**Biotechnology Research Project**

This project will require you to research and report on a form of biotechnology that interests you. Your topic may be something that we have discussed/seen in class (Biotechnology Video) or something that you heard about outside of class. ***I must approve your topic so make sure you see me before you start!***  
  
**Your project must address the following topics:**

* **Detailed Description:** Describe to the audience what this biotechnology is and how it works (explain the procedure). Remember that your audience will be people who do not understand this technology.  
  **\*IMPORTANT**: Make sure that ***YOU*** understand what you are saying or writing about.   
   Do not simply use or recite information that you find if you cannot explain it yourself!!!
* **Benefits/Drawbacks:** Discuss both the benefits AND risks or drawbacks that come with this form of biotechnology
* **Examples Today:** If this technology is already available, provide several examples of how and where it is being used.
* **Future Examples:** If this technology is not available yet, discuss when it will become available and what scientists believe will be able to be done with it.

**Research Project Formats:**You may work individually or on a team of 2 or 3 depending on the research project format you choose.

1. **Write an article for Discover Magazine**. (1 person only)

Your article must address the topics described above. The article should contain informative graphics (photos, data tables, graphs, etc.) Try this website <http://www.easel.ly/> (<http://vimeo.com/37781587>)   
Your final product should resemble an actual article from Discover Magazine (or another similar scientific magazine). It may be helpful to obtain a copy of Discover Magazine to give you an example of how the layout of the article should look.

1. **Make a multimedia presentation for the class**. (team of 2-3 people)

Your presentation must be under 15 minutes and display equal participation from all group members.

You must create some sort of visual component to go with your spoken presentation.   
Options include; PowerPoint, Haiku: <http://www.haikudeck.com/> (<http://vimeo.com/71132866>)

1. **Make an iMovie or other type of video presentation**. (team of 2-3 people)

Your video should be similar to a segment from **60 Minutes** <http://www.cbsnews.com/60-minutes/>.   
The video must be under 10 minutes and display equal participation from all group members.  
YOU must be the actors in your movie (*you cannot just splice existing work together to make your video*).  
Example idea: One of your team members can be a scientist/researcher, another the interviewer and another the cameraman.

**Works Cited:**

Regardless of which project format you choose, you must provide a works cited page that lists the sources you used. A minimum of 3 **scientifically** **reputable** sources is expected for this project, but more is encouraged!

**Possible Topics:** Choose one of these or let me know if you have something different in mind.

No more than 2 groups can pick the same topic. First come, first served!

Stem Cell Therapy Cloning Gene Therapy Gene Banking

Genetically Modified Organisms 🡪 Agricultural GMOs Pharming GMOs Industrial GMOs

Conservation Biotechnology Bioinformatics (Genome sequencing) Biofabrication (ex- organs)

This project is worth 30 points. If you choose to work on a team all members will receive the same grade unless it is clear that one member is not contributing at an equal and appropriate level.   
  
Remember, this is an **HONORS** level class so expectations are very high. You will only earn an A if you greatly exceed the minimum expectations. An average project that simply complies with the components described on the front page will only earn a C or B at best. If you want an A you will have to go the extra mile and WOW your audience! Get creative!!!

Use the rubric below as a guide for what the expectations are.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** – (30 – 27.5 pts) | **B** – (27 – 24.5 pts) | **C** – (24 – 21.5 pts) | **D** – (21 – 19.5 pts) | **F** (19 pts or lower) |
| Project displays extremely high level of effort & care for an honors class.  All components are thoroughly covered and the presenter(s) demonstrated a sound understanding of the topic.  This project went above and beyond expectations. It had WOW factor!  This project is was a very effective way of teaching the audience about this form of biotechnology.  There is no room for improvement.  **EXCELLENT JOB** | Project displays a better than average level of effort & care for an honors class  All components are covered and presenter(s) demonstrated a sufficient level of understanding of the topic.  This project went beyond expectations and displayed some creativity.  This project was an effective way of teaching the audience about this form of biotechnology.  There is still some room for improvement  **GOOD JOB** | Project displays an average level of effort and care for an honors class.  Some components may be missing or understated. The presenter(s) demonstrated an average level of understanding of the topic.  Everything is present but there wasn’t much that was overly creative  This project was an average way of teaching the audience about this form of biotechnology  Sufficient job, but there is room for improvement in 1 or more areas.  **MEETS MINIMUM EXPECTATIONS** | Project displays a level of effort & care below average for an honors class.  Components are missing, understated, or inaccurate. The presenter(s) did not demonstrate a clear understanding of the topic  Lack of creativity, or creativity is overshadowed by inaccuracies or missing components  This project was not a very effective way of teaching the audience about this form of biotechnology  Below average job. There is significant room for improvement.  **BELOW AVERAGE** | Project does not meet requirements outlined on the front page.  Several components are missing, understated or inaccurate. Presenter(s) demonstrate significant lack of understanding  Creativity is absent or overshadowed by inaccuracies or missing components  This project was not an effective way of teaching and the audience may now have misconceptions.  Unsatisfactory job. This project does not meet the minimum expectations.  **UNSATISFACTORY** |