Hashem, Kamil	90
Thomas Jefferson Junior High School	Arjun and Sapna	342
Rotary Near South	Kamil and Sapna	11
Schaumburg High School	Arjun and Daria	50
Downers Grove North	Arturo, Hashem, Sapna, and Haien	363
Little Village	Arturo	62
Elgin High School	Arjun, Daria, and Kamil	64
Total		982

Table 1: List of presentation locations and team members present

The table shown above gives a brief look of where we presented and what teams members took part in that particular presentation. The team member who initially contacted the location would work with the rest of the team to figure out who would be available on a given presentation. The number of people reached throughout the semester was 918. Overall the audience reception was positive and most locations were interested in having us come back at some later point in time to give more presentations. Also this semester we handed out post-presentation surveys to track our improvement and the feedback of the audience. Although there were some audience members that did not take the surveys seriously, we felt that it the best way to gather feedback

Analysis and Findings

A. Research Findings

The IPRO team has been able to reach out to the Chicago land community. By presenting at various schools and organizations, the team was able to spread awareness about Global Warming. The five sub-topics included the consequences of Global Warming, fossil fuels, alternative energy, climate engineering and Skeptics. We were able to accomplish our goal of spreading awareness of global warming. During the presentations, the team also offered ideas of simple tasks people can do to save energy. At the end of each presentation, the presenters gave out a survey to get feedback from the audience about the presentation and to work on improvements.

B. Major Accomplishments

The team improved the presentation from last semester by focusing more on presenting scientific facts and proof. We added a new section in our presentation about the people who are skeptical about global warming. A new brochure was made that better presented our goals for this semester. We also re-launched the website for the IPRO with links to articles related to the subject. We also created an e-mail and a google group for the IPRO to make communications easy. By the end of the semester, we anticipate presenting to a total of about one thousand students.

C. Graphs

The following graphs were prepared based on analysis of survey results. To see the survey questions, please refer to appendix 4. These graphs show that our scores on questions 1 and 3 improved as the semester progressed. Our score on question 2 fluctuated throughout the semester, however. We think this is because our presentation was not modified to appeal to the interests of different age groups. As can be seen from figure 2, the 18+ age group enjoyed our presentation more on average than the other age groups. Finally, the overall frequency of responses on the survey shows that we did do a good job of presenting. Majority of the score are a 3 or higher.

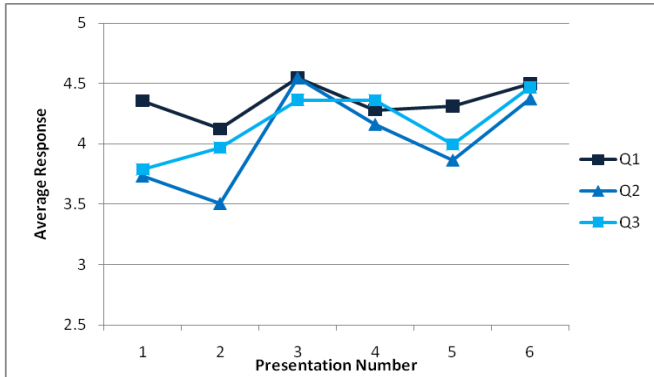


Figure 1: Average response to survey questions as the semester progressed

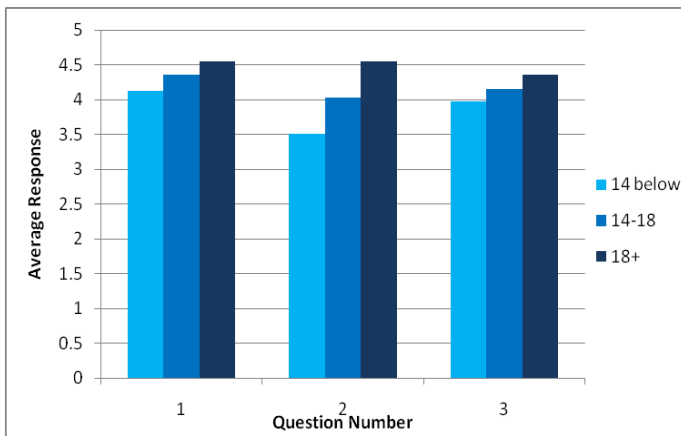


Figure 2: Average response to survey questions organized by age group.

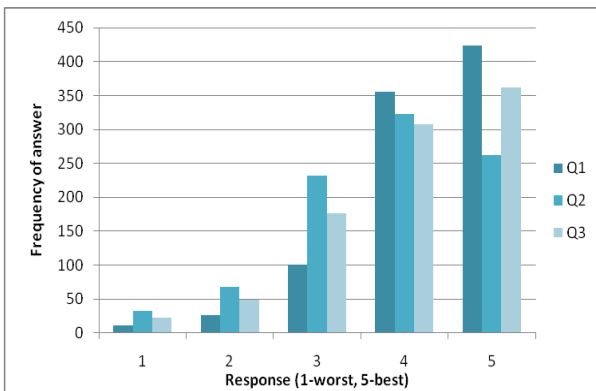


Figure 3: Frequency of answer to the survey questions.

Conclusions and Recommendations

A. Conclusions

The main objective of this IPRO is to build on the previous semester's presentation in order to educate the audience about the cause, impact, and responses to global warming, and to give presentations to the community on global warming. Our IPRO accomplished this goal, with a total of 7 different locations for presentations, and reaching an audience of over 900 people. Our team also added one more new sub-topic, which was "the skeptics", and also expanded on a sub topic that was added by previous semester, which was "climate engineering". We also worked with two emerging IPROs within our main project. One of the emerging IPROs was Carbon sequestration and the other one was Sustainability motivation.

We would like to thank our Faculty advisor, Professor Peter Lykos, for his devotion to the mission of this IPRO: to spread knowledge about global warming and its research to many individuals throughout the community. We would also like to thank Carol DeBiak, Susan von Leuschner and Lidia Calcaterra for their support and helpful advice during this semester.

B. Recommendations

Next semester's IPRO331 should try to expand their audience by reaching to different age groups students and people. It would be great to start presenting at elementary and middle school age children because children are the future of this planet. It would be also great to make new presentation slides to attract younger audiences. The next IPRO should try to create a voice-over PowerPoint to reach out to more communities and actually make this a global outreach, where the group is able to send out the presentations and not be there physically yet still have an impact on the issue of global warming. Also the next IPRO should start the contacting process right away to minimize schedule conflicts and to maximize the potential for the semester. They should also start learning and studying the presentation slides as soon as possible. Every member in the IPRO should understand and memorize every slide so that presentation schedules can be put together that work around future team members' schedules.

Appendices

A1. Budget

Item	Description	Cost(\$US)
Transportation	Gas, Parking, Tolls	200
Printing	Brochures, Surveys, Questionnaire	150
Miscellaneous	Food, snacks, Prizes...etc	150
	Total	500

A2. Team Members

- a . Team Leader: Sapna Desai
- b . Contact Leader: Kamil Bober
- c . Transportation: Arjun Jani
- d . Minutes: Daria Haznar
- e . Freshman Intern: Arturo Gozalez
- f . IPRO Office Contact: Haein Cho
- g . Budget : Hashem Abu-Amara

A3. Contact List

Contacts:

- Illinois Science Teachers' Association
- Lincoln Park High School
- Holy Trinity
- Kenwood Academy High School
- Oakbrook Rotarians
- Bloom High School
- Naperville Central High School
- Nequa Valley High School
- Von Steuben
- Near South Rotarians

- De La Salle
- Carl Sandburg High School
- Whitney Young
- Camras Scholars at IIT
- Little Village
- Lake Park High School
- Wheaton North
- Schaumburg High School
- Conant High School
- Jones College Prep
- Downers Grove North
- Downers Grove South
- Thomas Jefferson Junior High
- Curie High School
- North Side Prep

A4. Feedback Survey:

1. How informative did you find the presentation?
(Least) 1 2 3 4 5 (Most)
2. How interesting was the presentation style?
(Boring) 1 2 3 4 5 (Very interesting)
3. How much did the presentation increase your awareness of global warming?
(Least) 1 2 3 4 5 (Most)

A5. Outside of the Brochure

IPRO 331

Who are we?
We are a team of undergraduate students from the Illinois Institute of Technology. We come from different backgrounds and majors, providing different views and ideas. The Interprofessional Project Program is a way for students to learn as a team while brainstorming to solve a real world problem. Students are also able to learn project management skills and communication skills.

Our Purpose
We intend to spread the facts about global warming to raise awareness as this issue becomes increasingly more important.

How can you contact us?
If you would like to learn more about our presentation or schedule a presentation at your site please contact us at:
ipro331s10@iit.edu



IPRO SPRING 2010

Illinois Institute of Technology
3300 South Federal Street
Chicago, IL 60616
E-mail: ipro331s10@iit.edu
Website: <http://www.iit.edu/~ipro331s10/>

IPRO 331 SPRING 2010

Global Warming and Community Outreach

Educating people about the scientific facts concerning global warming



Global Warming Is Not Cool...

A6. Inside of the Brochure

What Is Global Warming

The average surface temperature of earth has increased more than 1 degree Fahrenheit since 1900, but since 1970 the rate of Global Warming has increased threefold. Experts agree that human activities, mainly the release of greenhouse gases like carbon dioxide from smokestacks, tailpipes, and burning forests, are probably the dominant force driving the trend.



Effects of Global Warming

The consequences of global warming are the decrease in the Earth's snow and ice cover, which would increase the global absorption of solar radiation. This will significantly melt the land ice and raise sea levels. Average temperature in the Arctic is rising twice as fast as elsewhere in the world. In Alaska, temperatures have increased an average 3.0 degree Celsius between 1970 and 2000. This increase in temperature poses a threat to the ecosystems in the polar regions. Species such as the polar bears are facing endangerment because the ice is melting their habitat. The Gulf Stream that bathes Britain and northern Europe in warm waters from the tropics has weakened dramatically in recent years, a consequence of global warming that could trigger more severe winters and cooler summers across the region, scientists warn today.



Climate Engineering

Climate engineering involves proposals to deliberately manipulate the Earth's climate to counteract the effect of Global Warming from Greenhouse Gas emissions. Proposals of this sort include ideas such as carbon dioxide capture from the atmosphere and methods of solar radiation management such as stratospheric aerosols. Climate engineering is the cutting edge of climate research and development and is still in very early stages. It will take many years for any of these proposals to get implemented but they will be the subject of massive research in coming years. While such approaches could be effective, it is very important to note that the potential of climate engineering should not divert efforts from reducing carbon emissions overall.



Alternative Energy

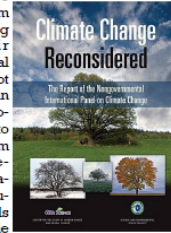
There are many alternative fuels which can be used to obtain energy. Using crops high in cellulose, sugar or vegetable oil can form biofuels which create less CO₂ and get better gas mileage. Nuclear fission is a resource that can be utilized to obtain emission free energy. Nuclear fission entails the act of splitting atoms to release large amounts of energy. While nuclear energy is a great resource, its main short-



coming is the disposal of radioactive waste. Other forms of energy—such as wind and solar energy—function without fuel. Wind energy is also emission-free and government subsidies are available for its use. Solar energy converts radiant energy from the Sun (the main source of energy for our planet) into useable energy.

The Skeptics

Skeptics have been around from the beginning making their claims that Global Warming is not caused by human activity. They provide evidence to support the claim that measurements of temperature are not accurate and models do not provide reliable projections of future climate change. Other evidence for the view of skeptics is that Earth's temperature was warmer in the past and today there are regional variations in climate change. They believe increases in CO₂ do not cause global warming, and the effects of CO₂ can be more beneficial than harmful.



What should we do?

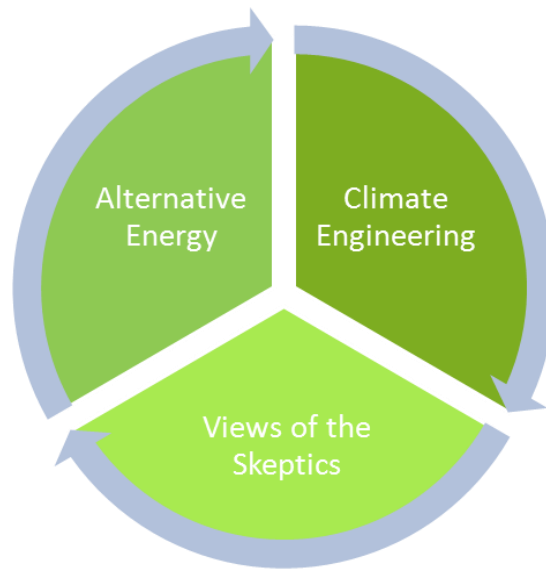
Whether or not global warming is caused by human activity, developing new energy sources and becoming more efficient is still crucial. For example, the amount of fossil fuels is quickly declining and prices of non-renewable energy sources are increasing. Some ways to become more efficient are to reduce the use of electricity by unplugging unused electronics and switching to compact fluorescent light bulbs.

If you would like to learn more ways you could help out or are just interested in learning more about Global Warming, visit our website at:

<http://www.iit.edu/~ipro331s10/>

A7. Research Subgroups

- Haein Cho
- Sapna Desai



- Kamil Bober
- Arturo Gonzalez
- Arjun Jani

- Hashem Abu-Amara
- Daria Haznar