Q&A career perspectives

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The Science *& SciLifeLab Prize is awarded annually to young scientists for outstanding life science research for which he/she was awarded a doctoral degree in the previous two years.*

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Q: Will you please summarize your winning essay?
A: So, a fundamental question in cell biology is how cell size is regulated by the environment. And my essay describes exactly this, and how we began to map out a pathway that senses environmental nutrients, such as amino acids, and translates that into cell growth. And so interestingly, what we found was a very complicated signal transduction pathway that is, not surprisingly, deregulated in human diseases. And our hope is that by studying this pathway, not only can we discover the complex underpinnings of human diseases, but we can have a real impact on human health by using this pathway as a diagnostic tool to identify those diseases that can be readily treated with available therapeutics.

Q: How did you become interested in this particular field of research?
A: In college, I took this wonderful paper reading course, and one of the papers we covered dealt with how the signaling pathway mTORC1 senses oxygen levels. I became fascinated with how such a fundamental biological process' growth regulation could be controlled by different environmental stimuli. The more I read about this, it became clear to me that we didn't understand that much. The idea of mapping a completely unknown pathway really intrigued me, and I knew I wanted to delve into the unknown, and by working on this pathway I got to do just that. And because this pathway is heavily mutated in human diseases, I felt that I could also have an impact on human health by researching this area.

Q: Can you tell us about your experience in Stockholm and the prize ceremony?
A: I had such wonderful time, and it has really been so delightful to not only meet the different scientists in Stockholm, but also the other awardees and hear about their cutting-edge research. Being in the Hall of Mirrors—where the first Nobel Prize was awarded—was really awe-inspiring. It's a beautiful venue, and it really makes me feel incredibly honored to be able to participate in this process and the award.

Q: How do you see yourself and your research in the next 5 to 10 years?
A: In the next couple of years, I plan to start my own lab where I'll be focusing on how cells respond to oxidative stress using chemical methodologies and combining them with traditional cell biological approaches. Oxidative stress underlies a wide variety of human diseases, such as cancer and neurodegenerative disorders, and I hope that with our current approaches, not only will we be able to have a better biological understanding of the processes that are deregulated by oxidative stress, but we may also be able to develop therapeutic targets. In the next 5 to 10 years, I'd really like to do what I'm currently doing, which is using novel technologies to get a better mechanistic understanding of fundamental processes in biology.

Q: Do you have any advice for your peers who are interested in submitting an entry for next year's *Science* & SciLifeLab Prize?
A: Being able to communicate your research, in my mind, is almost as important as being able to plan experiments. Unfortunately, I think that scientific writing can often be filled with esoteric jargon, but if you can communicate your ideas in a clear and simple manner, not only will that help you deliver the message to your audience, but it will also help you to distill your ideas which will help your research as well. I also recommend that you really have fun with the process. It's rare as scientists that we can really just let our hair down and write a little more creatively than our typical manuscript.

NOTE:
Answers have been adapted from the original video format and edited for print.

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