**Case Study on Metabolic Engineering**

Read the article: “A Way to Brew Morphine Raises Concerns Over Regulation” in the *New York Times*.

Then write a 1-2 page (single spaced) essay on the types of regulation that are necessary when using metabolic engineering to produce products and chemicals that could be misused.

Please **discuss:**

1) the risks and benefits of this research

2) then pick and defend one of the following positions:

* We should control this research by restricting access to the yeast strains and DNA because…..
* Maybe we should restrict access, but it’s just not feasible because……
* This technology shouldn’t be regulated yet, but access should be restricted in the future if…… (be specific about your conditions!)
* Leave the scientists alone! There is no need to regulate this research because……

3) then discuss whether or not scientists have an ethical obligation to proactively engage in debate about the potential misuse of their research (as Dr. Dueber in the article does).

In your essay, **make sure to use facts from the article to support your position**.