



**A CONVERSATION WITH:**

**AMY BERGIN**

**EARTH SCIENTIST & SMALL BUSINESS OWNER**

**Which systems thinking skills do you use?**

**#3: Effectively Respond to Uncertainty and Ambiguity**

Running a business is complex. When I first started, I wasn't exactly sure what the end product would look like. I break things down into bite size pieces so I don't get overwhelmed.

**#9: Identify Relationships**

Branches of physical, life, space, and Earth sciences can all be used together to estimate the history of the Earth. Rocks and Minerals are a product of all these things.

**#13: Describe Past System Behavior**

As a geologist, I have to know the history of the Earth to understand how different types of rocks were formed. This knowledge can be applied to things like climate trends, ecology, and plate tectonics.

**1. What is your role within the STEM community?**

I work for the Institute for Systems Biology, where our mission is to ask questions about biological complexity and how it relates to human health and the environment. As a research scientist, my specific field is computational biology. My interest is in genetics and how new technologies allow us to examine the sequence of the human genome. I write computer programs to crunch the data and generate insights about what is happening with the genes. I am also passionate about communicating the findings of scientific research to the general population in an easily understandable and accessible way.

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

I study the genetic aspects of cancer. I write computer programs that process genetic data to figure out how genes interact with one another, how they're different when someone is sick, and how that impacts treatment for them.

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

The human genome is very large (2.9 billion letters!), so I have to use computers to analyze all of that information. This means that I must use a combination of computer science and biology to answer questions about cancer. Every person is different, so their disease and response to treatment will be unique.

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

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

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