**BioArt Collaboration: Reflections Backwards and Forwards**

*Soaked in ethanol and covered in invisible colonies of Streptomyces, the paintbrush ripped through the agar, completely sterile only moments prior. The artist pushed and piled the jello-like substance around the petri dish and as he did, my palms began to sweat in my nitrile gloves and my thoughts began to race around in my head. I forcibly swallowed back every urge to advise him to blot excess ethanol off of the paintbrush and to avoid piercing the surface of the agar, as not to kill the very bacteria we were trying to grow.*

*Flash forward one week in the 37°C incubator, and the result of the project was breathtaking. Bacteria had most certainly grown, filling stacks and stacks of petri dishes with an incredible array of colors, shapes, patterns and textures. Looking at the piece by the artist I was so worried about, I saw how the globs of agar intricately melded with the bacteria in a way that would not have been possible had I given him my advice.*

“Present your data as a story” is a phrase I have heard over and over again in my career as a Biology major at Haverford, yet it was not until this course, and our time spent with CCW, that I truly began to understand the power of narrative as a measure of access. In the world of science, we spend so much time interacting with other people who share a similarly scientific way of thinking and communicating that the real value of storytelling becomes easily obscured. Presenting my data as a story so that a geneticist can relate to an immunology project means one thing, but what does it feel like to use narrative as a way of bringing in a diversity of decidedly non-scientific minds? With this essay, I want to offer a reflective narrative, intertwined with a framework of critical disability studies, to explore what my experience with the BioArt collaboration has to offer to the scientific community at large.

For a few years, a desire has been brewing inside of me to reimagine my relationship with disability. Thanks to my aunt, a special education educator, disability had been part of my life since I was ten and started tagging along to the summer camp at her school. I spent my days ostensibly helping out the teachers with activities like snack and swimming, but mostly just loving every second of hanging out with the hilarious, sweet and mischievous kids. Hoping to carry that enjoyment into the rest of my life, once I arrived at Haverford I made it a personal goal to find ways to interact with disability in my new community. However, I quickly discovered that the opportunities I tried out relied heavily on a volunteering model that I was becoming increasingly uncomfortable with. My freshman year writing seminar, *Portraits of Disability and Difference*, had opened my eyes to the world of disability studies and the possibility of interacting with disability beyond “let *me* help *you*”. It was just a matter of figuring out a way to make turn that possibility into a reality.

Enter the BioArt Collaboration. Throughout the almost nine months of planning, scheming and organizing the experience that college students and artists with disabilities would share together in the lab space, there was a very intentional effort to set up an environment in which all participants felt actively involved. Though I viewed myself as a knowledgeable about the technicalities of science, I set out to try and glean from the artists’ experiences new and interesting ways of communicating science. Over the past week, as I have watched multiple science students peak around the corner of the exhibition in Zubrow, only to emerge ten or fifteen minutes later, I have witnessed the accomplishment of that particular mission. However, this experience has also achieved so much more than I ever hoped or anticipated. Reflecting backwards, I can locate three key frameworks from disability studies that I have experienced through this collaboration as having much to offer the world of science: (1) interdependence, (2) multiple entry points, (3) “outsider” perspective.

*Interdependence*

In our efforts to create a dynamic that meshed well with our own personal missions, Lindsey and I originally conceptualized of the project with an “expert/learner” mindset that purposefully replaced language common to volunteering. The expert/learner terminology draws on an understanding that in our lives we all have certain interests, each as equally valuable and worthy of sharing as the next. I am someone who relates to the world around me through verbal communication and exchange, so I needed a phrase I could use to explain to others what I wanted to achieve with this partnership. I wanted to offer up my interest in science and learn more from the CCW participants’ interest in art. While I still feel that there was much taught and much learned throughout this partnership, the actual time spent in the lab made it apparent that the expert/learner dichotomy was not nuanced enough to capture what was happening as we all worked together. Again, words matter to me, so it was worth taking the time to re-evaluate and get the language of our framework to match both our original intentions and our lived experiences of the project.

Though our partnership undoubtedly relied on give-and-take, the exchange occurred much more fluidly than envisioning a room full of experts and learners would suggest. At various points throughout our time in the lab, and eventually at CCW, we all – science and non-science, student and artists, nondisabled and disabled - acted simultaneously as experts and learners. We all supported each other in various ways, most notably offering a space to each other that may otherwise not have been there. Thinking about the theme of interdependency so common in disability studies allowed for the creation of a new framework – one of symbiosis, a mutually beneficial relationship for all involved. A framework of symbiosis, a term taken from biology, has something to add to the scientific community. On both a theoretical and practical level, science really cannot happen in isolation. Every scientist’s work undoubtedly stands on the shoulders of those who have come before, and everyday scientists depend on collaboration with others to move their research forward. The BioArt project provides a story with which I hope to explicitly open up a larger conversation on the necessity of interdependency not only in work revolving around disability but throughout science as well.

*Multiple Entry Points*

 When discussing accessibility in the earliest stages of planning out this project, I hyper-focused on the logistics of physical access to and within the Haverford lab spaces. Though I knew the project would utilize science, I could not yet wrap my mind around how to best provide access to concepts as well. Still unsure of what to do during those weeks in the lab, I attempted to offer some kind of conceptual access by stepping back from the theory I tend to rely so heavily on in my classes. I challenged myself to silence the worry that I was not doing enough to convey a “real” sense of the scientific work that we do. In the end, I felt we had shared an experience of science in the lab though I lacked an understanding of exactly how.

 As the semester evolved and I continued to reflect on those three weeks in the lab, I began to latch onto an idea that we read about and discussed in class: multiple entry points as a kind of access. Whether through not shying away from bringing the personal into the academic, witnessing *A Fierce Kind of Love*, or reading the works of scholars like Melanie Yergaeu, I found a framework for thinking about how the BioArt collaboration served to open up the conceptual world of science without ever explicitly talking about scientific theory. The lab notebooks served as a place for documentation and reflection, critical aspects of the scientific method, in forms beyond taking written notes. The iPhone holders equated the concepts behind a microscope, a key piece of laboratory equipment, with the same technology used by many of the non-science students and CCW artists everyday. The built-in plans to move our scientific findings into the art studio at CCW encouraged the kind of sharing all scientists do with their results, but reimagined what exactly that communication could look like. Without fully realizing it, I think we made strides towards creating an environment in which all entry points into what was happening in the lab were celebrated.

*“Outsider” Perspective*

 As the anecdote I began this reflection with describes, the BioArt collaboration achieved stacks and stacks full of beautiful and disgusting petri dishes that traditional scientific methods and conventions alone could never have achieved. Though my own two dishes turned out fine, I wish I had taken a cue from the non-scientists and grasped the chance to be more experimental – a somewhat ironic reflection for a scientist. Playing off the idea of “outsider art,” the idea of “outsider science” emerged when thinking of how to describe the value that those non-scientists brought to the lab benches. While we briefly discussed in class the problems with referring to CCW as a place for “outsider art” in the traditional perception of that phrase, a broader understanding of the value in calling for “outsider” perspectives permeates the field of critical disability studies. Disability Studies itself serves as a model for the “outsider” perspective – offering its understandings to medicine, to art, to exhibition curating, to law, and so many other fields. Disability Studies scholars pushes boundaries in other disciplines, sometimes knowingly and sometimes without knowing the boundaries are there in the first place, extending the conversation on both sides into unique and unexpected directions.

 The “outsider” perspective I witnessed in the lab offered something towards my own perspective on science. At this point, having spent a fair bit of time in the lab, I have come to accept that experiments often do not work as expected. Seeing the stress and discomfort others experienced with the invisible bacteria, I was reminded of the creativity inherent in the scientific process. Trouble-shooting protocols and experiments can be a matter of frustration, or it can become a matter of invention. Those moments in the lab that feel like failures are just a byproduct of the innovation that characterizes science. Bringing non-scientists into the lab not only involves them in the world of science but also involves the scientists in their non-science world as well. In such a space, everyone has the opportunity to find active involvement – just as the project had always intended.

*Reflecting Forwards*

 Armed with this year’s worth of experience, the act of creating and delivering our talk, and a wealth of discussions (in person and virtual – thanks Serendip!), Lindsey and I plan to pitch a commentary-type article about the BioArt collaboration to a few different scientific journals and see what happens. For that particular intended audience, we will focus on what something like the BioArt collaboration can offer to scientists working in their own communities. Ultimately, I hope that the BioArt collaboration can serve as an entry point in its own right – a way for other members of the scientific community to feel the value that a diversity of bodies and minds can bring to our field.