

ASSIGNMENT

Meta-Assignment

Overview

In the final project for the course, you'll design your own assignment and then create an original work to complete your assignment. This “product” will tell the story of your GAPDH molecular cloning and bioinformatics work this semester. You'll tell the story in a format of your choice, to an audience of your choice. You will also decide how to evaluate the success of your storytelling.

You'll start by developing a project proposal, which I must approve, and then you'll develop the product itself. Both the product and the process by which you create it are integral to this project.

You may work with a partner or you may work alone for this project. If you choose to collaborate, both of you will receive the same grade.

Rationale

This final project is a bit out of the norm for me, and perhaps for you, too. Since many of you are nearing the end of your college career and will be moving into a more independent phase of your educational journey, I want to give you the freedom and responsibility to develop your own learning experience. Through this activity, I anticipate you'll increase your competency in project design, planning, and evaluation and improve your ability to communicate scientific knowledge. I also hope that in developing your own project and by generating work that's more “creative” than, say, a typical lab report, you'll gain a broader perspective on science, communication, and learning itself.

The Project Proposal

There are two hard-and-fast requirements for this project: I must approve your proposal, and you must work according to what you propose. If, in the course of creating your product, you wish to alter your approved proposal, I must approve the modification.

Developing the proposal will take some brainstorming (maybe a bit of daydreaming?) and some outside research. Approval will likely require multiple rounds of drafting and revision. Develop your proposal as soon as possible and gather feedback on it from me, your classmates, and other interested parties.

Your project proposal will describe the product you wish to create, the rubric against which your product will be evaluated, and the process by which you will create the product. Each of these components is described below.

Proposal Part 1: What will you create?

Imagine what your final product looks like. What's your story? Who are you speaking to, and why? How will you tell your story? These questions (detailed below) are interrelated—so as you refine and reimagine your product, you'll want to consider these elements in combination.

1. Content: What will you present?

Naturally, you'll be communicating essential aspects of your work with GAPDH cloning and plant phylogeny, but you'll need to decide the scope and depth and how to frame your story. Some of you will want to include some of the fine details—for instance, the use of the Eco47IR gene as a selection tool for subcloning, or BLASTing a genomic query sequence against the mRNA database to identify

the intron-exon boundaries, or how MEGA aligns sequences and calculates a phylogenetic tree.

Others will use broader brush strokes to provide a higher-level description of the work.

What you emphasize will depend on your audience, format, and purpose.

In your proposal, define your content as precisely as you can—that will make it easier to create your product.

2. Format: How will you tell your story?

You may present your story in any form using words (written or spoken). You may also use graphics or multimedia, but don't tell your story solely with visual imagery.

Some options: a nonfiction article (for example, for a popular science magazine), a creative essay, an exchange of letters, an interview (written or filmed), an instructional resource or teaching guide, a PowerPoint or TED talk, a video essay, a graphic novella, a poster, a website, or . . .

As you decide on the genre and media for telling your story, explain why that form is particularly suited to your content, audience, and purpose.

By the way, you should have some familiarity with the genre / media you choose—or at least a willingness to learn about it!

Again, providing specifics here will help you think out possible directions for the project and pave the way for the product creation phase of the project. Include an approximate length to help define the scope of your work.

3. Audience: To whom will you speak?

If you choose a more creative genre, you may be presenting to a lay audience who has little knowledge of molecular genetics. More technical forms might target other potential students in the course, or even instructors.

As in the example below, you may speak to yourself, but not solely to yourself. Or you may wish to speak to a particular person important in your life or choose a wider audience. Depending on your project's format, you may define more than one audience.

4. Purpose: What do you seek to accomplish with the work?

To inform? Entertain? Persuade?

Your purpose in telling a story is tied to the way you tell it and to whom—and what story you ultimately tell.

Once you've answered these four questions for yourself, describe your responses in your proposal. Start with an overview that shows how these elements of the story are interconnected in your proposed work. Then explicitly describe each of the elements (not necessarily in the above order).

Proposal Part 2: How should your creation be evaluated?

Define the criteria by which you will define success. Consider aspects of the work such as the quality and development of ideas—this could be the accuracy, scope, and depth of technical content; how you frame

your argument (the background and rationale); focus and clarity and the logical connection between your main ideas and supporting details. You might also think about presentation style, mechanics, and/or other appropriate categories.

Assemble a **rubric** based on these criteria.

First, define the criteria and the characteristics of a successful product. Include categories that address the scientific content, the quality of communication, and the impact of the work. Within each category, you may define the various levels of achievement—for example, what constitutes “A” level work, “B” work, “C”, etc.

Then, if you desire, weight the categories in your rubric as you see fit. Or you may choose not to define weights if you believe your work should be evaluated in a more comprehensive or holistic manner. (The example below uses a holistic rubric.)

Proposal Part 3: How will you create this work?

As you probably know, a plan helps you organize, manage, and hold yourself accountable. Draft a **workplan** that will keep you on track for successfully completing the project.

This workplan should detail deadlines and “deliverables.” Deliverables will include the outlines, storyboards, rough drafts, sketches, etc. that you’ll create as you progress through the project.

Deliverables also include self-assessments, peer feedback, and instructor feedback that you’ll use to guide your revisions—you must include each of these elements in your proposal for approval.

If you’re working with a partner, please indicate this. Also, detail in your workplan who is responsible for what.

At the end of the project, in addition to the final draft of your work, you'll submit a portfolio that includes all formative works—drafts, feedback, etc. with the dates of completion. (Save copies of everything!)

Grading

I'll evaluate your project on the final product (judging it against your rubric, 100 points) and the process by which you created it (judging your portfolio against your workplan, 50 points).

I'll also ask you to evaluate your final project experience. This will give you an opportunity to reflect on what you learned and will help me assess and revise the project for the next class of students!