About the Allen Institute

The Allen Institute is a nonprofit biomedical research institute located in Seattle, Washington. Our four divisions – Allen Institute for Brain Science, Allen Institute for Cell Science, Allen Institute for Immunology, and The Paul G Allen Frontiers Group – are dedicated to answering some of the biggest questions in bioscience and accelerating research worldwide. We share all of our data and research findings with the scientific community and general public at brain-map.org and allencell.org.

About the Behind the Scenes of Science webinars

In our webinar series for educators and students, go behind the scenes of science to meet the professionals who make our research possible, and get a glimpse of the many different careers in science. These free events are open to entire classes of students in the format of an interview with our staff and interactive discussion where students can ask questions and learn what it takes to do cutting-edge research.

Bainbridge High School – presenter information

Full Name:
Jamie Sherman, PhD

Title:
Engineer, Allen Institute for Cell Science

Where did you grow up and attend school:
I was born in Europe and moved regularly until my parents settled in New Canaan, Connecticut. My schooling started there at West School and in kindergarten, I was diagnosed as "Learning Disabled" and a few years later confirmed as Dyslexia. Back then, it was kind of assumed that people with learning disabilities weren't smart and should lower their expectations, and elementary school was a struggle for me. I was lucky enough to have an inspiring teacher in summer school and my parents switched me to the school she taught at, Brunswick School in Greenwich CT. I encountered the sciences in middle school (6-8 grade) and did well. When I got to high school I took Biology and Physics which became my favorite subjects, along with Calculus, which to me was how you explained the world around you with precision. I did well in the sciences in particular, but not so much in French.

I applied to colleges and was fortunate to get into Yale and Caltech. I chose Caltech. While there I tried several majors from Physics to Chemical Engineering but ended up enjoying Applied Math and eventually graduated from that discipline with independent study in Mathematical Biology.

For graduate school, I went to UW to study Mathematical Biology under Sir James Murray [https://amath.washington.edu/people/james-d-murray] but due to his struggles with polio, I had to find new options. I completed an MS in Applied Math with Tom Daniel and transferred into the Molecular Biotechnology Department, now Genome Sciences, and eventually completed my Ph.D.

under Prof Rudi Aebersold [https://en.wikipedia.org/wiki/Ruedi_Aebersold] in Biological Mass Spectrometry (wet-lab, instrumentation, and data analysis/software).

How and when did you know that you wanted to pursue the study of science?
In high-school when studying Physics and Biology I knew I liked it. It's not easy but I found it fun to figure things out. To be able to solve a problem and get an answer that you could demonstrate was correct was fun and that took me down the path of Science and Engineering.

Did anyone give you any advice in high school or college that has stayed with you/helped you?
Pick 2 things you like and work at the intersection of those fields. - Donald Cohen

Find things you like doing and chase them. You do not need to captain the ship to make a significant contribution.

Know your worth and don't be afraid to speak up for yourself, politely.

Please describe 2-3 of your most famous and/or favorite projects that you have worked on?

When I joined Prof Aebersold's group I had more computational skill than anyone in the group. I was able to help find the evidence in the data that the (ICAT)[https://en.wikipedia.org/wiki/Isotope-coded_affinity_tag] reagent we developed was effective and though not an author on the paper, the paper would likely not have happened without my help.

The publication I am most proud of is the development of the first novel identification algorithm in ~20 years. The algorithm provides a novel way to identify proteins in Mass Spectrometry data and couples methods from Applied Math with Mass Spectrometry data.
https://www.mcponline.org/content/8/9/2051

Please describe 2-3 skills that you think every successful scientific researcher needs to use on a daily basis.
Integrity and Rigor - as a scientist you are often funded by tax dollars and consequently in a position of trust to use funds responsibly and ethically and to use your cleverness to do as much with those funds as you can.

Learn how to learn - it's different for all of us but if you can continue to learn and absorb information and question that will set you up well to succeed whatever you choose to do.

Army of One - whatever skill you think you won't need, there is a good chance that eventually you will need it, be it writing or programming or math or chemistry. You don't have to excel at all of them but knowing some is always helpful so be curious.