



## Q & A with Aylin Rodan

### **How long have you been involved with Telluride Science?**

2017. A senior professor at University of Utah told me about the Telluride Science workshops and encouraged me to go. I contacted Tom Kleyman, one of the organizers of the Epithelial Physiology and Cell Biology workshop, but I didn't get a reply. I didn't know Tom at the time, but a short time later he saw a talk that I gave at the American Society of Nephrology Kidney Week meeting. He came up to me afterwards and said, "You should really come to Telluride." I officially got invited after that and started attending Telluride Science workshops on a yearly basis.

### **What is special about Telluride Science workshops?**

I really love the small size of the Telluride workshops because you get to interact with other scientists on a deeper and more meaningful level. You usually have between 45 minutes to an hour to present your work which is unheard of at other meetings - typically you have somewhere between 10 and 25 minutes, and never get to take a deep dive into the topic. At Telluride, you have a long time to present your work, and it is very interactive. While you are presenting, people are asking questions and making suggestions. The conversation is continued outside of the classroom throughout the week during breaks and on hikes. The other unique thing about Telluride is that participants often attend regularly, which enables an ongoing conversation from year to year. You really get to know each other's work in a deep way and this facilitates interactions, suggestions, ideas, and collaboration. There is plenty of time for hiking or having a meal together which also facilitates relationships. You get to know people in a way that is not possible at the big meetings where everyone is running around with limited time. I recently visited another university where a colleague that I met at a Telluride Science workshop told me about his latest research. We picked up our conversation right where we left it in Telluride.

### **How has Telluride Science impacted your career?**

Telluride Science workshops have had a huge effect on my career. The first year that I attended a workshop I was a junior faculty member still trying to get my work known. At the workshop, I formed relationships with senior people in my field, which helped as I was trying to establish myself. Also, the meeting format really facilitates collaboration. One collaboration that started in Telluride led to us publishing a paper together and writing a successful grant. I remember listening to my collaborator's talk and then telling him afterwards that I had noticed something in a protein that I was studying that I thought might be related. So Telluride was really instrumental in initiating what has now become an ongoing collaboration.

### **What is your scientific field of study?**

I'm interested in how the kidney maintains homeostasis, or constancy, of ions and water in our body. Every day we take in different amount ions and water, depending on what we are eating and drinking. And we have variable losses of ions and water based on our activity levels and how much we sweat, and pathological

conditions like diarrhea. So moment to moment and day to day, your body is constantly trying to balance the ins and outs of ions and water. The kidney's job is to make sure the right amount of ions and water are being excreted so that constancy is maintained, which is critical for all of our cells. I'm really interested in the processes that sense when things are out of balance and how our body responds to appropriately retain or expel ions and water. This is important from a health point of view because we evolved at a time when our diet was low in sodium and rich in potassium. Now our diets are the opposite- high in sodium and lacking in potassium. This is problematic for the kidneys because now it's trying to do something that it wasn't really designed to do. I'm also very interested in the problem of dehydration which is especially relevant as the climate is warming, so more people are at risk of dehydration which increases the risk for kidney diseases. I'm interested in how the body senses this and deals with that problem.

**How is the science you are studying applied outside of the lab?**

I'm interested in the interface between our diet, environment, the availability of water and nutrients and how our habits impact our health. How eating a low potassium, high sodium diet affects our kidneys and the pathophysiological consequences, like high blood pressure. How does our body adapt to a changing world as the planet gets warmer and there are more heat stresses and less water?

**Is there a grand challenge that your field study could potentially solve?**

As a physician, a big challenge I see in the health of the population has to do with diet. Most of us do not eat an optimal diet and there are so many reasons for this--availability of food, what we find palatable, habits, whether we can afford to eat healthy foods. We have a taste for salt because when we were evolving salt was scarce and our bodies wanted to get as much salt as possible. But now this leads to too much salt in our diets. I see the consequence of this all the time in the clinic. Patients have impaired kidney function and therefore can't get rid of salt, and they eat too much salt and that leads to swelling and high blood pressure. But, it's really hard to get people to change their diets. If we can better understand the consequences of these dietary patterns and our body's ability to cope with it, we might be able to intervene in other ways to mitigate against the consequences.