



Where I work Paula Littlejohn

Photographed by Leslie
Kennah/Michael Smith
Laboratories/UBC.

Following my master's degree, I worked for around ten years for pharmaceutical companies, collecting data during clinical drug trials.

As I tracked participants and the medicines they took, I realized that practising health care is essentially managing disease symptoms. That understanding motivated me to study how nutrition interacts with genetics to cause disease.

The microorganisms in our gut influence so much of our physical and mental health, from skin conditions to neurodegenerative disorders. I studied the gut microbiome in my own time, reading books and attending public lectures. For six months, I had in my drafts folder an introductory e-mail to Brett Finlay, who researches the gut microbiome at the University of British Columbia in Vancouver, Canada. After a colleague encouraged me to hit send, Brett replied within 10 minutes. I took on a PhD position in his laboratory – studying how deficiencies in vitamins or minerals that are needed in only tiny quantities in early life can shape lifelong health.

In this photograph, I'm using an anaerobic chamber. It is kept at 37 °C and without oxygen – the perfect conditions in which to grow the gut's microbes. We investigate how entire gut microbial communities respond to, for example, micronutrient deficiencies.

Being an older graduate student has benefits: I have clear career goals and the focus to reach them, the ability to multi-task and a large support system outside the lab.

Ideally, my research could help to create more specialized nutritional guidelines. Right now, they are designed for 'healthy' individuals – but, as one study showed, only 2.7% of US people met modest criteria for a healthy lifestyle, such as doing 150 minutes of physical activity per week (P. D. Loprinzi *et al.* *Mayo Clin. Proc.* **91**, 432–442; 2016). We need to create information on daily nutritional allowances that meets the needs of specific populations, rather than attempting to help everyone with the same guidance.

Paula Littlejohn is a PhD researcher at the University of British Columbia, Vancouver, Canada. **Interview by Virginia Gewin.**