



A CONVERSATION WITH:

KIMBERLY SMITH

**ASSOCIATE DIRECTOR OF MOLECULAR
BIOLOGY AT ALLEN INSTITUTE FOR BRAIN
SCIENCE**

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VIDEO AT
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Which systems thinking skills do you use?

#5: Use Mental Modeling and Abstraction

The mouse brains in my research are used as models for human brains.

#6: Recognize Systems

The people at the Allen Institute recognize that they are part of a larger system of brain researchers, which is why we make our data accessible to other scientists.

#15: Respond to Changes over Time

Lab work involves continuous tweaking of protocol and techniques to get the desired results. The protocol I use may also need to change as I receive new results or information about the system I am studying.

1. What is your role within the STEM community?

I am the Associate Director of Molecular Biology at the Allen Institute for Brain Science. We produce data to give to the world for other researchers to build off of.

2. What complex problem do you address in your work?

I research mouse and human brains. Learning what normal brains and their development timelines look like will help with the Allen Institute's future goal of studying human brain diseases, such as Alzheimer's and Parkinson's disease. The institute makes their brain data "open source" (freely available to everyone) so other researchers can use it to answer their own questions.

3. What elements do you need to consider when addressing this problem?

I manage three production teams of research associates that do the lab work: Single Cell RNASeq Core, Genotyping, and Histology. The Allen Institute's data is shared openly with the greater science community, so I have to ensure that my team's data is high quality.

4. How did you get to where you are today?

My great experiences in high school biology and chemistry are what started my interest in science. I liked that following the steps in a protocol correctly would get to an answer at the end, which I found very satisfying. In college I studied biochemistry, a new concept at the time, and was a student helper in the new molecular biotech department as a freshman. That position led to a job in the department after graduating, and I have worked in labs ever since. Some people in my career have a PhD, but I chose not to go to graduate school. I have been with the Allen Institute since 2003 when it was founded, and find it to be very rewarding as I feel like my work is truly benefiting science.

5. What advice do you have for becoming a systems thinker?

Research is not always smooth sailing. Lab work often involves working through failure after failure and adjusting the protocol bit by bit until there is finally satisfying success at the end. However, success doesn't always come, and that's just part of science, too.