

ILLINOIS INSTITUTE OF TECHNOLOGY

**MIDTERM PROGRESS REPORT
IPRO 325**

Advisors: Prof. Ferguson & Prof. Schug

Developing affordable products for the rural poor of the world

IPRO 325 Mid-Term Progress Report

Section 1.0

REVISED OBJECTIVES

I PRO 325 has accomplished, in the first half of our I PRO, to research several dimensions that strain the world poor; Transportation, Energy, Shelter, Food, Water, Health, Communication, Employment, Social Structure, and Education. Our I PRO team has gathered and analyzed these dimensions according to several criteria that would determine which dimensions our second half of the semester should focus on. As a result our I PRO decided to focus the remaining semester half on expanding our research on Energy, Shelter and Water. Therefore, our next goals are to find several “solutions” within these aspects of poverty that future I PRO groups can focus further on. And we must also create awareness of the conditions of the world poor among faculty and students of IIT.

2.0. RESULTS TO DATE

I PRO 325 has identified three areas affecting world poverty that can be analyzed and further studied. The current goals and/or activities include researching in this three world poverty dimensions identified in the first half of the semester. The most efficient way of tackling this was concluded to be, dividing the I PRO 325 in three sub-groups each assigned the task of analyzing the different dimensions of their problem. The sub-groups are; **Energy, Water, and Shelter**.

Energy is headed by Eric Schamber and assisted by Arturo Aguirre and Di Hu. The current goals of the energy group are to research in different/alternative forms of power generation that can be implemented in helping the poor in the most efficient and affordable ways. The areas of research are; Biogas, Ethanol, Hydropower, Solar, Wind, and manually powered generators. The energy group will analyze quantitatively each of these sources. The criteria to be used will be; initial cost of the power generator, average energy produced per amount of time, the operating life of the device or method, and the maintenance required. The energy group will also analyze the data gathered to try to determine: the most efficient energy storage system, best source for lighting considering cost effectiveness and durability, best heating fuel source, best cooking methods, refrigeration and security.

The Energy sub-groups workload is further divided as follows: Eric will research further on Ethanol and Wind power, HuDi will research Hydropower and Biogas, and Arturo will research Solar and manually-operated generators.

The results are going to be made deliverable thru current formats already in place such as record keeping and sharing thru groups, power point group presentation, electronic mailing, and results will be made deliverable thru a power point presentation and a final report of the cumulative research. The research will help the energy group deliver suggestions on what aspects of energy future I PRO groups can concentrate on to develop further deliverable solutions to the consumer (the world poor).

Shelter is headed by Sara and assisted by Crystal, Tom and Cesar will be researching shelter. The shelter group will be researching four different problems pertaining to shelter and the world poor. These four areas are; temporary and transitional shelter, homelessness and permanent shelter, inadequate shelter, and the benefits and disadvantages of community based shelters. The work load has been divided as follows:

Crystal: Temporary and transitional Shelter.

Cesar: Homelessness and permanent shelter
 Sara: Inadequate shelter
 Tom: Community based shelters
 Tom and Cesar: Survey current students for future IPRO shelter research.

The Shelter subgroup will present their deliverables in the same fashion as the energy group (please read above in the energy group). The energy will also present the results of the survey that will be distributed by Tom and Cesar.

Water headed by Justin and assisted by Alex and Richard will focus on researching further on this dimension of world poverty stigmas. The water group is going to make a group PowerPoint Presentation on 10/26/06 examining in more detail the major aspects of the water problem. Richard initial report on the first half of the semester will be used as primary reference and the work load will be assigned as follows:

Access - Alex
 Irrigation & Availability (supply) - Richard
 Pollution (HAZMAT) & Sanitation – Justin

In conjunction, with the aspect investigation several groups that address the water problem will be researched such as; IDE, EWB, Klaraqua, WHO, Intl Water Mgmt Inst. And also schools addressing the problem: Purdue Univ., State Univ.s w/well endowed agricultural programs The water group will focus on schools within our Midwest region if possible and analyze these school as possible partners. The results of the researched gathered will be made deliverable in the same fashion as the energy group, for example; PowerPoint Slides will be made into 7 min presentation x3 team members = 21 min total. Focus on images, text limited to bullet pointed sentences - no paragraphs. We will combine our slides into a group presentation so collaboration & feedback is necessary. Some milestones of the water group are the following:

10/27/06 - 11/09/06:

We will look to focus our research towards possible partners and solutions. Contacts w/possible partner faculty may need to be established during this period.

11/9/06:

Power Point Presentation highlighting our findings and will have a more definitive idea of possible IPRO recommendations.

11/10/06 - 11/21/06:

Cumulative information gathered will be used to develop a group paper. It's intent will be to come up with 1-5 ideas for future IPROs. Proposals will be made that address concepts, proposed faculty to head, and other project partners such as other universities or majors within the IIT campus. A more polished presentation will be developed during this that highlights the aforementioned.

Section 3.0

Revised Task / Event Schedule

Task Name	Duration	Start	Finish	Resource
PHASE I: Research	41 days	8/24/2006	10/19/2006	

Individual Research	33 days	8/24/2006	10/9/2006	
Transportation	6.6 wks	8/24/2006	10/9/2006	Thomas Fra
Energy	6.6 wks	8/24/2006	10/9/2006	Eric Scham
Shelter	5.2 wks	9/4/2006	10/9/2006	Sara Miller
Food	6.6 wks	8/24/2006	10/9/2006	Arturo Agu
Water	6.6 wks	8/24/2006	10/9/2006	Richard She
Health	6.6 wks	8/24/2006	10/9/2006	Hudi
Communication	6.6 wks	8/24/2006	10/9/2006	Justin Harri
Employment	6.6 wks	8/24/2006	10/9/2006	Alexander F
Social Structure	6.6 wks	8/24/2006	10/9/2006	Crystal Rich
Education	6.6 wks	8/24/2006	10/9/2006	Cesar Sotelo
Group Research	28 days	8/24/2006	10/2/2006	
UN Reports	5.6 wks	8/24/2006	10/2/2006	Thomas Fra
Global Statistics	5.6 wks	8/24/2006	10/2/2006	Cesar Sotelo
Organizations	5.6 wks	8/24/2006	10/2/2006	Sara Miller
Schools/Institutions	5.6 wks	8/24/2006	10/2/2006	Alexander F
Engineers Without Borders	5.6 wks	8/24/2006	10/2/2006	Eric Scham
International Development Enterprises	5.6 wks	8/24/2006	10/2/2006	Richard She
				Cesar Sotelo
Present Project Plan	0.5 days	9/19/2006	9/19/2006	Miller
Learning Objective Test	1 day	9/21/2006	9/21/2006	All
Layout Definition	0.25 days	9/19/2006	9/19/2006	
Define PowerPoint layout	0.25 days	9/19/2006	9/19/2006	Crystal Rich
Define Paper Layout	0.25 days	9/19/2006	9/19/2006	Eric Scham
Group Reports	16 days	9/14/2006	10/5/2006	
Work in groups in class defining group plan	1 day	9/14/2006	9/14/2006	All
Work in groups in class finalizing presentation	1 day	9/28/2006	9/28/2006	All
Present Group Final Reports	3 days	10/3/2006	10/5/2006	
Universities	0.5 days	10/3/2006	10/3/2006	Alexander F
Organizations	0.5 days	10/3/2006	10/3/2006	Sara, Crystal
Problems	1 day	10/5/2006	10/5/2006	Arturo, Cesa
Individual Reports	0.5 days	10/10/2006	10/10/2006	
Criteria for Comparing all problems	0.5 days	10/10/2006	10/10/2006	Arturo Agu
Present Individual Problem Reports	8 days	10/10/2006	10/19/2006	
Energy	1 day	10/10/2006	10/10/2006	Eric Scham
Shelter	1 day	10/10/2006	10/10/2006	Sara Miller
Nourishment	1 day	10/10/2006	10/10/2006	Arturo Agu
Water	1 day	10/12/2006	10/12/2006	Richard She
Health	1 day	10/12/2006	10/12/2006	Hudi
Education	1 day	10/12/2006	10/12/2006	Alexander F
Transportation	1 day	10/17/2006	10/17/2006	Thomas Fra
Communication	1 day	10/17/2006	10/17/2006	Justin Harri
Income	1 day	10/17/2006	10/17/2006	Cesar Sotelo
Social Structure	1 day	10/19/2006	10/19/2006	Crystal Rich
Discuss Problems	1 day	10/19/2006	10/19/2006	All
PHASE II	28 days	10/24/2006	11/30/2006	
Define 2-3 Problems to Follow Through	18 days	10/24/2006	11/16/2006	

Problem Group 1	13 days	10/24/2006	11/9/2006
Problem Group 2	16 days	10/24/2006	11/14/2006
Problem Group 3	18 days	10/24/2006	11/16/2006
Looking at existing solutions to problems	18 days	10/24/2006	11/16/2006
Problem Group 1	13 days	10/24/2006	11/9/2006
Problem Group 2	16 days	10/24/2006	11/14/2006
Problem Group 3	18 days	10/24/2006	11/16/2006
Find potential partners	18 days	10/24/2006	11/16/2006
Problem Group 1	13 days	10/24/2006	11/9/2006
Problem Group 2	16 days	10/24/2006	11/14/2006
Problem Group 3	18 days	10/24/2006	11/16/2006
Group Presentations and Class Discussion	6 days	11/9/2006	11/16/2006
Problem Group 1	1 day	11/9/2006	11/9/2006
Problem Group 2	1 day	11/14/2006	11/14/2006
Problem Group 3	1 day	11/16/2006	11/16/2006
Create awareness	28 days	10/24/2006	11/30/2006
Bring in speakers	28 days	10/24/2006	11/30/2006
Publicity	28 days	10/24/2006	11/30/2006
Speaker Publicity	28 days	10/24/2006	11/30/2006
"Problem" Publicity	28 days	10/24/2006	11/30/2006
PHASE III	29 days	11/7/2006	12/15/2006
What can IIT do?	13 days	11/7/2006	11/23/2006
Problem Group 1	13 days	11/7/2006	11/23/2006
Problem Group 2	13 days	11/7/2006	11/23/2006
Problem Group 3	13 days	11/7/2006	11/23/2006
Present Group Reports	1 day	11/23/2006	11/23/2006
Problem Group 1	1 day	11/23/2006	11/23/2006
Problem Group 2	1 day	11/23/2006	11/23/2006
Problem Group 3	1 day	11/23/2006	11/23/2006
IPRO Day	1 day	12/1/2006	12/1/2006
IPRO Team Debriefings	1 day	12/15/2006	12/15/2006

Final Task Dates

10/10/2006: Individual problem presentation
 10/12/2006: Individual problem presentation
 10/13/2006: Group meeting to pick three problems
 10/17/2006: Pick new sub-teams
 10/19/2006: Fall break
 10/24/2006: Meet in sub-teams
 10/25/2006: Put up posters for guest speaker
 10/26/2006: Rough draft, presentation on Energy, Shelter, and Water
 11/2/2006: Conduct student survey
 11/6/2006: Guest speaker-Dr. Bernard Amadei

11/7/2006-12/23/2006: What can IIT do?
11/9/2006: Sub-team 1 presentation
11/14/2006: Sub-team 2 presentation
11/16/2006 : Sub-team 3 presentation
11/23/2006: Present group reports on what can IIT do
12/1/2006: IPRO Day
12/15/2006: IPRO Team Debriefings

Section 4.0

UPDATED TASK ASSIGNMENTS AND DESIGNATION OF ROLES

Phase I of our previous task assignments has been completed. To initiate Phase II we have broken up into the following subgroups.

A. Sub-Teams

1) Energy

Eric Schamber
Arturo Aguirre
Hu Di

2) Shelter

Sara Miller
Crystal Richards-Jimenez
Thomas Francescanneli
Cesar Sotelo

3) Water

Justin Harris
Alex Kircher
Richard Sheridan

B. Sub-Teams' Leaders

Eric Schamber - Energy
Sara Miller - Shelter
Justin Harris – Water

C. Sub-Teams' Responsibilities

Energy:

Different / Alternative forms of power generation (that the poor could use)

Shelter:

Identify areas of shelter and look at the problems with each, causes and effects, and what has already been done and what might be done by IIT.

Water:

Cover major aspects causing the water problem.

D. Sub-Teams Individual Responsibilities

Energy:

Eric Shamber - (Ethanol, wind power)

Arturo Agurrite - (solar, manually powered generators)

Hu Di - researching of biogas (try to find how much gas can be obtained from a specific amount of 'average' dung) and Hydropower (small scale).

Shelter:

Sara Miller - Inadequate shelter

Crystal Richards-Jimenez - Temporary and transitional shelter

Thomas Francescaneli - Community based shelters

Cesar Sotelo - Homelessness and permanent shelter

Water:

Justin Harris - Pollution (HAZMAT) & Sanitation

Alex Kircher - Access

Richard Sheridan - Irrigation & Availability (supply)

Section 5.0

BARRIERS AND OBSTACLES

I PRO 325 has encountered several obstacles and barriers. These obstacles are within one of three categories: Internal (within the subgroup), External (encountered along the research process), and creating awareness in IIT thru informative speakers. The internal obstacles encountered include effective communication within team members and sub-groups, time management and constraints of I PRO group members and also efficient deliverability of research results. These have been resolved by: reviewing them in weekly group sessions; improving slide presentations by practicing on how to present and improving the slide formats; improving information sharing thru “IGROUPS”, and distributing work loads accordingly and considerably. The external obstacles include unexpected research results such as the realization that the problem was too big as huge amounts of data were gathered. I PRO 325 resolved this issue by discussing it during regular I PRO group sessions concluding to change the end of semester goal and instead try to come up with a possible suggested solution that future I PRO groups can further research and analyze. Creating awareness in IIT by bringing speakers to IIT has been a major issue since it has been hard to get a hold of important speakers and book them before the semesters end. This issue has not been addressed, but the subgroup has made considerable efforts.