In conversation with Indigenous PhD Graduate Matthew Wiebe

Where are you from, and how did you make your way to the University of Victoria?

I grew up in Selkirk, Manitoba, a Métis-centric community on Treaty 1 land. I also have connections to Manigotagan, which is another Métis community. I'm Métis on my mother's side, while my father is of Mennonite descent. After completing my bachelor's in Winnipeg, I moved to Toronto for my master's degree and then came to the University of Victoria for my PhD.

What did you study for your master's degree?

My master's focused on organometallic chemistry, specifically designing ligands to improve the thermal stability of polymerization catalysts for polyethylene production.

What motivated you to pursue your PhD in chemistry, and how did you decide on your research focus?

I didn't know about graduate school until my second or third year of undergrad. A professor introduced me to a work-study program for students with loans, which allowed me to work in a research lab. I joined a project focused on synthesizing anti-diabetic compounds, inspired by my family and community members with diabetes. That was when I discovered my passion for research and the joy of exploring the unknown.

As I continued, I became increasingly fascinated by synthetic inorganic chemistry and using molecules like Lego blocks to create new materials. This curiosity, combined with my interest in solving real-world problems like plastic pollution, led me to polymer chemistry. For my PhD, I wanted to merge my love for inorganic and polymer chemistry, which brought me to Professor Ian Manners' lab at UVic. I've been working on polyphosphinoboranes and polyaminoboranes, which are inorganic analogs of the polymers I studied during my master's.

How does your Indigenous identity influence your research?

My research is driven by a sense of community. I think about how my work can ultimately benefit people like my family and community members. For example, in Manigotagan, there's discussion about starting silica sand mining operation. I consider how this might affect their water, land, and resources.

While my current research may not directly impact them, it equips me with tools to develop materials that could. Being Métis also shapes how I approach problems. Breakthroughs often come from unique perspectives, and my lived experiences allow me to question norms and find innovative solutions.

What are your career goals post-PhD?

I'm planning to pursue a postdoc in Germany at the Otto Diels Institute for Organic Chemistry in Kiel, where I'll work on organic materials with inorganic elements. Long-term, I hope to become a professor, creating spaces where Indigenous students feel safe, seen, and heard. While academia is my main goal, I'm open to other roles that allow me to serve my community.

What will your postdoctoral research focus on?

I'll be transitioning from polymeric materials to small molecules, exploring organic materials with inorganic elements to enhance photophysical properties. This includes applications like organic light-emitting diodes (OLEDs) and reducing TV glare with chiral, circularly polarized light materials. It's a new direction for me, emphasizing material properties and applications, and I'm excited to learn more.

Why is Indigenous representation important in chemistry?

Representation matters because diverse perspectives drive innovation. My own experiences, as someone who grew up Métis in Manitoba, have shaped my approach to research and led to breakthroughs, like advancing phosphine-borane dehydropolymerization.

Further, exclusion causes harm. Decision-making that doesn't include voices from diverse lived experiences risks leaving people behind. Indigenous representation ensures that institutions and research reflect the needs of all communities, fostering equity and inclusion.

What achievement in your chemistry career are you most proud of?

I recently submitted a paper that challenges longstanding ideas in phosphine-borane dehydropolymerization. It demonstrates that expensive and potentially harmful transition metal catalysts aren't necessary. Simple reagents can achieve similar or even better results. This makes the field more accessible and could open doors to new applications, such as semiconductors and flame retardants.

Do you have advice for Indigenous undergraduate students considering graduate school in chemistry?

Ask questions. When I started, I didn't know much about graduate school or research. Asking questions and seeking out supportive people helped me find opportunities, funding, and guidance. If you're curious about grad school or need advice, feel free to reach out to me. I'm always happy to help.