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# 2020 Award Winner Spotlight Series: Part III

- July 30, 2020

This week on Simply Blood we are continuing our 2020 Interview Spotlight Series. In Part III we are featuring the inaugural ISEH Janet Rowley Award Winner: Jennifer Trowbridge, Ph.D.. Dr. Trowbridge's lab studies cell fate regulation within the hematopoietic system, with a current focus on the epigenetic regulation of hematopoietic stem cells and progenitor cell lineage commitment. Here, she answers questions about her work, trends in hematology, mentorship, and more. Have additional questions for Dr. Trowbridge? Don't miss her session at this year's Virtual Scientific Meeting!

### 1. What was the biggest challenge that you had to face in your career so far?

Recruiting a team of scientists that I fully believed in, and felt inspired by, took much longer than I anticipated after starting my lab. It was a significant challenge starting a laboratory in a fairly remote location and there were times when I honestly thought this dream would not happen. What it took for me to get through that period of time was extraordinary patience while upholding my own standards and values for my team, despite the many temptations to recruit individuals that did not quite meet those standards. Of

course I have made mistakes, as everyone has, but I believe that this patience has contributed to our success as a laboratory and has made me a stronger mentor. A second notable challenge relates to being a woman in science – I have not always been regarded with respect based on my scientific accomplishments. Inspired by my peers and female mentors who have been in the field longer than I have, I have become more brave in speaking out in situations that I never would have as a trainee. I believe it is critical that I and others continue to do so, to make positive changes for future generations of women in science.

**2. What advice can you offer aspiring new scientists or those just starting their labs (especially during the pandemic)?**

Many things are harder right now than they would have been a year ago. I think that is important to acknowledge and accept as something that cannot be changed. From my standpoint, what matters in the long run hasn't changed. Success as a scientist is not won or lost in a year. As much as you are able to, place yourself in a supportive environment that is compatible with you achieving what you, and you alone, define as being successful. Find or build your community of peers – making lifelong friends is what I have found to be one of the best parts of this career – and rely on them for advice and help. Similar advice applies to mentors. My own personal list of mentors is long and constantly evolving based on the stage of my career and the type of advice that I need. There's no blueprint that says independence is equal to making decisions entirely on your own. The more senior I become, the better I am at asking for help.

**3. What do you think will be the next big trend in experimental hematology in the next ten years?**

There are undoubtedly several big trends on the frontier in experimental hematology. I believe we will move from current efforts to uncover heterogeneity and fate using single-cell profiling and barcoding approaches into starting to understand how we might experimentally or therapeutically manipulate the processes and mechanisms that govern these choices in a predictable manner. I also believe that as technology improves and becomes more refined that we will be able to study aspects of hematopoietic stem cell biology that were previously intractable in real time or in such small cell populations, including protein synthesis, turnover, and post-translational modifications. It is possible that this will give us a very different picture of what makes stem cells both exquisitely unique and dangerous (with respect to being a reservoir for malignancy), which the transcriptome could not predict.

**4. What do you enjoy doing, apart from science?**

Apart from science, my family is my passion and focus. Raising three young children with my husband is a full-time job in and of itself, especially in 2020. While exhausting, I also consider it an incredible privilege and hope to never have to choose one or the other. We are fortunate to live in a beautiful place that most people only visit while on vacation. When the weather is good, we spend as much time as possible

outdoors hiking the mountains, biking on the carriage roads, swimming in the lakes or ocean, canoeing, ice skating, sledding, snowshoeing, all in the national park (Acadia National Park) that is literally in our backyard and comprises most of the island on which we live.

### 5. What do you value most in a member of your team?

In all of my laboratory members, I value passion and excitement for the discipline of science, and dedication to team excellence. We all know that basic research is incredibly hard and often quite defeating. Being motivated solely by positive feedback from your projects and experiments is a set up for failure and can sink the whole team. Instead, I value commitment to growth and passion for mastering the different types of skills needed to be a successful scientist – critical thinking, designing experiments that generate key data regardless of validating the hypothesis, technical skills, visioning both the big picture and intricate details, concise and effective communication to a variety of audiences, effective mentoring, and so on. Most often science is a team sport, and like other team sports, excellence is achieved by a combination of effective coaching plus high standards being upheld by all members of the team for each other in a way that is supportive.

### 6. What key question would you like to answer with your science during your career?

I have a fascination with understanding stem cell fate choices. To what degree this is pre-determined by history, perhaps epigenetic memory, and to what degree is this subject to external influences at that moment of cell division? These are huge questions that so many scientists in hematology and other fields are grappling with and developing incredible new tools to solve, at a very rapid rate. At the moment, I'm thinking about this question through the lens of hematopoietic stem cell aging and cancer susceptibility. I would be thrilled for my laboratory to contribute to our field by understanding the extent to which hematopoietic stem cell aging is programmed versus stochastic, and if modifiable, discover potential intervention strategies to extend healthspan and prevent blood cancers in our global aging population.

**Jennifer Trowbridge, Ph.D.**

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*Interviewed by Heather O'Leary and Myriam Haltalli of the ISEH New Investigators Committee*

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