

# Illinois Institute of Technology

## IIT Sustainability Branding



Project Plan  
IPRO 311

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## 1.0 Abstract

The scope of IPRO 311 is to improve and enhance the image of Illinois Institute of Technology (IIT), both as an institution and a physical campus, in regards to sustainability, *green* practices and innovation. The focus of the Spring 2009 IPRO 311, which is the 4<sup>th</sup> semester offered, is on three main projects including:

- Historical research of the IIT archives and the discovery of innovative procedures developed at IIT.
- Consolidation of previous and current IPRO sustainability proposals in a book form entitled *Sustain-Your-Ability*.
- Designation of an area on campus devoted to both sustainability and to the history of IIT which is to be called *Sustainability Park*.

## 2.0 Background

IIT has been at the forefront of innovation long since it's induction as a university when Armour and Lewis University combined. Even with its long history of innovation, IIT struggles with its image as a sustainable campus. An example of this is the recent letter 'D' grade IIT received on its college sustainability report card<sup>1</sup>. The study is a comparative evaluation of sustainable activities in campuses across the United States and Canada. The goal of this IPRO is to come up with solutions to make IIT more sustainable and at the same time create a branding scheme to bring awareness to IIT's sustainable efforts. These efforts would help raise IIT's 'D' grade.

The first IPRO 311 was offered in the Spring 2008. The team was responsible for the conceptual plans for branding IIT as a sustainable campus. A design manual which was composed of many facets and ideas was developed to document the IPROs progress and present potential sustainable practices. The concept of "Greenstallations" was part of the conceptual plan.

The Summer 2008 IPRO course focused primarily on two ideas for campus sustainability which included green walls and the possibility of solar and nuclear power here on campus. The idea of a stand alone student work station which would be powered by natural energy sources was also proposed.

The most recent semesters IPRO team, Fall 2008, created a design for a solar workstation, several greenstallations, energy gauges for buildings, and a plan for permeable pavements. This IPRO team also contributed to the existing design manual for making IIT "greener." An online group on Facebook® was created that attempted to gather the attention and support from those of the student body who were in favor of new sustainability practices on campus.

The Fall 2008 IPRO also sponsored a contest for a logo of the IPRO to be used as the primary logo for all preceding and following IPRO extensions. The team hosted a series of seminars to reach out to the IIT community. The seminars featured guest speakers

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<sup>1</sup> The report can be viewed at <http://www.greenreportcard.org/report-card-2009/schools/illinois-institute-of-technology>.

regarding the topic of sustainability around the world and city and about things that can be implemented on the IIT campus. Fall 2008 IPRO's main focus was directed towards the design and construction of a solar powered workstation.

What each course of IPRO 311 has had to deal with and have continued to deal with are the fine lines between comfort and willingness to participate in paradigm shifts. Whenever new ideas and innovations are proposed concerning sustainability, new problems surface which relate to sociological, economical, or environmental perspectives. Where is the line drawn between comfort and necessity, necessity and cost, or cost and efficiency? These are all questions which are interrelated and will determine what is acceptable and what is not.

### **3.0 Team Purpose and Objectives**

The first goal set for this semester was to begin research on innovations developed at IIT and to find a way in which to share these ideas and innovations with the campus community. Much of the information to be researched is that of the Tech News articles which have been in print since the early half of the 20<sup>th</sup> century. By discovering and presenting the past, we can ensure the future of IIT by remembering our predecessors who have put this Institution on the innovative map.

The second goal of the semester was to continue the work that previous semesters had begun and to expand upon their ideas to continue the journey of branding IIT as a sustainable entity. With recognition to the letter D grade received on the IIT sustainability report card, this IPRO is to research ways in which to enhance the image of IIT on the microscopic, student, and macroscopic, campus, levels.

A summary of the main objectives are as follows:

#### Historical Representation

- Create and or research and existing database dedicated to IIT history
- Gather information pertinent to sustainability
- Mark and note innovations originating from the campus and/or individuals which graduated from IIT

#### Sustainability Branding

- Document new ideas and concepts related to sustainability
- Consolidate previous IPRO ideas and concepts into an easy to read reference? document
- Continue to develop upon previous IPRO work while remaining true to their original authors
- Consolidate projects with adjacent sustainability IPRO's

#### Campus Awareness

- Document historical findings in an easy to read manual
- Document IPRO 311 sustainability ideas and concepts from Spring 2008 to Spring 2009
- Conduct open conversation with the community (define community) regarding IIT and sustainability

#### 4.0 Methodology

The focus of this IPRO was to enhance the image of IIT, both as an institution and an intellectual community. To do this, we focused on sustainability, technology, and innovation here at IIT. We extensively researched the innovation and technology pertaining to sustainability at IIT while proposing our own ideas to encourage future development here at IIT.

To achieve this goal we opted to organize as three separate groups to focus on different facets of the overall goal. The groups were Marketing, Facilities, and Mock-up. Each subgroup was then responsible for their field of work, but interdependency was expected throughout the course.

The Marketing group focused primarily on the historical research and secondly on how to share this information with the community in an easy but effective manner. Research of the archives involved both digital and hard-copy analysis; the digital copies being available online at: <http://archives.iit.edu/technews/>.

The Facilities group focused with the campuses involvement with sustainable processes and innovations while the Mock-Up group focused on experimenting and testing ideas and concepts. In addition to testing ideas and concepts, the Mock-Up group also focused on proposing locations for the possible experiments. As the semester passed, the Mock-Up group shifted from being predominantly experiment orientated to quantitatively assessing possibilities on campus to present all the information found.

Each group contacted many sources in and around the campus to gather required information. The Marketing subgroup worked primarily with the individuals in charge of maintaining the Archives department in Galvin Library. The Facilities portion also extended beyond the IIT campus and contacted the Chicago Center for Green Technology to share our ideas and expand our information database regarding sustainable processes and ideas. The Mock-Up group worked on designing permeable pavement samples for the final presentation.

#### 5.0 Team Structure and Work Breakdown

##### Work Breakdown:

In The break down of the three groups was conducted as such:

##### Marketing

- Research pertinent information regarding IIT's past as an innovative hub
- Compile information in an easy to read yet effective manner
- Contact past and present IIT affiliates regarding news articles
- Gather information regarding possible speakers and seminars

##### Facilities

- Ascertain contact with the head of facilities and sustainability office to discuss issues on campus
- Contact outside agencies regarding sustainability and sustainability practices

- Develop and consolidate sustainability ideas into an easy to read manual

### **Mock-Up**

- Test both current and past ideas regarding sustainability
  - Permeable Pavement
- Lead building and design related projects
- Research and propose areas on campus suited for sustainability practices and initiations

Further group work break down in appendix\*

### **Team member work description:**

**Name:** **Alejandro Aguilar**

**Year:** 3rd

**Major:** Architectural Engineering

**Skills/Strengths:** Adobe Photoshop, Drafting, Drawing, Communications, Resourcefulness, Work Ethic

**Group:** Facilities

**Involvement:** Lead of *Sustain-Your-Ability* document. Continuing the research and compilation of sustainable processes.

**Name:** **Oladipo Animashaun**

**Year:** 4th

**Major:** Architecture

**Skills/Strengths:** AutoCAD, 3ds Max, Adobe Illustrator, Adobe Photoshop, Model making, Carpentry, Experienced team member of an architecture firm

**Group:** Mock-Up

**Involvement:** Experimental building and testing. Graphical rendering and developmental work for Sustainability Park.

**Name:** **Mark Chauhan**

**Year:** 4th

**Major:** Mechanical Engineering w/ Minor in Materials Science Eng.

**Skills/Strengths:** AutoCAD, Pro-Engineer, Windows Office Suite, SPSS Data Analysis Software, graphical presentation, analytical, teamwork, goal-oriented, diligent

**Group:** Mock-Up

**Involvement:** Building of permeable pavement housing unit. Proposition of Sustainability Park.

**Name:** **Seth Ellsworth**

**Year:** 4th

**Major:** Architecture; Business minor

**Skills/Strengths:** AutoCAD, 3ds Max, Adobe Illustrator, Photoshop & Dreamweaver. Strong communication and organization skills, experience working with a variety of materials

**Group:** Facilities

**Involvement:** Lead of communications with CGCT and facilities heads. Sustainability park proposition.

**Name:** **Crystal Glover**

**Year:** 4th

**Major:** Architecture

**Skills/Strengths:** AutoCAD, 3ds Max, Adobe Illustrator, Adobe Photoshop. Strong communication and organization skills

**Group:** Marketing

**Involvement:** Researching and compilation of historical archives. Campus wide outreach and communication of researched articles.

**Name:** **Kevin C. Krupp**

**Year:** 4th

**Major:** Architecture

**Skills/Strengths:** Model Building, Wood Shop, AutoCAD, Adobe Illustrator, Adobe Photoshop. Strong personal interaction skills and action oriented. Experienced model shop technician

**Group:** Mock-Up/Facilities

**Involvement:** Sustainability park lead. *Sustain-Your-Ability* cooperative. IPRO 311 communicating foreman.

**Name:** **Nim Patel**

**Year:** 3rd

**Major:** Biology

**Skills/Strengths:** Windows Office, Adobe Photoshop. Strong communication skills, timeliness in work, focused and motivated

**Group:** Marketing

**Involvement:** Researching and compilation of historical archives. Project report writer. Lead of communications for Tech News.

**Name:** **Colin Scheer**

**Year:** 3rd

**Major:** Humanities

**Skills/Strengths:** Researching, Writing, Adobe Photoshop. I am prompt in turning work, and work well with others

**Group:** Marketing

**Involvement:** Researching and compilation of historical archive lead. Project report writer.

**Name:** **Nader Tadros**

**Year:** 4th

**Major:** Architecture

**Skills/Strengths:** AutoCAD, Adobe Photoshop, Adobe Illustrator. Strong communication, motivational and interpersonal skills. Experienced scaled model builder and presentation developer

**Group:** Marketing

**Involvement:** Researching and compilation of historical archives. Lead of communication for past and present IIT affiliates.

## 6.0 Budget

Semester Budget:

	Amount (\$)
Permeable Pavement Samples	Donated
SustainYourAbility	30.00
History Book	30.00
Acrylic Boxes	242.07
Gas	49.28
Food	90.00
<b>Total</b>	<b>441.35</b>

## 7.0 Code of Ethics

### Law & Regulation

- Pressure: Completion of project by semesters end.
- Pressure: To construct models and experiments relevant to the IPRO in a fast and efficient manner.
- Risk: Potential disregard of proper citation while researching information pertinent to sustainability and innovation.
- Risk: During the final days of the IPRO, what has not been completed may lead to improper use of saws, drills, and provided equipment. This improper use may lead to fines and citations but may also lead to injury.
- Cannon: We, as a team, while accessing information and tools available on campus will adhere to both proper citation methods and safety regulations. While researching sustainable innovations, we will keep the safety of potential users and operates our number one priority.

### Contracts

- Pressure: To contact as many individuals as possible regarding sustainable practices here on campus; including both the Marketing and Facilities sub groups.
- Pressure: To document, in full, all pertinent information that is being researched and recorded.
- Risk: While contacting individuals who have not yet responded to calls and or emails, multiple attempts at communication can lead to invasion of privacy and harassment.
- Risk: In attempts to properly portray all that is possible, private or previously non-disclosed information may be presented without the consent of the individual or party original involved with the information.
- Cannon: While efficiently and thoroughly gathering information, we as a team shall respect the privacy of our contributors, their rights to remain unlisted or not included in the report. Confidentiality of all participants will remain secure.

### Professional Codes

- Pressure: To present and research as much information with as much detail as possible by IPRO day.
- Pressure: To consolidate information pertinent to the *Sustain-Your-Ability* document .
- Pressure: To present information on innovative material.
- Risk: While researching history and sustainable practices, information may be either misrepresented or credit may not be given to the original proprietor.
- Risk: The representation of work that is not the “product of a student’s sole independent effort, such as using the ideas of others without attribution and other forms of plagiarism” (Pg. 31, IIT Student Handbook).
- Risk: Material presented may possibly endanger the safety and well being of an individual.
- Canon: IIT has established a strict stand for academic honesty which involves any actions which may be deemed as cheating. As an IPRO we will uphold these values by citing all references and documents used during the formulation of our respective material.  
The NPSE also presents a Code of Ethics for all engineers which states that the safety, health and well being of the public be maintained. We will and have abided by NPSE standards as well as the IIT Student Handbook throughout the course of the semester.

#### Business and Industry Environment

- Pressure: Find quick and effective means of data research and consolidation.
- Pressure: Present original information without extensive knowledge of external projects.
- Risk: Presentation of radically conflicting data.
- Risk: Find loop holes through regulatory processes including.
- Canon: The team will work within designated guidelines while remaining truthful and non-confrontational about information presented.  
Information presented shall be for the purpose of furthering the study of sustainability, both past and present, and be representative of our sole efforts.

#### Community

- Pressure: Completion of ideas and results before a determined deadline.
- Risk: Failure to review information as whole which may be misleading or harmful to the immediate community.
- Risk: Present information without detailing the possible benefits and or the possible complications.
- Canon: As a team we will present all information in meticulous detail to effectively express our ideas and research in a positive manner conducive toward sustainability without bias.

#### Personal Relationships

- Pressure: To be sure information solely of an individual’s effort is represented in a well formatted and proper manner.
- Risk: Unfair or biased criticism of another persons work
- Risk: Disregard for the consistence of another persons work
- Risk: Biased help towards certain individuals and against others

**Canon:** Treat each team member as an integral facet of the project. Introduce a strong sense of interdependency to effectively portray all information being disclosed at the semester end.

### Moral Values

**Pressure:** To withhold a social balance between working, studying, and external activities.

**Risk:** To opt out of meetings without conversation or deliberation due to personal beliefs or bias.

**Risk:** Pressuring someone to meet at an unsuitable time that has either a religious or personal meaning.

**Risk:** Miscommunication or no communication at all regarding deadlines and meeting times.

**Canon:** To respectfully adhere to request of team mates by communicating all actions and meetings. Meeting times and request shall also be worked around the current schedules of team members.

## 8.0 Results

The intended results through the course of this semester based upon the divisions of Marketing, Mock-Up and Facilities; were taken directly from our midterm report. Green indicates completed aspects, while purple indicates a incompleion or negligible process.

### Search through the archives (Marketing group)

- Research names of inventors from IIT
- Compile an informational listing
- Find means of advertising this info to the campus

### Quick improvements (Facilities group)

- Put in place rain sensors
- Prevent sprinklers from running in rain, snow, freezing temperatures
- Insulation for buildings
- Prevent leaks near windows

### Seminars (Marketing group)

- Invite lecturers to speak about green technology
- Possibly create our own presentation about IIT going green

### Advertise IIT history (Marketing group)

- Research past and present innovations here at IIT
- Create posters or fliers
- Banners for street poles
- Conduct Patent search related to IIT

### Workstation chair (Design group)

- Work on the current prototype

As a group we chose to focus on multiple aspects instead of limiting ourselves to one individual idea.

The actions, ideas, and propositions seen through to fruition throughout the semester; separated by IPRO divisions are summarized below:

#### Marketing

- Compilation of historical archives
- Contact of IIT students featured in Tech News
- Complete and efficient cooperation with Archive Employees
- Consolidation of material in book format

#### Mock-Up

- Research and testing of Permeable Pavement efficiency
- Proposition for Sustainability Park
- Mapping and layout of Park
- Proposal to Mies Van Der Rohe Committee concerning Sustainability Park

#### Facilities

- Contact head of Facilities concerning campus sprinklers
- Contact of the Director of Campus Energy and Sustainability concerning the campus Master Plan
- Contact the Chicago Center for Green Technology for possible exhibit
- IPRO 311 Master Plan reworked into *Sustain-Your-Ability* document which features both large and small scale solutions to sustainability and sustainable branding.

The Marketing group focused on research at the Galvin Library archives collecting information based on press releases and Tech News articles. A list of alumni names was also acquired and a computer program to search through the names for patents was intended. The program was never created, and the patent search never occurred because the fellow IPRO student in charge dropped the class section. All of the news articles were compiled initially to be published in current Tech News articles to let inform the campus of IIT's past achievements.<sup>2</sup> One Tech News article was published as an introduction to IPRO 311's efforts, but no further articles were published. Instead, a book was published displaying all of the events in chronological order. The plans for a sustainability seminar weren't realized either due to the long hours spent researching at the archives.

The Facilities portion of the IPRO also successfully completed a book entitled *Sustainyourability* which documents past and present ideas and concepts from IPRO 311 courses. The book details large and small scale approaches to complexities involving sustainability and sustainable practices. While constructing the book, a trip to the Center for Green Technology was made to discuss the possibility of an exhibition. Contact was made and multiple discussions followed as a result. In addition to the contacts made with CGT, we were able to open up a dialogue with Joseph Claire, Sustainability Department Head, discussing their master plan for the campus; this discussion with Joseph Claire also helped us focus on the direction and proposals put forth in the *Sustainyourability* document.

The Mock-Up subgroup was able to propose the idea of a plot of land on campus which could be dedicated to sustainability and to the research conducted by the marketing

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<sup>2</sup> See Appendix A and B for the compilation of tech news articles and press releases gathered by the Marketing Subgroup.

subgroup. Throughout the semester, many permeable pavement companies were contacted to discuss prices and sample requisitions. Only a few companies had provided samples and shown an interest in our experiments; experiments including the freeze thaw durability of the pavements and permeability. An experimental container to conduct the permeability tests were planned and completed by IPRO day. The experimental container tested the permeability of the concrete by pumping a constant flow of water through the specimens.

The prepared documents of this IPRO will also be on showcase at the Chicago Center for Green Technology in the near future. This opportunity not only gives the IPRO program city wide publicity, but brands IIT as an institution dedicated to sustainability.

## **9.0 Obstacles**

Throughout the semester, each subgroup encountered numerous challenges to overcome. The Marketing subgroup found the time schedule for the archives to be inflexible. The archives didn't have a computerized database accessible to students either making the data collecting process significantly longer. The archive assistants were cooperative with the subgroup's requests, but the work was slow. Due to the major amount of time consumed at the archives, little time was left available to organize a sustainability seminar. Potential seminar speakers couldn't participate on such short notice before IPRO day.

The time spent at the archives also prevented the subgroup from originally presenting its findings in Tech News articles. Efforts to publish the subgroup's findings began in late March. A list containing all of IIT's alumni names was acquired, but the computer program meant to search through the names for patents was never created as The IPRO student assigned to this task dropped the class, .

Additionally, IIT had separate departments dedicated to the topic of sustainability; they already had a plan in place that the Marketing subgroup was unaware of until the later half of the semester. IIT had published a hall of fame book and a list of Alumni Committee Award recipients, but the subgroup was unaware of them until the later half of the semester. Knowledge of their existence would have useful in collecting historical information.

At the beginning of the semester when initial contacts were being made with facility heads at IIT, the facilities portion of the IPRO was unable to schedule meetings due to time constraints and prior engagements. We began contacting Joseph Claire to schedule a for sure meeting time which worked well for both IPRO 311 and Joseph Claire.

While having trouble contacting facility heads at IIT, the mock-up portion of the IPRO was also having difficulty regarding talks with permeable pavement companies. Since permeable pavements involve relative high labor costs, the acquisition of samples involved either financial restrictions or practicality concerns; practicalities pertaining to mix truck delivery for low scale use.

## **10.0 Recommendations**

The following recommendations should be considered for future projects. There is still plenty of archival research to do, but this IPRO has made a significant start. Additional work includes review data collected and present it to the campus through Tech News, or

other ways, to create public awareness. IPRO 311 has laid the foundation to be able to present IIT's historical accomplishments. The historical book can act as a source book for the future IPRO classes to use for publishing material. A list of patents would also enhance the historical data already collected. A computer program to search through all the alumni names would be ideal to make patent searches go quicker. It would be wise for the future IPRO to organize its seminar from the beginning

While increasing the efficiency of patent searching and document browsing in the Archives, we would also recommend a tapered scope to aim the IPRO in a definite direction rather than in many areas. At the beginning of the semester it was difficult to communicate openly as to what should be done, what needed to be done, and how things should be addressed from past IPRO work. The amount of work completed by past IPRO 311's clouded our vision and put us in the mind set that we needed to contend with their efforts and push for just as much and more, to show we had proposed new and innovative ideas, in the same time frame.

## 11.0 Resources

The following list of resources are not separated by subgroup but are listed by the level of usage and information.

- All press releases were collected at the Galvin Library archives. Tech News articles were acquired at <http://archives.iit.edu/technews/>
- Chicago Center for Green Technology  
[www.cityofchicago.org/Environment/GreenTech/](http://www.cityofchicago.org/Environment/GreenTech/)
- NARUC/FERC Smart Grid Collaborative. "Proposed Funding Criteria for the ARRA Smart Grid Matching Grant Program and the ARRA Smart Grid Demonstration Projects" & "Smart Grid". Federal Regulation and Oversight of Energy. March 19<sup>th</sup> & 26<sup>th</sup>, 2009.
- Miller, Charlie. "Extensive Green Roofs" [Online], Available at: <http://www.wbdg.org/resources/greenroofs.php>. October 2nd, 2008.
- Ludwig, Art. Water Storage. Oasis Design. 2005.
- MWH Global Employee Books. Webpage detailing books containing SustainYourAbility content:  
[http://www.mwhglobal.com/MWH/knowledgebase/Book\\_Recommendations.html](http://www.mwhglobal.com/MWH/knowledgebase/Book_Recommendations.html)
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## 12.0 Acknowledgements

We would first and for most like to thank Catherine Bruck and Ralph Pugh for their assistance at the Galvin Library archives; without them, research would've been an overwhelming task which could itself be spun into an IPRO to help catalogue the massive amounts of information.

We extend our thanks to the employees at the Chicago Center for Green Technology for their cooperation, enthusiasm and display space they have set aside for IPRO 311. The work conducted in our IPRO was very influenced by what we had toured at CCGT and allowed us to better understand the purpose of sustainability.

In addition, we also thank the previous installations of IPRO 311 for conducting very thorough and well documented ideas and concepts.

**13.0 Appendix A: list of Tech News articles**  
(These articles can also be found at [http://archives.iit.edu/technews/.](http://archives.iit.edu/technews/))

Utilities Conduct Wind Researches

11/1/1932, Volume 10, Issue 7, Page 2, Column 4

Wind Tunnel Is Work Of Many

10/4/1943, Volume 32, Issue 12, Page 1

New IIT Wind Tunnel (photo)

11/29/1943, Volume 33, Issue 4, Page 5

New Model Wind Tunnel Is Put Into Operation In Roesch's Lab

9/5/1944, Volume 36, Issue 8, Page 1

Central Vault To Distribute Power Soon

12/17/1947, Volume 46, Issue 13, Page 1

Power Plant Progresses

5/13/1949, Volume 48, Issue 24, Page 4

The New Power Plant (photo)

9/23/1949, Volume 49, Issue 1, Page 4

Power Plant Booms Higher And Nearer To Completion

9/23/1949, Volume 49, Issue 1, Page 4

Power Plant Is Alive With Activity

10/21/1949, Volume 49, Issue 5, Page 5

Improvement In Armour's Campus: New Standards

10/14/1941, Volume 28, Issue 3, Page 2

Steam Plant Nears Completion

12/9/1949, Volume 49, Issue 11, Page 4

ARF Extends Gas Engine And Heat Labs

2/16/1951, Volume 52, Issue 1, Page 8

Power Conference To Hear Big Shots

3/16/1951, Volume 52, Issue 4, Page 8

15th Annual Power Conf., March 25-27

3/6/1953, Volume 55, Issue 14, Page 1

New Transformer Idea Saves Time, Manpower

10/16/1953, Volume 56, Issue 3, Page 4

Westinghouse Starts Atom Power Program

5/21/1954, Volume 56, Issue 24, Page 5

Wind Tunnel Construction at IIT On Air Force ContractIIT Conducts Annual Power Conference

4/1/1955, Volume 57, Issue 17, Page 4

Powerama Boon to Chicago

9/23/1955, Volume 58, Issue 1, Page 2

Annual Power Conference Sponsored by 14 Schools

10/7/1955, Volume 59, Issue 3, Page 1

Keep Tech Green

1/13/1956, Volume 59, Issue 13, Page 2

American Power Conference Schedule for Chicago March 21

3/9/1956, Volume 60, Issue 5, Page 1

Use of Solar Energy Lecture Topic Nov.5

11/2/1956, Volume 61, Issue 8, Page 5

Ford Windshields May be Gold-Plated in Near Future

12/7/1956, Volume 61, Issue 11, Page 3

Heating Plant Difficulties Keep Students Awake In Class (Photo)

2/14/1958, Volume 64, Issue 1, Page 1

Dismiss EE's ME's To Attend Power Confab

3/21/1958, Volume 64, Issue 6, Page 1

Greener Bog?

5/9/1958, Volume 64, Issue 12, Page 2

Buildings and Grounds Department Presents Power Plant Open House

9/19/1958, Volume 65, Issue 1, Page 1

American Power Confab Features Rockwell Talk

3/20/1959, Volume 66, Issue 7, Page 1

Illinois Tech to Sponsor American Power Confab

3/11/1960, Volume 68, Issue 5, Page 4

Slate American Power Confab March 29 to 31

3/25/1960, Volume 68, Issue 7, Page 5

NSF Gives Armour Grant For Heat Transfer Study

10/21/1960, Volume 69, Issue 6, Page 5

IGT Designs New Cell Power Pack

1/6/1961, Volume 69, Issue 14, Page 3

Nearly 2,000 See Power Conference

3/24/1961, Volume 69, Issue 21, Page 4

ARF Develops New Efficient Fuel Cell

11/10/1961, Volume 71, Issue 8, Page 6

Central Heating System Plant Services Entire Campus Area

11/9/1962, Volume 73, Issue 9, Page 8

Ceramics Solve Space Situation by Mike Curran

11/8/1963, Volume 75, Issue 9, Page 4

ME Department Gets New Name; Now Has New Mach 3 Wind Tunnel

11/15/1963, Volume 75, Issue 10, Page 4

IITR Establishes Clean Water Research Center

2/12/1965, Volume 78, Issue 1, Page 4

IGT Hosts Symposium over Fuel and Energy Economics

4/2/1965, Volume 78, Issue 8, Page 5

IIT Adopts New Method for Purification of Water

4/2/1965, Volume 78, Issue 8, Page 5

IIT Receives \$44,000 NASA Grant For Study of Behavior of Liquid Fuels

12/2/1966, Volume 81, Issue 10, Page 1

Ecology Garbage

3/20/1970, Volume 88, Issue 7, Page 5

Urban Vehicle On Display

12/1/1972, Volume 93, Number 13, Page 1

Steamer Car Gets 20 Mpg

3/22/1974, Volume 96, Number 9, Page 2

IT steam engine nearing completion (Photo)

3/22/1974, Volume 96, Number 9, Page 2

No Energy Lack; Just Crisis Says Expert

3/22/1974, Volume 96, Number 9, Page 5

Energy Crisis Revisited

9/13/1974, Volume 97, Number 3, Page 2

Old Ruts, Old Paving

11/15/1974, Volume 97, Number 12, Page 1

IIT Sponsors Power Conference At Palmer House

3/14/1975, Volume 98, Number 9, Page 2

Science Fair Visits IIT

4/1/1977, Volume 102, Number 10, Page 6

IITRI--They Do

9/12/1977, Volume 103, Number 3, Page 6

Mobile unit used for on site jetting experiment (Photo)

9/12/1977, Volume 103, Number 3, Page 7

The Weather Conspiracy

9/26/1977, Volume 103, Number 5, Page 6

IIT Physics Professors Recognized for Research

10/24/1977, Volume 103, Number 9, Page 6

IITRI Gets New \$1 Million Wave Laser

2/27/1978, Volume 104, Number 6, Page 1

While IIT has no specific "Sun Day" plans, solar research is a major part of the IIT curricula(Photo)

4/17/1978, Volume 104, Number 11, Page 3

IITRI-Fiat Team Work on Car Efficiency

4/24/1978, Volume 104, Number 12, Page 5

Sund Day Schedule

5/1/1978, Volume 104, Number 13, Page 3

President Martin spoke of investing in the future of IIT (Photo)

5/8/1978, Volume 104, Number 14, Page 1

Tertiary Oil Recovery Project

9/25/1978, Volume 105, Number 4, Page 3

Environmental Eng. - Cleaning Up After Man

4/9/1979, Volume 106, Number 7, Page 1

Waste Energy Recovery Studied - by Dond Teaney

10/8/1979, Volume 107, Number 7, Page 1

Plastics breakthrough at IIT

9/28/1987, Volume 123, Number 5, Page 3, Column 1.

IIT prof advises EPA

9/26/1988, Volume 125, Number 3, Page 1, Column 1

Sunraycer's Coming

10/10/1988, Volume 125, Number 5, Page 1, Column 1

Plans For New Power Plant

8/28/1989, Volume 127, Number 1, Page 1, Column 1

Recycling Pilot Program

11/6/1989, Volume 127, Number 11, Page 1, Column 1

**13.0 Appendix B: list of Archive Press Releases**

4.12.44

The Chicago Molded Products Company gives a \$5,000 research grant to IIT on the study of Dielectric Heating. The new process used high frequency waves, which would replace hot air and steam, to produce heat. Faculty members and students involved in the project were Bernard Parmet, Arthur Kott, Dr J.E. Hobson, Paul G. Andres and Dr. Edward J. Biceck.

8.10.1945

IIT contributed to the atomic energy program. The importance of the contribution and the names of people were not made public.

12.8.1943

Dr. Hans J. Reissner drops his teaching responsibilities to pursue his invention of the first variable pitch propeller. The propeller with blades rotated around their long axis to change their pitch.

10.2.53

IIT is provided with Support for a one-year study to determine the source of air pollution in Chicago area.

3.8.54

Dr. William A. Lewis, a professor of IIT's electrical engineering department, states, "If the lessons of the industrial age teach anything, they teach that the only real insurance for the future security is research and development toward preparation for the future", in his effort to convince electric utility companies to place high priority on scientific research. In particular he called for an industry-wide amount of cooperation in focusing on electrical production of nuclear energy.

3.30.54

Armour Research Foundation of IIT plays a major role in the first publication since 1918 that references the Ozone. The book was titled Bibliography of Ozone technology and comprised of six volumes. Clark E. Thorp, manager of the chemistry and chemical engineering departments of the Armour Research Foundation, oversaw the publishing of the first volume which consisted of 266 analytical and 980 patents referenced on Ozone Research.

3.15.55

IIT develops a process, from a combination of previously est. fume control systems, that proves to be most efficient in cleaning up the waste gases produced during the manufacturing process of paint and varnish.

3.15.55

John C. Lee the Armour Research Foundation devises an instrument that accurately regulates the amount of CO<sub>2</sub> necessary to freeze antifreeze. This instrument prevented waste and reduced cost of future test of antifreeze.

3.17.55

A new style pump for use in vending machines is developed at the Armour Research Foundation. The pump was sanitary and splash proof which helped prevent liquid waste.

8.18.55

Edward G. Fochtman, a research chemical engineer at the Armour Institute of Technology, develops a plan to erase Chicago's air pollution problem. He outlined a procedure which involved testing a "pilot study area" so that a realistic attack on pollution could be conducted.

8.23.55

The Illinois Institute of Technology exhibits a home heating system of the future at Navy Pier. The heating system was designed by students and staff of the mechanical engineering department. The exhibit contained a model of a heat pump and a glass observation box for people to monitor temperature changes.

11.12.56

Structural Engineers from Armour Research Foundation determine how a building constructed of masonry materials will resist blasts from atomic and h-bombs without excessively increasing costs of construction.

11.29.56:

Dr. Robert W. Benson, Assistant Manager of the ARF physics research dept., help the Air Force locate airports in future and improve their production and operation. Coordinating flight schedule with weather conditions will help reduce flight noise.

12.6.56

Clark E. Thorp researches what is in a puff of cigarette smoke. A puff of smoke particles from filter tip cigarettes contain about half as many particles as does puff of plain ones. Gerhard Langer a chemical engineering research said the concentration of smoke particles was surprisingly high in a standard cigarette, 500 million particles in cubic centimeter.

5.31.57.

Armour Research Foundation at IIT simulates techniques before undertaking expensive engineering projects. Missile simulation and analog computer facilities were developed to use before running live tests. Shizuo Hori, headed work on a simulation facility for assessment of airborne systems. Studies were done in missile guidance systems, hydraulic systems, suspension systems and petroleum processes.

6.3.57

Armour Research Foundation at IIT develops a technique that produces titanium tetrachloride at a lower temperature, with higher purity and less cost. The result was useful for things such as combat aerial defense and skywriting.

6.24.57

Armour Research Foundation develops an "ice fog", an eliminator for engine exhaust fumes in the arctic.

7.29.58

Dr. Leonid V. Azaroff, a former IIT professor, shares his expert research and knowledge of radiology in a book he wrote called "The Powder Method in X-ray Crystallography"

3.27.61

Dr. Leslie R. Hedrick, a professor of biology at IIT, helps classify natural toxicity levels found in Lake Michigan. The professor also categorized the water into four types: high toxicity with low stability, stable toxicity with low potency, incipient toxicity activated by heat and no toxicity. Where heat decreases toxicity levels in seawater, Dr. Hedrick found that heat increased toxicity in three of the four stages in Lake Michigan.

4.7-11.61

IIT researches on organic semiconductor cells to study their electrical properties. Researchers thought at the time that organic cells could potentially be used for medical research and act as small, inexpensive computing machines; other potential uses comprised of photocells, electronic coolers and power rectifiers.

6.22.61

Samuel Radner and James Cooperman of the Armour Research Foundation goes to Lima, Peru to rid the air in the city of its foul fish odor. Air pollution in Lima was a problem due to fish meal producing plants. They removed the stench by employing the use of air scrubbing equipment.

8.30.61

A new high temperature solar cell is being developed at Armour Research Foundation for the United States Army Signal Corps under a \$56,500 contract. This solar cell was expected to increase the reliability of communications and telemeter systems on American satellites. The foundation produced these cells by “growing” crystals of a semi-conductor called cadmium telluride. It was expected to outperform silicon solar cells.

8.-.61

Dr. Morton Klein of the Armour Research Foundation develops a new fuel cell for space stations that would not require the need for turbines or generators. These cells would convert heat into electricity at an efficiency rate of over 50%.

10.24.61

A new highly efficient fuel cell is developed at the Armour IIT. The cell could supply electrical power at high temperatures and heavily radiated environments. Dr. Jack Bregman and Dr. Andrew Dravnieks, of Armour Research Foundation, headed the project. While these cells were primarily going to be used for space and military purposes, it was thought that these cells had the potential for the desalinization of water.

12.13.61

The development of a low-costing lightweight ceramic building material is made at the Armour Research Foundation; the material is based on fly ash (gray dust produced from coal-burning furnaces). It was estimated at the time that 10 million tons of fly ash were produced in American power plants annually. Trapping fly ash would prevent air pollution.

9.30.75

A team of IIT students creates a more efficient and less expensive solar cell for existing systems as part of a national competition. The IIT team made three innovations, sheets that trap and absorb solar energy, spacing of sheets for higher efficiency and inlet/exit devices to reduce mixing of hot and cold water.

7.23.76

Environmental Protection Agency awards \$236,500 to Pritzker Department of Environmental Engineering of IIT, to research the removal of toxic metals from industrial wastewater and develop standards for regulating the nature and amounts of toxic metals discharge by industrial

plants. The three goals were to identify pathways of industrial metals' removal in treatment plants, variables which control distribution and removal in treatment processes and to develop a model system for removal of metals in combined treatment plants.

4.18.77

Nineteen students at IIT build 70 foot by 80 foot solar collector prototype that could be used to power homes. The sun would heat up the solar collector to create steam; that steam would then conduct a tesla turbine generator.

1978

Herbet A. Simon winner of Nobel Prize in Economics in 1978 was an IIT political science professor from 1942-1949

5.10.78

IIT is involved in developing a 75-acre swamp in southern Illinois which will help with flood control and phosphorus removal.

7.17.78

We have in US 30-60 billion gallons of oil that has not yet been recovered by conventional means. Darsh T. Wasan, a chemistry professor at IIT, is developing guidelines for chemical processes leading to the economical recovery of trapped US oil.

8.3.78

IIT develops a "Venetian Blind" solar heater that uses salt to store the sun's heat. Dr. Lois Graham and James Stice, professors at IIT, along with a group of 7 students worked on this project. The device adjusted to suit any condition during the summer or winter. The panel was designed to be placed inside a south facing window, in such a way that its horizontal panels can be rotated like Venetian blinds.

2.27.79

IIT, headed by Dr. James W. Patterson, begins research on industrial pollution. The institute was granted \$195,000 for three years. They also installed a \$100,000 laboratory for corrosion research, complete with two state-of-the-art remote computer terminals. These computers would automatically monitor measure and evaluate the rate of corrosion in metal pipes.

7.3.79

In an effort to allow handicapped children interact with other children, IIT students develop a new recreational equipment system called "Playscape". "Playscape" was an inflatable pneumatic playground system that includes most typical playground features.

8.3.79

According to IIT research, Gasohol , a mix of regular leaded gasoline and 20 percent ethyl alcohol will increase your gasoline supply by approximately 20 percent. The conclusion was that the same power and mileage obtained with 100% gasoline can be obtained with 80% leaded gasoline and a max of 20% ethyl alcohol.

9.19.80

IIT names hall of fame

12.4.80

EPA gives the Pritzker Department of Environmental Engineering at IIT, money to form a national Industrial Waste Elimination Research Center. The focus will be on reducing and eliminating industrial wastes through innovations in industrial processing and development of recycling strategies.

4.14.81

IIT students from the Institute of Design won the first place prize in the International Design Competition. Their designs included a solar water purification system to heat up water and a waterless sanitary toilet system. Other designs also made included a portable milling/grinding unit, a two man portable dental care delivery unit and an oil extractor for sunflower, soybean and peanut oil.

2.22.85

Chief welding engineer at Illinois Institute of Technology Research Institute says infrared radiation will revolutionize fusion welding. Infrared sensing offers the potential for tracking and monitoring the quality of fusion welds and to automatically correct when necessary. The project continued from previous work for NASA in 1980 applying infrared technology to welding

7.29.87

IIT and IITRI join forces to develop treatment methods by forming the Center for Hazardous Waste Management. A study showed that very little of the EPA's \$50 billion budget was being spent on treating waste sites. The center would conduct research, develop improved waste management techniques, conduct seminars, and make information on the new technologies accessible to government clients.

7.29.87

IIT manages the Industrial Waste Elimination Research Center and the U.S. EPA Air Pollution Training Center. Researchers developed a precipitation method to remove certain metals from wastewaters and measure the absorption rates of toxic materials (from water and gas onto carbon and resins). IIT coauthored the EPA Technology Manual on Wastewater Disinfection Processes.

8.28.87

Selim Senkan, an IIT professor, invents an economical process of converting methane into ethylene and acetylene. His method allowed use of methane from any source.

11.2.87

IIT students win third place in the International Design Competition. They developed floating systems for water environments that would be used for: shipping, transportation, manufacture of products on water, produce food and convert wind, wave, solar and thermal-gradient energy into electrical energy. The students called their structures, "Aquatecture."

11.11.88

Pritzker Institute of Medical Engineering at IIT develops a way to implant a computer directed therapy system inside the body to monitor and control heart rhythm.

12.5.88

Assistant Professor Dr. Francisco Ruiz of mechanical and aerospace engineering at IIT receives Tanasawa award from the international conference on liquid atomization and spray systems. Using photographic techniques he studied the behavior of liquids like fuels atomized under high pressure. A model of how liquid jet at various velocities reacted with differing air densities in a high pressure chamber

## 2.6.91

IIT wins third place in the Natural Gas Vehicle Challenge. The competition's goal was to convert a quarter ton General Motor Sierra pickup truck to operate on compressed natural gas; it needed improved performance, fuel economy, and lower emissions. The vehicle had to cover 25 miles and drive at the speed of at least 45 mph.

## 1.17.96

Physics professors Leon Lederman and Ray Burnstein receive a grant to develop their Interactive Student Participation System by the National Science Foundation. The Interactive Student Participation System allowed students to use a wireless keypad to respond to yes or no or multiple choice questions presented by the professor. Students could participate more in lectures and give the professor immediate feedback on the understanding of the material. It reduced paper waste as well.

## 1.29.96

Dean Chaoman, of IIT develops a system of medical imaging that will significantly change mammography. Using synchrotron radiation, Chaoman harnesses a single energy monochromatic fan beam of light and scans the object through this beam.

## 2.23.96

IIT undergraduate students invent a product for BFGoodrich. The invention injects ozone into the intake of an engine using an ultra lean air fuel mixture, resulting in improved fuel economy and decrease in harmful emissions.

## 12.22.96

Robert Arzbaecher, an IIT Professor receives a patent for his invention to treat cardiac arrhythmias. The invention was an implantable medical device used to treat atrial fibrillation. The device was about the size of a hockey puck and it is used to monitor the hearts rhythm.

## 7.21.97

IIT receives a \$500,000 grant from the Max McGraw Foundation which increases its \$1 million endowment. This money would support the Energy, Environment and Economic program. Henry Linden, a professor of chemical engineering, was the holder of the McGraw chair and director of Energy and Power Center at IIT. (Note: this amount of money reflects the inflation of the times and not today's values).

## 6.9.98

Thomas Wond, director of the Microwave Lab at IIT, receives a U.S. patent for an invention that offers the potential for a two-way wireless microwave system for simultaneously transmitting video, audio and data.

## 7.6.98

Philip Troyk, of IIT, is researching the production of a prosthesis device which would allow the blind to see. The device required insertion into the brain. It electronically stimulated the brain and converted an original image into an electronic one which was transmitted to the visual cortex.