



*With gratitude and love to
all those who have
contributed to the
collection of these stories.*



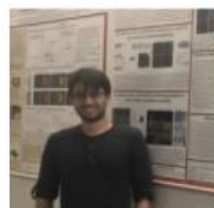
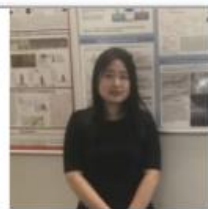
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Into the Minds of Cancer Researchers:

*A book dedicated
to demystifying
the lives of
Cornell cancer
researchers*





Into the Minds of Cancer Researchers:

Project by Emma Stowe with the help of the wonderful researchers from the Lammerding, Fischbach, and Weiss labs at Cornell University. Special thanks to Peter DeNero and Alexandra McGregor for their continued support.



A Glimpse into the Minds of Cancer Researchers:

Dear Reader,

This photobook concludes a semester-long investigation focusing on the importance of public involvement in science, an idea that describes the benefits of mutual learning that arise from interactions between scientists and members of the public. Motivations for this project came from interest in the partnership between Cornell cancer researchers and the Cancer Resource Center of the Finger Lakes.

This photobook specifically aims to provide a glimpse into the lives of cancer researchers by revealing the challenges and changes that this disease has had on their lives through both scientific and personal experiences. These personal statements will shed light on the views of researchers and their relationship with the disease itself while educating the public about the cancer research community at Cornell.

Thanks for reading,
Emma Stowe
Spring 2017

Featuring:



Bob

Professor



Pragya

Graduate Student



Alex

Graduate Student



Emily

Post-Doc Researcher



Peter

Graduate Student



Josh

Undergrad Student



Darshil

Graduate Student



Lu

Graduate Student



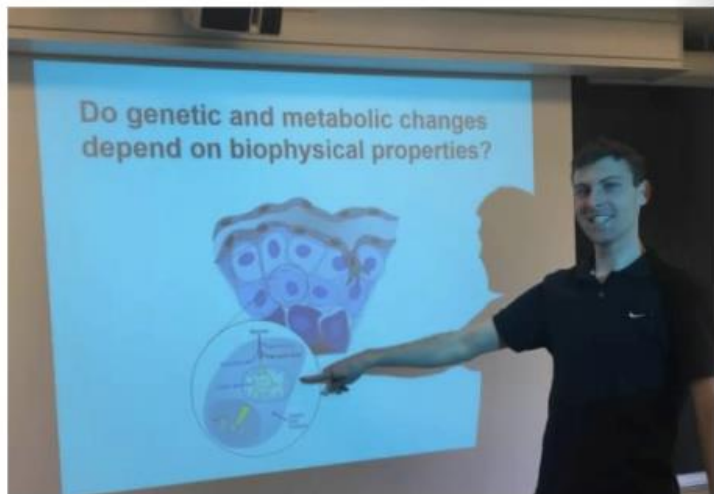
Elizabeth

Undergrad Student



Adrian

Graduate Student



"I love learning and I think that as a researcher you are constantly learning. And that can be rewarding for its own sake, to just continuously encounter knowledge."

Peter, Researcher in Fischbach Lab

"Research can be hard because you are doing things that might not work and that's exciting but it is also incredibly frustrating."

Has your research changed any of your viewpoints about cancer?

"I think my attitude changed mostly because when I started doing cancer research I was thinking of it only as a biological problem and I spent most of my time working with microscopes and petri dishes. When I started doing the partnership with the [Finger Lakes] Cancer Research Center, my attitude toward cancer really changed. I started to see more of the human side of cancer and how it affects individuals and families."

What's your stance on public engagement in science in cancer research?

"I am a big advocate for public engagement in science. For me, public engagement of science has had a huge impact on my own life. I have learned so much from the people who have come and told us about their experiences living with cancer. Being a good listener and understanding how your research is relevant and what you can do as a scientist to improve the well-being of people with cancer, not just through experiments and results, but also through the conversations you have and being a part of their support network and community."



Josh, Researcher in Lammerding Lab

How has your research changed any of your viewpoints about cancer?

"Before coming here, I knew cancer was when you have a tumor cell growing uncontrollably and sometimes they end up in a different organ than where they started in and that makes it worse. But, I didn't know anything else about it.

How has your life changed since you started cancer research?

"My life has changed a lot due to my research. I went from not knowing what I wanted to do after graduating, to now, where I am accepted to graduate school and will be going there next fall."

What is your stance on public engagement in science in cancer research?

"It's very important. Especially with what's going on right now, the NIH budget is in danger of being severely reduced. And I feel like people should realize that that's not something that should happen. People die of these diseases. We could do something about it if there is funding available for it."



Lu, Researcher in Fischbach Lab

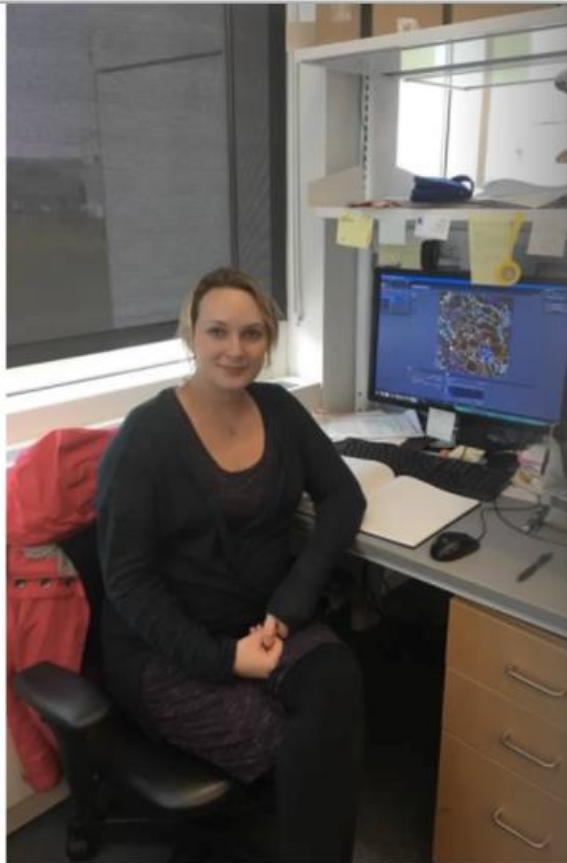
"If you have been advocating something for a long time and it isn't appearing to be effective, then people will lose interest. I think it is the time to reconnect with the public."



What's your stance on public engagement in science in cancer research?

"I did a rotation in a hospital and I think the doctors there were engaged with the patients. They care more about the person-to-person interaction. Here, we are more isolated. The people who research cancer don't get to interact directly with the disease. It's more about the biological problem. It doesn't feel like something that needs to be pushed forward urgently. Scientists need to be more engaged and they should know about the importance of their research. Patients always want to know more about the research progress. But, they don't always have the means to obtain that information."

**Emily,
Researcher in
Lammerding
Lab**



"The most rewarding part to me is the sense of discovery of research in general. It's finding things that no one has ever seen before."

How has your research changed any of your viewpoints about cancer?

"The importance of the whole research system is something that I would say I appreciate more. Understanding the role for basic science. Understanding the role for translational research. Understanding how the funding for a clinical trial actually comes about. Clinical trials are so important to give people that had zero chance, some chance. And I think that is something I would want anyone to understand. It's not risky and experimental. It's your shot and if you have a shot, you should take it."

"The most challenging aspect is balancing all the different aspects. You're presenting, and you're writing, you're a supervisor, and you're also doing the research."

What is your stance on public engagement in science in cancer research?

"The burden is really on us to communicate what we do to the general public. You see that in some of the grants that we write. We write an abstract that is a public abstract and should be understandable by anyone, but a lot of researchers struggle with that because it is not day-to-day what you are used to doing. It's a skill for sure to be able to communicate your research to anybody."



Darshil, Researcher in Weiss Lab

"It is very important for people to understand that there's not a simple answer to cancer. It's a very complex and evolving disease."

How did you get involved in cancer research?

"For me, cancer research has been one of the topics I have interested in for a very long time. During undergrad, I was more interested in medicine. I did a pre-med program and I did everything that a pre-med student does. I did research and shadowed doctors. But as a shadowed more doctors, I realized that a bigger problem in the health care field was cancer research and the idea that we didn't have an answer to cancer. And as I researched more, my interest went from becoming a doctor to becoming a PhD student learning more about cancer. I even got into medical school and decided not to go. Instead, I started my PhD career here at Cornell."

What's your stance on public engagement of science in cancer research?

"It is very very important that we educate people. As a scientist, it is my responsibility to share my knowledge with people that don't understand cancer but are suffering through it. I talk to a lot of cancer patients and we have had conversations, over coffee and dinners, explaining what their symptoms are. I think it is very important for them to understand what treatment they are getting, what the prognosis is, and what the side effects are of this treatment. For patients, I think it is very important for them to learn about their disease and as a cancer researcher, I think it is equally important to share my knowledge."

Do you have a personal connection to any of your cancer research?

"Yes I do. I don't have family members that have suffered cancer but I am involved with the Cancer Resource Center of the Finger Lakes. It helped me put a face to cancer. It's interesting to know that whatever work I do here at Cornell will get translated to help patients."

Nancy E. and Peter C. Meinig School of Biomedical Engineering



Elizabeth, Researcher in Fischbach Lab

"The most rewarding part is knowing that even little discoveries that I make can sum up to something larger that can help a lot of people. I think what's special about cancer research is even negative results are important. It's important to know how cancer doesn't work as well as how it does."

"I think people need to be more educated. It's great that people fundraise and things like that, but people need to know a "cure all" isn't anywhere in the near future, if even possible. I think people should learn about what are realistic goals to look forward to and fund the baby steps so progress can be made and not just put an all in bet on a cure that might not exist."

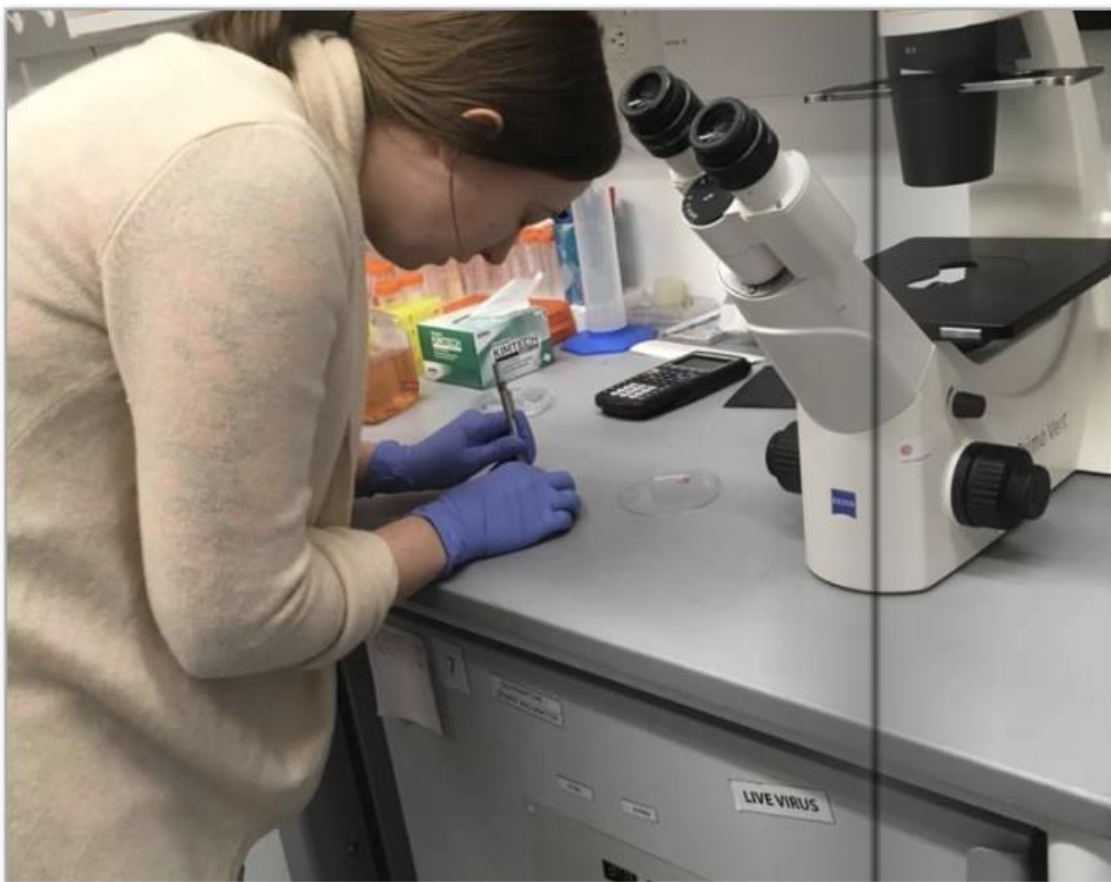
How has your life changed since you started cancer research?

"I think it kind of shed light on how inelegant therapies such as radiation are, but also that cancer is so diverse. Finding a specific therapy is difficult. I think it opened my eyes to how variable cancer is, which is very scary if you are diagnosed with it."

Do you have a personal connection to your research?

"Yes, in the sense that someone very close to me passed away after her breast cancer metastasized to the bone and become essentially untreatable."

"My current research tries to understand how the breast cancer tumor can change bones without leaving the breast. It somehow releases something to make changes to the cells in the bones, which tend to make them weaker. We want to also know how this might make it easier for the cancer to metastasize to the bone."



Alex, Researcher in Lammerding Lab

"My life has changed since coming to Cornell and doing cancer research because I have interacted with a lot more patients with the [Finger Lakes] Cancer Resource Center."

Do you have a personal connection to your research?

"My mom was diagnosed with pancreatic cancer when I was five. And my whole life has revolved around cancer because she was in a clinical trial and if she survived for a certain amount of time then she had to pay her clinical trial bills. Even though she didn't have cancer when I got older, we had a lot of debt, due to the hospital and the doctors, right around when I was going to college. It was always a big part of my life."

What's the most rewarding thing about your research?

"It's rewarding to be able to study this because when my mom had cancer, she didn't even understand what cancer was. The doctor made all the decisions for her. It's rewarding for me to understand the depth and complicated nature of cancer."



"I like engaging with patients just so that I can be there for them."

**Prayga,
Researcher in
Lammerding
Lab**

"The most rewarding thing for me is the fact that I am doing something that somewhere down the line should have an effect for people. I was very close to my grandfather who passed away from cancer and just doing cancer research feels that I am helping his cause."



What is your stance on public engagement of science in cancer research?

"I am pretty much involved so I think it's important. Just because sometimes when things are not going fine, you kind of feel like why are you doing this or what's the point. That's when just looking at people going through [cancer] and talking to them helps you put things in perspective. It's worth putting in those hours."

Bob, Principal Investigator of Weiss Lab

What is your stance on public engagement of science in cancer research?

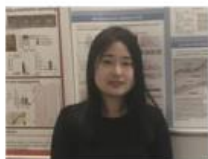
"I think that its tremendously important. I think this has come into focus more recently in the current political climate. I think that even before the change in the administration, there was a sense that the public was becoming more skeptical of scientists and the quality of their research. Until very recently, there was not much public engagement by scientists. The challenges brought on by doubt from the general public and a political environment that seems to undermine science has motivated a lot of scientists to get involved on the public side, to get their views known, and to advocate for science. In the last six months, I definitely see a lot more colleagues engaged in the community and in the political scene than before."

Has your research changed any of your viewpoints about cancer?

"This partnership with the cancer resource center definitely has changed my viewpoints, in terms of having a much better understanding of what patients experience when they have cancer. Studying in the lab is very different than interacting with an actual person. That's had a very big impact on me and it has changed how we think about our research in my lab. Now, I think more about side effects of therapies and potential toxicities. If your just thinking about killing cancer cells, then you only worry about completing that task. But if you think about killing them in a patient who is going to suffer from the side effects, then you factor the toxicity into your thinking. Some of our research is geared that way. We are looking into replacing toxic chemotherapies with other strategies that are non-toxic."



"When you do an experiment, there's often a moment when you get the result, an x-ray film or an image of a gel, and it's such an amazing feeling to understand something from the experiment that nobody else ever knew before."



"Cancer is intriguing to me."-Lu

*"Cancer is a challenge to me."
-Elizabeth*



*"Cancer is a complex but solvable
issue to me."-Adrian*

"Cancer is mystery to me." -Darshil



For full interviews: <https://ejs349.wixsite.com/website>

*For information about Finger Lakes Cancer Resource
Center: <http://www.crcfl.net/>*

*For information on cancer research at Cornell University:
<http://cancer.cornell.edu/>*