

# Physics at USS: an interview with Lisa Lim-Cole

by Stan Taylor

Lisa Lim-Cole was born in Seoul, South Korea. She immigrated to Canada at the age of one and was fully educated here. Following secondary school, Lisa attended McGill University earning a Bachelor of Science degree in Physics and Queen's University earning a Bachelor of Education degree in Intermediate/Secondary Physics, Science and Mathematics as well as an Honours Specialist in Physics through Queen's University Faculty of Education.

*What degree(s) are you currently working on?*

None. I have been busy focusing on teaching science and physics at Uxbridge Secondary School (USS) as well as raising two children of my own (now 5 and 8 years old). I would like to eventually return to school, but I'm not sure when I will make time for it.

*Why did you chose science as a career?*

I was always interested in science. As a high school student, I was always a high achieving student. I put a lot of pressure on myself to do well. I think I grew up in a typical Korean family where it is expected that you study hard and do well in school. I started my degree as an anatomy-physiology major fully intending to pursue the medical profession. However, I soon realized that I was more interested in mathematics, physics and applications of

computers. I then started to think about other options which led me into teaching.

*How did you become interested in your field of science?*

To be honest, I didn't really understand the concepts in physics in high school. It wasn't until I was at university that I saw how physics describes many things. I became more engrossed in the ideas. It was challenging. For some reason, perhaps out of pure curiosity the challenges I faced made it worth my while.

*What is the most interesting or intriguing part of your job?*

Teaching is an important job. I don't think that anyone would disagree with that. Teachers face our youth each day to help them develop skills to make them successful individuals. I think that the opportunity to share my passion for physics and science with a group of students everyday makes my job exciting.

More recently, I have been working with the Ontario Association of Physics Teachers as their newsletter coordinator. This allows me to be connected to other physics teachers across Ontario. I am also working as a Perimeter Institute (PI) Teacher Network Associate providing physics teacher workshops across Ontario as part of their large Outreach program.

*How is technology used in your job?*

As a physics teacher, I have always been an advocate for the use of technology in the classroom. At

Uxbridge Secondary School, the physics programs have always used computers with data logging equipment. This enables students to conduct experiments using computer analysis. My focus for the physics program at USS has always been about developing strong problem solving skills both on paper but also in real life applications. We encourage our students to use many differ-



ent digital media to complete projects and/or assignments. We have had students create Prezi1 presentations, Clamation2 presentations using digital photography, Glogster3 and Power Point to name just a few.

*Where should students start if they want to pursue a career like yours?*

Doing well in mathematics and science is obvious. Teaching requires many key skills including organization, patience, good listening skills, good verbal and written communication, and a strong presence. I think that teachers must also be creative individuals. Creativity and innovation drives our lessons.

*What is the most significant change in your field that you've seen over the course of your career?*

The most significant change in physics education has been in instruction. Physics Education Research has been an area of research in many postsecondary institutions across North America and around the world. Physicists wanted to learn how students learn physics, and have taken a scientific method to actually collect data to prove that certain strategies in instruction are proven to improve student engagement and their ability to learn conceptual ideas that are difficult to grasp.

*What are the most rewarding aspects of your career?*

I once had a student ask me, "Why do you teach?" I actually had to think about that for a while. I teach in the hopes that one day, I may inspire one person (many more ideally, but one would make my career worthwhile) to do great things. I think that my work with the Perimeter Institute and being involved with physics teacher workshops has also been quite rewarding for me. I've managed to provide interesting opportunities for USS students by organizing and running an annual trip to PI for our students. Last year, I coupled the trip to have our students participate in the McMaster Science Olympics and managed to place in a few competitions. I worked with the Outreach team at PI and had them do a workshop on December 1st at

USS for the top Grade 12 physics students in Durham.

*What are your interests, sports to play, hobbies?*

I love spending time with my family. My kids are growing fast and I find that with all my commitments, I struggle to balance my time. I love to knit - I'm self taught with no ability to follow any preset patterns. Baking is also one of my favourite activities. I love reading but wish I had more time to do it. Summer seems to be a better time for that. I have recently managed to do more physics-related things in the summer as well: For example I worked at PI as a facilitator of their EinsteinPlus workshop this past summer. It was quite amazing.

This year, I have been asked to become the local coordinator for PI Workshops for Eastern Ontario. I have been working to make contacts with school boards in order to coordinate PI workshops for this upcoming year.

I am always looking for opportunities for our science students at USS. This is an ongoing process. Each year we have added new experiences for our students. We are looking forward to another year of exciting opportunities.

*Last year, students under Lisa's tutelage took part in the University of Toronto Institute for Aerospace Studies (UTIAS) program. Participation is planned again for this year and future articles will feature these promising USS scientists.*

## Stress creates smokers - and keeps them smoking

by Octavian Lacatusu

*This is national non-smoking week in Canada. We sent our reporter (and our Tiger Talk writers - see page 10) out on the street to see why people still pursue this destructive habit.*

Every new year brings with it the resolutions. To lose weight. Get a good job. Be a better person. Drive a faster car. But one that is more pressing for a lot of Canadians is to part from the clutches of smoking.

Ironically though, many get hooked onto nicotine around the holidays, since the levels of stress and turmoil encourage individuals to blow out more smoke than an old steam locomotive. One local says it was around New Year's time that she got into it, chugging down around a pack a week.

"I kind of just got into it ran-

domly around New Years and I've been smoking ever since," she said.

In fact, all of the local Uxbridgers we talked to admitted that stressful and emotionally disturbing situations is what initially drove them to take up smoking, highlighting stress as the most powerful of all catalysts. In one coffee shop, a girl said she's been smoking for the last six years, much of it because of family issues and overall stress.

"I'm hoping to finish by the end of high school," she said, adding that she's been partially influenced by her peers to smoke.

"I got into it like everyone else did. When I was younger, I just kind of followed the group and got hooked on it before I knew it."

Another woman said in times of an argument at home, her garage is the safe haven of smoke

and peace.

"I'll need five minutes by myself. I would run down to the garage, have a smoke and



regroup," she said, adding that personal willpower to quit can be achieved without severe repercussions, though it can still be hard even when you think you've quit.

"I was always able to quit cold

turkey. But married, with two jobs, three kids, mother living with us, and bills, the craving eventually returns."

There are, however, feasible remedies. One smoker at a corner admitted to using a type of electric cigarette for the last two weeks to fight the urge. The cigarette supposedly lights up and releases a vapour when it's puffed, similar in nature to its more toxic relative, but free of the same poison. Despite its innovation, others who've adopted the electric cigarette find it somewhat unusual.

"It's weird, it's completely weird. When it's done you then recharge it by plugging it into a USB. It's great but it's just not the same feeling."

Another local explained that

smoking has a lot to do with a "security blanket mentality" saying smokers need their outside smoking break to revive their energy and morale. He says this isn't necessarily a good thing.

"It's giving the smoker a reason to grab their cigarettes, go outside, puff through their 15 minute break, go back in, and with the next break do the same exact thing," he said.

Smokers still willing to keep true to their New Year resolution can join such programs such as "STOP on the Road Workshop" offering free nicotine replacement therapy, or "Countdown to Quit" that offers a six-week smoking cessation support group. If you're also in need of new wheels, you can try and kill two rabbits with one stone by joining the "Driven To Quit..." provincial quit smoking contest. For more info, go to page 8 of this week's *Cosmos*.