

Masthead Logo

Latham Science Communication Project

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Designing Supplemental Material for Science Engagement

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Abstract

Many outreach events target high school and middle school students in hopes of engaging them and inspiring them to pursue a career within a STEM field. Despite the efforts made by outreach scientists, students oftentimes leave events without any follow-up material and still do not have enough information to realistically consider a career in STEM. My individual project involves creating a supplemental outreach magazine that can be provided to students after outreach events. In addition to assisting with LSEI outreach at the University of Iowa, I hope to make these materials publicly available, for other institutions throughout the country and world to manipulate and use as well.

Project Summary

This year's cohort for the LSEI has been working very hard to coordinate multiple outreach events involving large numbers of students. While these events are effective in teaching students about the different fields of science, they still leave the students without any follow-up materials. I saw this as an opportunity to create a supplementary magazine to provide students upon leaving LSEI sponsored events, to 1) increase the impact factor of the event, and 2) to provide further information about different STEM fields, our audience can pursue in their free time. Because most of the outreach groups are working with students ranging from late elementary school to high school, my target audience would be similar. I specifically tried to minimize as much jargon as I could from the content, however, I believe it is written at a level more appropriate for a high school student.

Making a magazine has a lot of small and intricate steps, and involves many details to consider. For me, this meant first assembling a template for how the magazine would be compiled in PDF form for printing, finding somebody to print the magazine, researching the different fields of STEM, coordinating interviews with students, taking pictures, editing pictures and articles, and assembling the entire thing together. By far, the most time-consuming portion of this project was building the template for each field of STEM. Each field of STEM is given two pages, with the first page dedicated to summary about the field, and the second page containing pictures of an undergraduate student working in a research position, and a write-up on their research experiences (see figure 1 for an example page for Biology).

Watch the video about me interviewing Steve Huang (made by Steve) to see the creative process in action! Designing and assembling the magazine took longer than anticipated. While we were unable to distribute completed copies of the magazine to the students at our group event – SPARC – we provided individual printouts of these magazine pages for students to take home after the event and serving the same purpose of the magazine. There was not a method to quantify the effectiveness of the magazine, however, if we decide to put the magazine online, we could measure success based off the number of downloads other institutions it for.

Discussion

One of my favorite aspects about this magazine is that it can easily be modified. I had designed a template that allows a user to quickly replace photos with undergraduates from other institutions, and all the text boxes can be edited. Thus, if one wanted to, the magazine could be used by different institutions throughout the world. Furthermore, this means the magazine can be edited in case of inaccuracies, or if we want to replace a field of STEM with another field that was left out. The project could additionally be taken over by a future fellow that could provide a website that students could look at to gather more information – and upon going to this website we could quantify the effectiveness of the magazine.

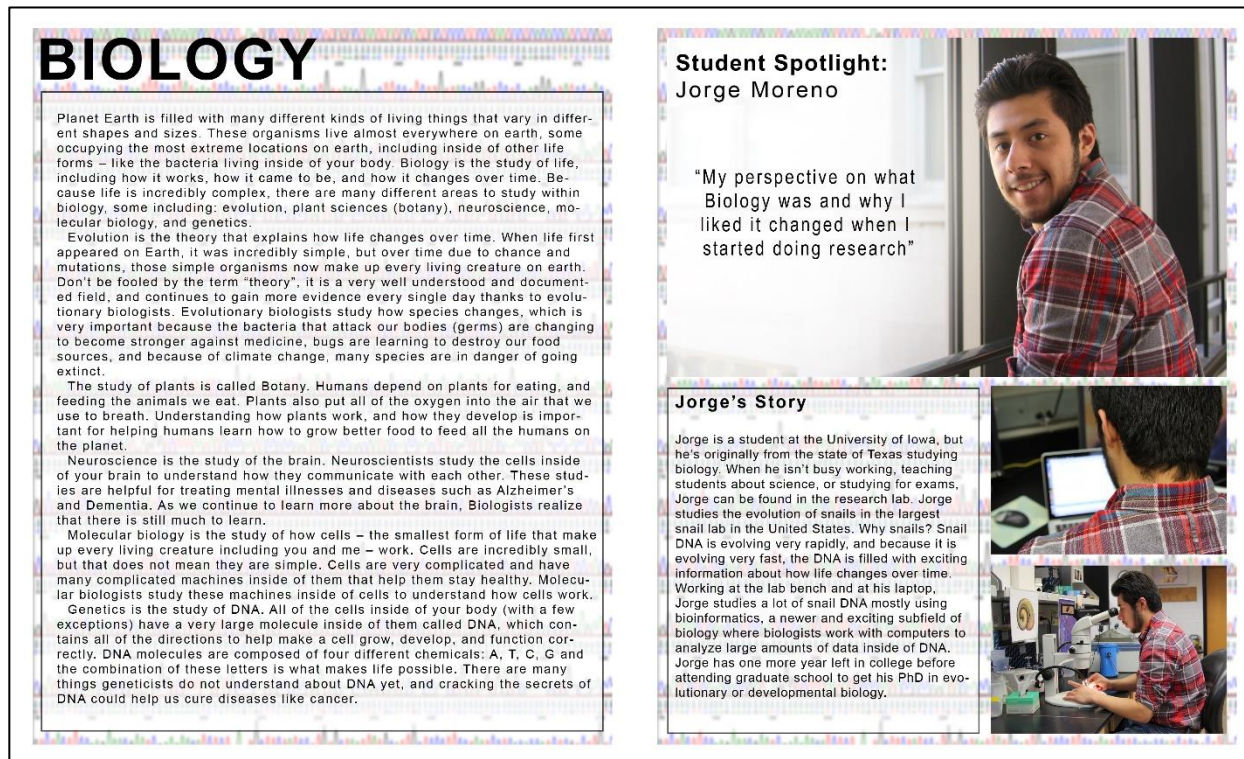


Figure 1 Sample page from the magazine. The left page is a summary of the field of biology, while the right side contains a Student Spotlight about a current undergraduate doing research in the department of Biology.

From this experience, I have learned a lot about photoshop, journalism, and time management. Deadlines came up far quicker than anticipated. Second, I also learned a lot about the different fields of STEM. While I had a pretty solid foundation on most fields, it was interesting talking to undergraduates working in different fields and learning about their work, and the different subfields for each area of STEM. One example of this was when I interviewed Steve Huang for Biochemistry, and he let me look at the X-ray diffractometer, and the Hanging-Drop Protein Crystallization Machine (see Figure 2).

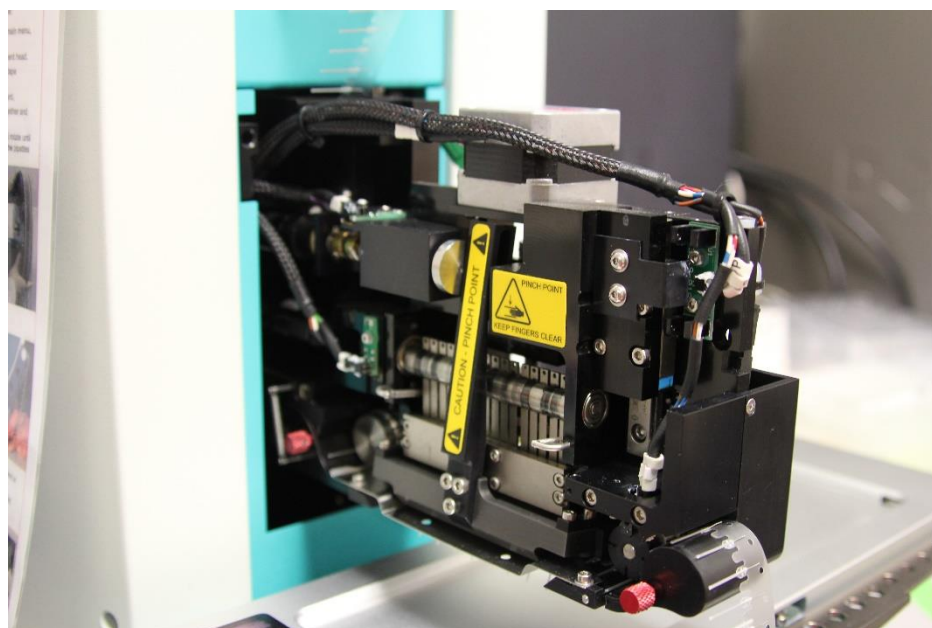


Figure 2 Hanging-Drop Protein Crystallization Machine. I had the opportunity to see this incredible piece of equipment in the Fuentes lab. This machine generates crystal proteins, where are used during X-ray crystallography. During this method, X-rays and shines them through protein samples. How the x-rays pass through the sample as interpreted and can tell biochemists the exact molecular structure of a protein.