

I PRO 331

Global Warming and Community Outreach

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Team Members

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Objectives

- Evaluate and incorporate previous presentation feedback into new methods of addressing the scientific aspect of global warming. This primarily includes subdividing the issue into four major aspects that contribute to this effect.
- Present material to a larger and more diverse audiences, including schools, community centers, libraries, non-profit organizations, and other possibilities.
- Focus on solid, scientific data from credible sources that define why and how global warming is occurring, rather than discussing the politics and economics that surround the issue.
- Create a platform for this IPRO to continue in the future, using resources and feedback received from the current semester.

Background

- The suspicion of global warming went under investigation starting in the early 20th century. German scientist Guy Stewart Callendar was the first to compile international temperature recordings from other scientists to conclusively state that the Earth's temperature had indeed risen between 1890 and 1935 by as much as half a degree Celsius. The findings were confirmed by the U.S. Weather Bureau's Division of Climate and Crop Weather. Callendar was also the first to propose the idea that carbon dioxide emission by the burning of fossil fuels leads to the greenhouse effect. This paved the way for future climate research.
- The Intergovernmental Panel on Climate Change (IPCC) was first established in 1988. In 1990, they released their first report concluding that the Earth's temperature had risen, however discrepancies remained in the role of industry versus natural processes. The IPCC's latest report, released in 2007, conclusively states that serious effects of global warming have become evident.
- Al Gore brought the issue of global warming to the forefront of American homes with his Academy Award-winning documentary "An Inconvenient Truth", released in 2006. Leonardo DiCaprio also released his documentary on the state of the natural environment, "The 11th Hour", in 2007.
- IIT Professors Michael Gosz and Peter Lykos developed a Microsoft PowerPoint presentation that they delivered in Western Springs on February 4, 2007. This lecture focused on the actual scientific findings behind the proclaimed numbers attached to the media and news coverage of global warming. It also focused on the multiple chemical components causing Earth's temperature to rise significantly. The presentation was non-political, setting up the basis for IPRO 331 and the need for educating others on the concrete science components of global warming.
- IPRO 331, Global Warming and Community Outreach, began in the fall of 2007, advised by Professor Lykos with the help of Carol DeBiak, from Galvin Library. During this term, the IPRO group successfully compiled a 50 minute presentation covering a vast majority of the scientific analysis of global warming. They presented in teams of two people each at De La Salle High School at the end of the semester, giving students a pre- and post-test to determine the effectiveness of

the lecture and collect feedback. The main comment was that the presentation felt rushed and over-loaded with information, due to the many topics it covered.

Methodology/Brainstorm/Work Breakdown Structure

A. Define the Problem

- The team's initial problem is to determine how to create a more effective and concise presentation while still addressing the large amount of scientific areas of research focusing on global warming. This involves possible rearrangement of the original PowerPoint and audience feedback from the first presentation. The second concern is to broaden the team's audiences from high schools to other groups in the Chicago-land area, including (but not limited to) community centers, churches, libraries, museum, non-profit organizations, and more. These organizations must be contacted for possible interest in the topic.

B. Problem Solutions

- The first step is to evaluate the original presentation and subdivide it into four categories. Approximately two to three team members can work on each category. Mainly using the original presentation material, new PowerPoints should be developed within each subdivision, essentially creating four focused lectures. This allows for a more evenly paced lecture that audience members can follow and understand.
- In order to create a broader audience base, multiple organizations must be contacted. To do so is a very basic trial and error process. First, a contact list can be generated by research on the internet or word of mouth from IIT faculty and staff. Second, after contacting these organizations, the team needs to evaluate whether there is general interest in any of the topics or not. If interested, that organization should be made aware of the team's available presentations, and a potential date can be set.

C. Testing of Problems

- Evaluation procedures will be very similar to last semester's IPRO. Pre- and post-tests will be handed out to the audience prior to the presentation. They will be useful in determining whether this new tactic of focused lectures is better than a general presentation.
- To determine progress on contacting new organizations, updates will be given regularly by a team of two members leading the outreach initiative. These updates will be recorded in the team minutes. Any confirmations will lead to the team presenting for that specific audience.

D. Documentation of Results

- Pre- and post-tests will be administered and collected at the beginning and end of each presentation. These will be kept on file for future IPRO groups.
- Progress on community outreach will be documented in the team minutes for every meeting. If any organizations confirm a date for presenting, either a verbal or written agreement, most likely e-mail, will be reached.

E. Analysis of Results

- After presentations are complete, pre- and post-tests will be read and discussed within the team. A list can be compiled of what the team did well during the presentation, and what can be improved. The main interest is to determine if the focused lectures are indeed better than the general overview.
- The team will also discuss the audience, in terms of how receptive they were and if they would present again to them. This will also be recorded and put on file for future IPRO reference.

F. Deliverables

- The IPRO deliverables throughout the semester will be a small group effort that the entire team later reviews. For each deliverable, a team of two will create and generate a comprehensive draft that the entire team can review and edit during a meeting. Final revisions will be made, and turned into the IPRO office.

Expected Results

- The main expectation for this IPRO is for various communities in the Chicago-land area to better understand the scientific data and facts that conclude Earth's temperature is indeed rising. This will be done through the team's explanation of events during the presentation.
- It is the team's hope that a significant difference will be observed between the pre- and post-tests administered, in that audience members will have a better understanding of the topic.
- The only product resulting from this IPRO would be the PowerPoint presentations themselves, however these are at the digression of the IPRO members as to whether they will be available for public use or not.
- Potential outputs after this IPRO include gaining knowledge ourselves on the topic of global warming, and becoming better communicators and public speakers.
- The expected results will directly address the 'problem' the audience faces in understanding the scientific research backing global warming. Any questions that arise can hopefully be addressed by team members, or given further resources to find an answer. Our final goal/deliverable is not tangible; it is a measure of how well the audience perceives the information being presented.
- Our results will be a direct measure of the solution framework – it will determine whether four focused lectures are more efficient than one broad presentation. Based upon audience reaction and feedback, changes can be made to the presentation.

Project Budget

- Registration/Conference Fees
 - Fermilab Conference: February 29, 2008

| Attendants | Registration Fee |
|-------------------|-------------------------|
| Rohan Amin | \$30.00 |
| Carol DeBiak | \$30.00 |
| Harshill Parikh | \$30.00 |
| Yosra Shaaban | \$30.00 |
| Total | \$120.00 |

- Transportation Fee
 - *The transportation fees mainly involve the cost of gasoline needed to visit presentation sites. We are basing this price on a \$3.10 average per gallon. This is a prospective budget since presentation sites have not been confirmed. Actual receipts will be turned in at the end of the semester. Distances were calculated using MapQuest, and prices based on an average fuel efficiency of 27 miles per gallon.*

| Location | Round-Trip Distance | Price |
|---------------------------|----------------------------|--------------|
| Batavia, IL (Fermilab) | 90 miles | \$10.32 |
| UIC (Chicago) | 8 miles | \$0.89 |
| MSI (Chicago) | 8 miles | \$0.89 |
| Wheaton, IL | 62 miles | \$7.09 |

Schedule of Tasks and Milestone Events

- ✓ Feb. 5 – March 15 → create and perfect presentations
- ✓ Feb. 19 → First drafts of presentation material due
- ✓ Feb. 22 → Project plan due
- ✓ March 7 → Code of Ethics Due
- ✓ March 13 → IPRO midterm oral presentation
- ✓ March 14 → Midterm written report due
- ✓ March 15 – March 23 → Spring Break
- ✓ March 25 → Finalize presentation locations (time, date, etc.)
- ✓ March 24 – March 28 → Finalize presentations
 - Present to rest of IPRO group
- ✓ April 1 → Start presentations
- ✓ April 7 → Begin work on IPRO Day poster and presentation
 - One member from each subgroup
- ✓ April 18 → Meeting minutes due
- ✓ April 25 → Last day to turn in presentation/abstract for IPRO Day
- ✓ May 2 → IPRO Day

Team Member Assignments

| Name | Major | Year | Role |
|-------------|--------------|-------------|-------------|
|-------------|--------------|-------------|-------------|

| | | | |
|--------------------|--------------|-----------------|--------------------------------------|
| Rohan Amin | MBB | 3 rd | Polar Region Subgroup Leader |
| Suraj Chandrasekar | BME | 4 th | Outreach Leader CO2 Subgroup |
| Trevor Dickson | Architecture | 4 th | Solar Energy Subgroup |
| Ravi Iyengar | Biochemistry | 4 th | Secretary CO2 Subgroup Leader |
| Amber Juilfs | Chemistry | 3 rd | CO2 Subgroup |
| Thomas Kennedy | Mechanical | 4 th | IPRO Liaison Biofuels Subgroup |
| Lexie Manke | Architecture | 4 th | Solar Energy Subgroup |
| Natalie Mikosz | Architecture | 4 th | Solar Energy Subgroup Leader |
| Harshill Parikh | Electrical | 4 th | Outreach Biofuels Subgroup Leader |
| Yosra Shaaban | Biology | 2 nd | Polar Region Subgroup |

Designation of Roles

A. Assignment of Meeting Roles

- Minute Taker: Ravi Iyengar
- Agenda Maker: Ravi Iyengar
- Time Keeper: Amber Juilfs

B. Assignment of Status Roles

- Weekly Timesheet: Our IPRO will not have timesheets required for each individual team member. We feel our communication and dedication as a team will suffice for the semester.
- Master Schedule Maker: Yosra Shaaban
- iGROUPS: Thomas Kennedy