

**Objectives:****Original:**

Genetically modified crops have come to play an increasingly large role in our daily lives. Unfortunately these crops remain a mystery to much of the general population. For some, ideas about GM crops are exciting and represent hope for new potential in science and agriculture, they represent potential danger, and there are simply many unanswered questions.

Our goal this semester will be to create a new source of information about GM products and to provide information that will answer the many questions we all have about this important subject. To accomplish this, our objectives will be to:

1. Collect background information in an unbiased and comprehensive manner about laws and regulations regarding genetically modified crops.
2. Gather information about public opinion concerning GM crops.
3. Present facts about the processes and technologies that are used in this industry.
4. Create a database of known genetically modified crops, potential allergens, and traits in order to provide future IPRO's with a foundation of knowledge concerning GM crops.

**Updated:**

5. Collect information in relation to peanut allergens.
  - a) The group has decided to begin researching allergens specific of peanuts. It was decided that researching the peanut specifically will be most beneficial to subsequent IPROs. The future goal of this project will be to genetically modify peanuts and hopefully create an allergen free nut.

**Results to Date**

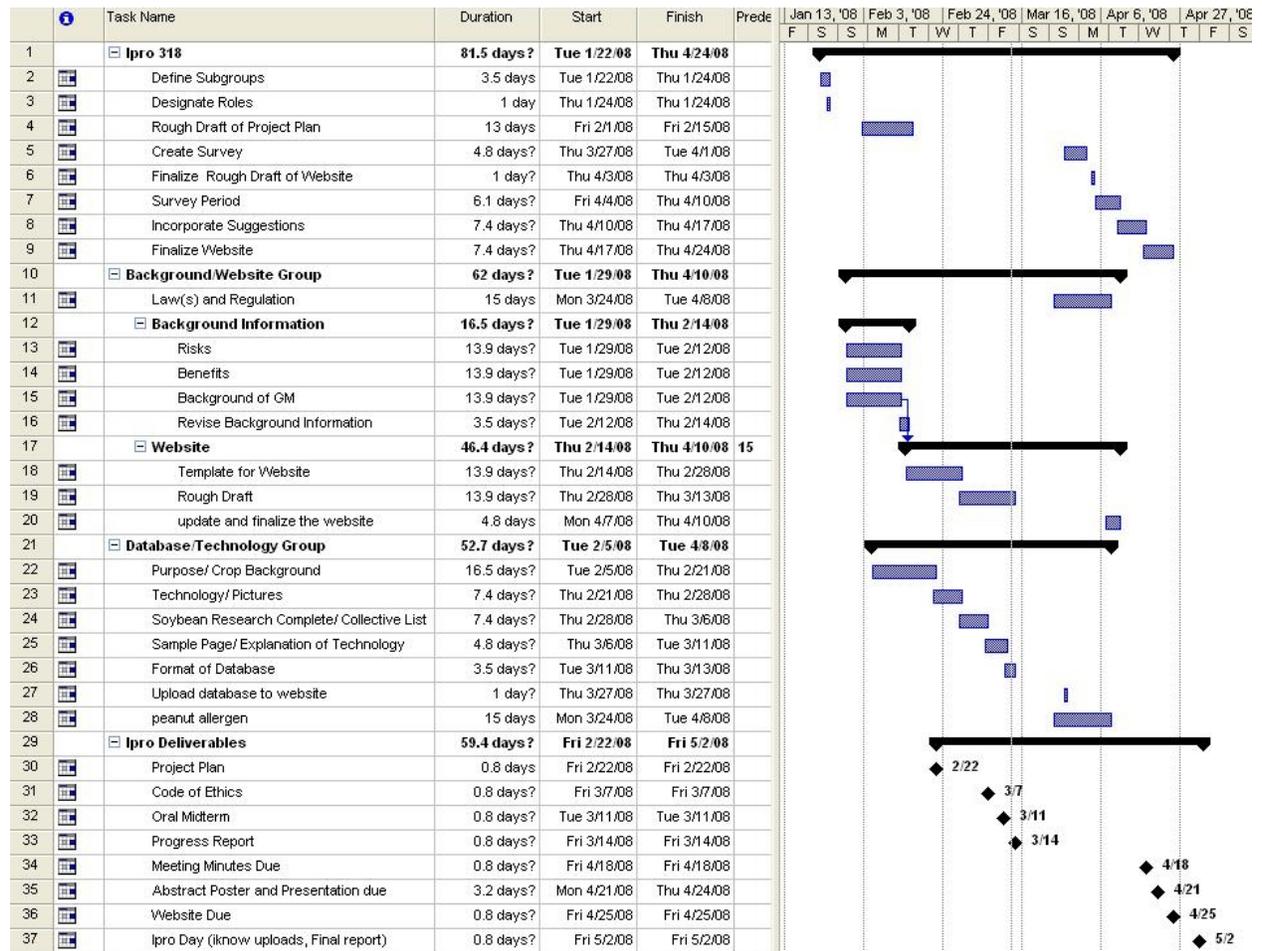
The team has completed a number of the projected results identified earlier in the project. There is no deviation from the expected results at this point in time.

1. The team has collected background information on genetically modified crops, including the history of genetically modified crops, benefits, and risks.
2. The team has collected information on corn, tomatoes, rice, wheat, and cotton including country of origin, background, technologies, major companies involved, and predominant countries doing research on them now.
  - a) These crops were chosen because they are the most predominant genetically modified crops in the United States.
3. The rough draft of the website has been created and uploaded onto the web.  
([www.iit.edu/~ipro318s08](http://www.iit.edu/~ipro318s08))
  - a) The website currently displays background information, risks, benefits, and team information.

*Design of a Genetically Modified Food Database***Revised Tasks/Event Schedule:**

1. The team has added two additional tasks:
  - a) Research of peanut allergens.
    - i. This will require an additional fifteen days of research to complete.
    - ii. Research for this portion will commence March 24<sup>th</sup> (See Chart 1).
    - iii. This will require the efforts of five team members.
  - b) Research of legal issues to include laws and regulations. This information will help subsequent IPROs to avoid legal issues that may arise.
    - iv. This research will require an additional fifteen days to complete (See Chart 1).
    - v. Research for this portion will commence March 24<sup>th</sup>
    - vi. This will require the efforts of five team members.
2. The addition of the above stated tasks has altered the dates for finalizing the website.
  - a) The altered time will allow for the new research on peanut allergens, laws, and regulations to also be uploaded to the website.
  - b) Finalization of the site is projected to occur between April 7<sup>th</sup> and April 10<sup>th</sup> (See Chart 1).

Design of a Genetically Modified Food Database



**Chart 1.** This chart illustrates the new work breakdown structure. This timeline shows a breakdown of each task the team will need to complete. The estimated time duration for each task is identified. The projected start and finish dates are also listed.

**Changes in Task Assignments and Designation of Roles and Team Organization:**

1. The team has elected a team member to manage the iGroups account. This team member will be responsible for the files uploaded to and maintenance of the iGroups account.
2. The team has also elected the team leader as the official weekly task creator. She will create and assign weekly tasks for each sub-team.
3. Each member has been assigned a new task since completing prior tasks. The sub-team leaders will remain the same.
  - a) The Background and Web page sub-team will be researching the laws and regulations that pertain to genetic modification of crops.
    - i. There will be 5 members assigned to this task (see Table 1).
  - b) The Database and Technologies sub-team will be researching allergens related to peanuts.
    - ii. There will be 5 members assigned to this task (see Table 1).

*Design of a Genetically Modified Food Database***Table 1. Updated Team Organization and Task Assignments with Designation of Roles**

<b>Team Member</b>	<b>Educational Background</b>	<b>Year</b>	<b>Skills/Strengths</b>	<b>Team Role(s)</b>	<b>Sub-team</b>	<b>Individual Tasks within subteams</b>
Jennifer Miller	Biology	4th	Background in Microbiology and Genetics	Team leader	Database / Technology	Researching peanut allergens, Weekly task creator
Nivedita Chandrasekharan	Biology	2nd	Research and laboratory assistant, background in Biology and Genetics	Sub-team leader	Web page / Background	Research on laws; Compiling and Editing of information
Ali Khiabani	Molecular Biochemistry and Biophysics	2nd	Computer, Scientific research study	Team Member	Web page / Background	Research on law and regulations, organizing the project management outline, and iGroups organizer
Andres De la hoz	BME	4th	Engineering	Team Member	Web page / Background	Research on law and regulations
Elizabeth Kuebrich	Biochemistry	3rd	Academic Interest: Forensics and Genetics	Team Member	Database / Technology	Researching peanut allergens,
Lauren McClelland	Biochemistry	3rd	Academic interest: Biochemistry, Genetics, and microbiology	Sub-team minute taker	Database / Technology	Researching peanut allergens, Project Management
Pavan Patel	Biochemistry / pre-medicine	4th	Computer skills, background in genetics and human biology	Team Member	Web page / Background	Research on law and regulations, updating the website

*Design of a Genetically Modified Food Database*

Jennifer Peavler	Chemical Engineering	4th	Proficient in laboratory techniques such as electrophoresis and separation techniques. research pertaining to biotechnology	Sub-team leader	Database / Technology	Researching peanut allergens
Hee Seo	Applied Mathematics	4th	Mathematical Skill, Data researching and analysis	Sub-team time keeper	Database / Technology	Researching peanut allergens, Code of Ethics
Kurt Ziegel	Architecture	5th	Architecture, Graphic Design, Industrial Design	Team Member	Web page / Background	Research on laws and regulations

**Updated Budget**

The budget has been updated (see table 2.). The team no longer needs to purchase the Ethics book. The book was provided during the Code of Ethics workshop. The team would still like to purchase a Dream Weaver book. This will aid in the creation and maintenance of the web site. Supplies for IPRO day will cost \$150. This will include printing cost for handouts and decorations for the table.

**Table 2. Budget plan for IPRO 318.**

<b>Item</b>	<b>Cost</b>
Dream Weaver Book	\$50.00
Supplies for IPRO DAY	\$150.00
<b>Total</b>	<b>\$200.00</b>

**Barriers and Obstacles:**

**CURRENT OBSTACLES AND REMEDIES:**

1. There is too much information available on the subject of genetically modified crops to gather and organize. The solution the team came up with was to break up into two sub-teams.
  - a) The database sub-team created a collective list of genetically modified crops. From this list, the top six crops in the United States were chosen and researched more in depth. To divide the bounty of information, a number of specific topics were researched for these

*Design of a Genetically Modified Food Database*

- crops. The information researched included country of origin, background, technologies, major companies, and predominant countries.
- b) The background sub-team researched the background of genetically modified crops. This is to include the risks and benefits associated with genetically modified foods.
2. Much of the available information on-line is biased. It is very difficult to obtain information that can be presented impartially. Many sites focus solely on the negative aspect of modified crops. Other will only portray the positive aspects. Rarely do you find a site which only states the facts.
    - a) To prevent this from occurring, the team acquired a majority of their research from recognizable sites such as the FDA. The team also retrieved much of their information from creditable journals. Statistics and other facts were checked against other sources.
  3. Lack of computer experience among team members made the creation of the website difficult. .
    - a) The team invested in a guide to website creation and spent considerable time and effort to familiarize themselves with the method of creating a webpage.
      - i. The site is now operational. The site is easy to navigate and is being used to display the research the team has conducted.

**FUTURE OBSTACLES:**

- a) The web page will need to be constantly updated on the cutting edge procedures of genetic modification and enlist all new crops that are modified in the future.
  1. Future teams will need to keep current on genetically modified crop developments.
- b) As the number of crops in the database increases, a more efficient method of showcasing the information will be needed.
  1. The group is trying to acquire software that is capable of automatically converting tabled information into a drop-screen format.
  2. Future teams will need to appoint a member to maintain the site through use of this software

**Mid-term Presentation Slides**

- a) Please see attachment