MIT INSPIRE

Promoting the Power of Humanities Research

by Michael Cheng

IN APRIL 2016, AS A HIGH SCHOOL SOPHOMORE, I TRAVELED TO THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY FOR THE FINAL ROUND OF THE MIT INSPIRE COMPETITION IN THE ARTS, HUMANITIES, AND SOCIAL SCIENCES (MIT INSPIRE). THE COMPETITION ENCOURAGES HIGH SCHOOL STUDENTS TO CONDUCT RESEARCH IN THE HUMANITIES AND EXPLORE THE INTERSECTION OF THE HUMANITIES AND SCIENCE. I LEARNED ABOUT IT DURING AN INTERNET SEARCH FOR HISTORY SCHOLARSHIPS—AND SET OFF ON A SEVEN-MONTH JOURNEY TO A NEW APPRECIATION FOR HUMANITIES RESEARCH.

Ready…Set…Research!

To participate, students submit a 20-page research paper in one of 13 categories. Approximately 100 finalists are selected to participate in the final round on MIT's campus in Cambridge, Massachusetts, where they present posters describing their research. While I'd always had an affinity for history, I had never considered combining it with my interest in environmental science. But as I searched the INSPIRE website and found sample topics such as Technology in American History, I realized the competition would allow me to do just that.

After sifting through piles of books at the library in search of a topic, I came across a picture book of the Delaware River through the ages. Seeing the evolution of the river from the 1600s through modern times, I knew I'd found my topic: the history of pollution cleanup in the Delaware River. The river had gone from a pristine waterway in the 1700s to one of the country's most polluted rivers in the 1900s, to an example of successful environmental protection in the 2000s. I wanted to understand how this transformation came about.

Now that I had my topic, however, I had to face the daunting task of writing a 20-page research paper. The longest paper I had written in school was a mere four pages. I borrowed some books and started researching.

Past, Present

Slowly, I accumulated a pile of notes, but I had to somehow organize them into a cohesive narrative. Moreover, I had to learn how to cite my sources correctly. One of my teachers advised me to look for experts who might be willing to help. After sending several emails, I was fortunate to secure the guidance of a professor specializing in water policy and city planning. After I explained my interest in environmental policy, he generously offered some tips on how to put together a narrative. Building on his advice, I wrote my first draft.

I explained how the Delaware River became polluted during the Industrial Revolution, a problem that remained unaddressed until the 1950s when a tragic flood and increased public awareness led to the creation of the Delaware River Basin Commission (DRBC). The DRBC brought together state, industrial, and environmental stakeholders to establish effective water policy reforms.

While it wasn't the worst history paper ever, it didn't seem relevant to today's world. Of course, history is primarily about the past, but relating it to the present would provide meaning to today's readers. To remedy this, I decided to add an analysis of how the cleanup continues to affect society and water policy today. This required me to edit the paper significantly since I had already reached the page limit. Essentially, I had to rewrite my entire paper. It was December, and the January submission deadline loomed.

I spent much of winter break in the library, conducting research and writing my conclusion, in which I stressed the need for policymakers to continue to consult all stakeholders when making decisions. Finally, on January 13—the deadline—I submitted my paper.

Refining My Message

In February, I was surprised and excited to learn online that of 594 entrants, I was one of the 100 finalists who would present posters at MIT. Still, I worried: I was shy, and I had never even seen a research poster before. I found the website of a local history professor who specializes in environmental history and emailed her for advice. After meeting with her, I began to understand what a humanities research poster looked like. Brevity and legibility were important considerations.

In March, I made an outline of my key points and collected pictures from the internet and the library. After constructing my poster, I practiced my presentation. My first attempt lasted nearly 10 minutes; I needed to get it down to 5. To refine it, I visited teachers I knew during my free periods and presented my poster. This worked surprisingly well, as their feedback helped me narrow the scope of my presentation. Moreover, by the time I boarded the plane to Boston, I had significantly improved my communication skills.

Breakthroughs at the Intersection

The first event at MIT was the opening ceremony, where I and the other finalists heard from speakers including Dr. William Adams,

Chairman of the National Endowment for the Humanities, and Professor Eran Egozy, co-founder of the company that made Guitar Hero. They stressed that despite society's shift toward STEM and away from the humanities, the intersection of STEM and the humanities is where exciting breakthroughs are happening. Professor Egozy noted, for example, that had he not studied music intensively, he wouldn't have thought to apply his programming skills to develop Guitar Hero.

The following day, we presented our projects to a panel of distinguished judges and the public. The diversity of projects was impressive: The history category alone featured topics ranging from the War of the Roses to the GI Bill to Maoist China. There were also many interesting projects in other categories, including architecture, linguistics, and economics. One student designed a computer program to simulate disparities in incarceration rates and explore solutions to the problem.

When it was time for my presentation, I provided an overview of my project and answered the judges' questions about the implications of my findings. I appreciated their thoughtful insights. For example, they noted that conservatives might reject any new regulations, while the left would tend to be skeptical of government working with business.

On day three, Dr. Sandy Pentland of MIT's Media Lab gave the keynote speech in which he discussed the role of humanities in his career in data analytics. He explained how his background in psychology had helped him find interesting ways to capture data on health and relationships in his data analytics projects. Following Dr. Pentland's speech, awards were presented. I didn't win, but we all cheered the grand prize winner, who received $10,000 for her development of a novel approach to prevent cyberbullying.

MIT INSPIRE taught me how to conduct humanities research and gave me the confidence to present it. I learned that there isn't a clear division between STEM and the humanities—and that being fluent in both will be vital in addressing some of today's most pressing problems. ∎

Michael Cheng is a junior at Lower Merion High School in Ardmore, PA, where he is an editor of the newspaper, captain of the Science Olympiad team, and a member of the cross country team. He loves writing poetry and has been folding origami for 11 years.

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