

## What Next?

Looking around the University of California - Los Angeles campus, Anne felt like she was looking on at herself from outside her body. While her fellow students ('89) knew what they wanted to do, or at least had an idea of what they wanted to do, Anne had no idea. "I can still change my major later," she told herself, as she wrote down "mathematics" as her prospective major.

Why she chose mathematics as her prospective major, she didn't know. But mathematics had been something that was always in the back of her mind. While she didn't feel a strong passion for it, it seemed like she was always drawn to it. In high school, she found mathematical concepts to be interesting. And here she was now.

Some days she wanted to switch and become a history major. Days like these often filled her head with uncertainty over whether she made the right decision or not. Was she really interested in math?

During her third year, she finally found what she needed: mathematical models. She didn't want to do abstract theorems or proofs where she would sit down with a paper and pencil, staring at the desk all day, and she also didn't want to do something that had no real world application. And here it was, right in front of her. The ecology model stood out from the rest of the theorems on the textbook page.

But even the ecology model was not intriguing enough to keep Anne staying on the mathematics track. Still unsure, she decided to apply to law school, following the track that was very popular at the time. She got in, but when it was time for her to enroll, she found herself with doubt again. The cost was expensive, and she had little interest in law. She knew that many people were getting in and graduating law school, but they weren't finding jobs as a lawyer. Was law school her fate?

No, law school was not her fate. Instead, she decided to fly off to Israel. She worked on a communal farm, or *kibbutz*, with other students the age of 18 to 24, coming from a total of 27 countries. During the spring and summer, she picked large grapefruits and watermelons, and in the winter she worked in the communal dining hall and in the infant daycare. In exchange for her work, she learned to

speak Hebrew and learned about archeology at the nearby archeology site of King Solomon's time. Her year in Israel was well spent; she finally took a breath from the chaotic college life, and she realized that she wanted to do things that used her brain's full capacity. However, the question still remained unanswered: "What do I want to do with my life?"

Finding herself lost again, Anne decided to jump back into mathematics and see where it would take her. She felt like it wouldn't hurt to try it out. She just avoided the lingering questions again by saying "well, I'll get through this, and then make a decision."

She pushed away this question through graduate school at Brown University, where she was the only female in her grade. This cycle of avoiding her decision continued until she started her own research. It was then that she finally realized that she wanted to pursue math. Although it wasn't an epiphany like in movies, she had an exciting moment of realization that the solution she just came up with was something that no one had ever seen before.

Now, Anne is working on signal processing. In order to retrieve data from the scene being discovered, signals are sent out. The signals then produce a series of data that can be analyzed. Anne, and other mathematicians like her, analyzes this data to discover characteristic features or images of the scene that could be beneficial for the scientists and engineers. She works backwards, starting with the data and finding the hidden information. "It's called inverse transformation," she says.

It's not always easy though. "I... I don't think math is easy. I think math is actually really hard," she says. "I enjoy the challenge, but sometimes I'm really envious of people who seem to have a better abstract brain and able to understand concepts on a far deeper level." She goes on, "Things that I thought I understood ten years ago, I had barely scratched the surface, and now I'm beginning to learn more. And I have a feeling that ten years from now, I'll be able to say the same thing." She looks up at me and smiles.

The story of Anne is the story of Professor Anne Gelb in the mathematics department at Dartmouth College. Looking back, it seems as though her job as a professor was meant for her. While her

path was long and indecisive, she now focuses on teaching. Whenever she meets a student who is unsure about their path, she has the ability to give them the motivation and encouragement to push through. For the ambitious people who already are confident as to what career they want to pursue, she makes sure that they go to places where they want to go. And for any student, she makes sure that they understand the strong correlation between mathematics and real world problems so that they can broaden their view of life through mathematics.

“As a person who kicked the can over and over again”, Professor Gelb says, “Don’t think about what your going to do twenty years later, just do something you like at that moment.”