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FIRST PERSON

First person – Anne Schaar

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping early-career researchers promote themselves alongside their papers. Anne Schaar is first author on 'Ca^{2+} entry via TRPC1 is essential for cellular differentiation and modulates secretion via the SNARE complex', published in JCS. Anne conducted the research described in this article while a PhD graduate student in Dr Brij Singh's lab at the Department of Biomedical Sciences, University of North Dakota, USA. She is now a postdoctoral research associate in the lab of Dr Rozalyn Anderson at the Department of Medicine, University of Wisconsin–Madison, USA where she is focused on understanding the functional and molecular age-related changes to metabolism with a focus on muscle and adipose tissue.

Anne Schaar

How would you explain the main findings of your paper in lay terms?

Adipose tissue is known to be a location where energy from excess calorie intake is stored in the form of fats. However, it also produces important molecules that are necessary for the regulation of metabolism. The ability of adipose tissue to develop from a pre-mature cell to mature tissue is imperative for the tissue to function properly. This developmental process is not well understood, but we now know Ca^{2+} influx through the Ca^{2+} channel TRPC1 is involved in the early stages. One of the molecules mature adipose tissue secretes is adiponectin, which is known to increase muscle function and whole-body metabolism. Within the cell, adiponectin is packaged in vesicles waiting to be signaled for release into the body. Our research shows that TRPC1 is needed to form the necessary machinery for these packaged vesicles to exit the adipose tissue.

Were there any specific challenges associated with this project? If so, how did you overcome them?

The goal of this project was to understand the role of TRPC1 in both subcutaneous and visceral adipose tissue. Pursuing this goal wasn't possible using immortalized cell lines as they don't carry specific adipose tissue characteristics. We also found that knocking down TRPC1 in both pre and mature adipocytes was quite difficult owing to the nature of the channel and the high lipid content. Because we had a transgenic TRPC1$^{-/-}$ mouse, we decided to move to a primary cell culture method that suited all our needs but was much more labor-intensive.

When doing the research, did you have a particular result or 'eureka' moment that has stuck with you?

Yes. With the healthy TRPC1$^{-/-}$ mice, we observed reduced serum adiponectin levels as compared to the controls, which is generally only observed in obesity. When the adipose tissue itself was tested, there was again no difference in adiponectin levels. It wasn't until we performed the *ex vivo* adiponectin stimulation experiments that we realized adiponectin is getting 'stuck' inside the adipose cells of TRPC1$^{-/-}$ mice.

Why did you choose Journal of Cell Science for your paper?

Journal of Cell Science will bring credibility and exposure to my research, and I appreciate that the journal is community-focused by promoting grants and fellowships to junior researchers.

Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?

I have been fortunate to have a number of mentors over the years who have greatly helped me outside the lab. My PI at UND, Dr Brij Singh, is a brilliant scientist, but he also reminded me that family always comes first. My first science mentor from undergraduate times, Dr Joe Provost, has always been available to discuss life and to help planning the best career path for me.

What motivated you to pursue a career in science, and what have been the most interesting moments on the path that led you to where you are now?

I originally graduated college with a degree in Business and Marketing. But after some years working in event planning, I wasn't

Anne Schaar's contact details: Department of Medicine, University of Wisconsin, Madison, Wisconsin 53792, USA; Geriatric Research Education and Clinical Center, William S. Middleton Memorial Veterans Hospital, Madison, Wisconsin 53705, USA. E-mail: anne.schaar@wisc.edu

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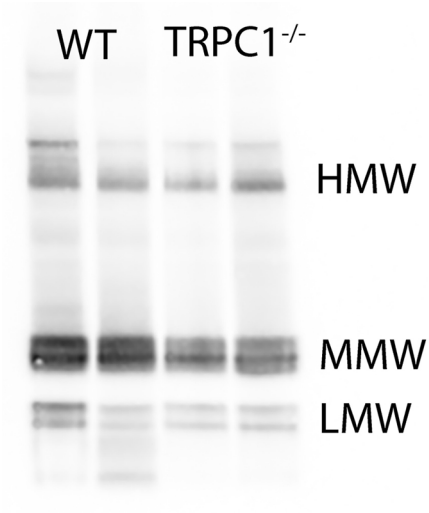

Serum adiponectin isoforms from WT and TRPC1$^{-/-}$ mice assessed by non-denaturing PAGE. TRPC1$^{-/-}$ mice have reduced levels of all isoforms.

satisfied with my career. I'd always been curious about how human metabolism functioned, which led me back to school. I originally wanted to become a dietician, but after a few classes in the laboratory, I was hooked on research. Frustrated by my lack of direction, I met with a biochemistry professor and explained my passion for nutritional research. By the end of the conversation, he told me to switch my major to biochemistry and become a mentee working in his lab. Eight years later I'm still happy with my decision, now I get to combine a career with my quest to understand how human metabolism works.

What's next for you?

For now, my plan is to continue my work as a post-doc in the Anderson lab studying metabolic interventions that affect age-related muscle deterioration. I hope to stay in academia and continue my research on metabolic regulations.

Tell us something interesting about yourself that wouldn't be on your CV.

I'm a single mom to an amazing 10-year-old girl who is trying to make me a better hula hooper.

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