

Justin Pahara: To the moon and back

Dr. Justin Pahara gets a big kick out of Aha! moments. So much so, he's a junkie of sorts, willing to go to extremes to get his next fix. It's this admirable addiction that has him set on visiting our moon within the next 10 years. And that's just one of his goals.

He doesn't like to talk about himself but clearly, Justin is going places. He's already come a long way from his small town Alberta beginnings. Originally from Coaldale, Justin grew up on a farm with little exposure to the outside world, something his parents encouraged him to change. Heeding their advice, he finished high school, packed his bags and left the farm to study science at the University of Alberta. He chuckles as he remembers that school was easy. That was until university, when he was admittedly shocked that he had to try. He didn't fail but he says he came close to it in the first years of school. Then he had an Aha! moment, and everything changed. "I realized that biology is technology, and that really inspired me." His passion for both subjects combined to spark a flame, and his marks shot up. His ambition to learn drove him harder to earn his master's degree in cell biology (cancer research). Then, in March 2013, Justin became Dr. Pahara, after earning his PhD in Synthetic Biology from Cambridge University, England.

He credits his parents, mentors and hard work, but Justin also attributes his accomplishments to his Cree roots. Although he had limited exposure to aboriginal culture growing up, Justin has enriched his connection by spending more time on the Drift Pile Reserve, where his grandmother is from. His exploration of different spiritualities and philosophies led him back to his roots, and is one of the reasons he dove into biotechnology. "Biotechnology offers us the opportunity to create technology that is biology, and fits into the environment... So rather than using harsh chemicals and high temperatures, we can use yeast or bacteria at low temperatures to do the same thing, and create byproducts that are natural. This is appealing to me. I see this as a way for humanity to reintegrate into the biosphere. It's one of the things that drew me to biology - the idea that in aboriginal culture, you don't exploit the land, and you try and live in harmony with it. It has definitely inspired my life path"



In addition to space travel, Justin dreams of starting the first aboriginal biotechnology company, a way he can give something back to his community. In the meantime, he is focused on promoting science and preserving aboriginal culture using technology. He also plans to talk with reserves about the potential of technology to enhance their economic situation. "Technology can help reserves become economically sustainable and thrive beyond geographical location – this is where the internet can be very powerful."



In the meantime, he is focused on growing his internet biotechnology business - <http://openwetware.org/wiki/User:Jpahara> - which he developed while earning his PhD. Together with three co-founders, Justin manages the business. "The website is a collaborative platform that makes doing science much more accessible to everyone. It allows researchers to do their work more effectively, whether they're in the same lab or geographically separated."

At just 29, Justin already has an incredible resume, and the sky is no limit for his future. So, what has he learned along the way? First, he urges youth to stay in school, "Sometimes you have to do what you have to do, to do what you want to do." Justin also recommends travel, and seeing possibilities versus barriers, "there is an amazing world out there with amazing people, unlimited possibility, and you can do whatever you want. You just need to figure out how to do it."

Next, Justin advises that youth surround themselves with positive people. He has a slightly mischievous grin as he remembers his teen years, and being "all fired up" in Coaldale. But then, drinking and bush parties were the thing to do. Then he moved, his environment changed and he changed with it. "I'm actually very quiet. I like to listen and contemplate a lot," he says, adding "I surround myself with amazing people that inspire me."

Justin also advises that failure is under rated. "It's really, really ok to fail," he says. "I've failed a bazillion times, and I've made myself look like an idiot a bazillion times." He explains that it's easy to get over mishaps if you see them as a fact of life, and a process of improvement. "The act of being inactive is a lot worse because you can always learn and do it right the next time." He adds that sometimes failure can lead to wonderful Aha! moments. Perhaps it's the scientist in him talking when he says he likes to find out he is wrong. "It means I've found 'the right'. I'm stubborn, so it's even better when my perception is flipped on its head."

If he has his way, Justin's internet company will take off and he can focus on philanthropy, using his education and experience to help aboriginal people living on reserves. In the meantime, he passes on one more piece of advice, "You can never have enough aha moments."

Aha!