Article rank | *23 Feb 2019* *Toronto Star* | *PERRY LEFKO* *SPECIAL TO THE STAR*

Panel generates ideas to break Toronto's gridlock

Experts at seminar by U of T discuss how transportation in the region can be ' awesome'

The volume of traffic is increasing every year and, along with ongoing (and some would say never-ending) construction in various areas in and around Toronto, is there any hope on the horizon for motorists?

That was the topic of discussion Wednesday at a seminar in the John Bassett Theatre at the 2019 Canadian International AutoShow.

Presented by the University of Toronto Transportation Research Institute and hosted by its Executive Director Dr. Judy Farvolden, the topic was titled "Preparing for 21st-Century Transportation in the Toronto Region — How It Can Be Awesome."

The panel included seven guests, each of whom presented thoughts or ideas on the gridlock — particularly in the Greater Toronto Area — and some ways to alleviate it on the streets and parking lots, in particular with autonomous cars.

"It's my job to make transportation research at the University of Toronto meaningful and useful," Farvolden said in her opening remarks. "By being here today you help me to achieve that. The future can be awesome if we welcome those innovations and pull together to create the partnership we need to succeed globally.

"Toronto ranks among the top cities in so many ways ... but all of us know how difficult it is to get to work, to school, to visit family, friends and it's taking an economic, as well a personal toll, on all of us."

She pointed out the transportation sector is the single-largest emitter of greenhouse gases in Ontario, the city is North America's fourth-largest and fastest growing metropolitan area, and the population is projected to increase by 50 per cent over the next two decades.

Here are the highlights from each of the speakers.

Prof. Eric Miller, director UTTRI and professor, civil engineering: "There's a tremendous amount of good things happening in this region and good things happening in transportation ... Transit is an essential component of any large city in the world. We can't exist without it. It's not nice to have. It's a must have. Transit is the motorist's best friend, even if one never takes transit itself because of travel patterns or preference. The fact that transit systems exist in moving millions of people a day makes life easier for you on the highway. In this region we don't always see that right now with the congestion, but that's part of the story line."

He pointed to some major projects that will have a significant difference, including the plan to turn Pearson Airport into a mobility hub, effectively creating a second Union Station. Metrolinx's master plan is to create a regional transportation plan for 2041. The Eglinton crosstown light-rail system.

Dr. David Wolfe, professor of political science at U of T and co-director of the Innovation Policy Lab at the Munk School of Global Affairs and Public Policy: His research is on innovation systems and economic development and growing urban economies. He talked about the growing integration of the auto and technology sectors.

Article rank | *23 Feb 2019* *Toronto Star*

Tolls based on time of day and location suggested

"Ontario has been the second largest auto producer in North America since the 1990s with five OEMs operating in Ontario and countless tier one suppliers, such as Magna and Linemar and many smaller parts suppliers," he said. "All of that production based in the Ontario economy is currently at risk of disruption because the whole transportation sector is undergoing the most profound changes experienced in the last 100 years."

On the supplier side, there are three dynamic technologies: connected mobility, electric mobility and autonomous mobility.

"It's cool and it's coming faster than we think," he said. "The demand side is being pushed because consumers want to consume mobility services in a radically different way than they have in the past.

"I won't say the future is bright," he cautioned. "I'd say the future is uncertain because most of the automobile industry as we know it is at risk. My indicator of what the future looks like is when I go into a Tesla showroom. In effect, the whole vehicle is a software product."

Keenan Burnett, the technical team lead for aUToronto: aUToronto is competing in the AutoDrive Challenge, which is a three-year North American collegiate competition to develop and demonstrate a self-driving vehicle by 2020. U of T's team designed a Chevrolet Bolt, which it dubbed Zeus, and finished first in the initial competition in Yuma, Ariz., last May.

"We're one of only a few selfdriving research groups in Canada," he said. "We're really leading the charge in terms of selfdriving and AI research."

He said his team is aiming to put a self-driving vehicle on the streets of Toronto this year.

Ted Graham, head of Open Innovation at GM Canada: Graham identifies partnerships to help build new forms of mobility, including autonomous and connected vehicles.

"When we look at all the challenges ahead of us, it's really important for us to be humble and realize there's lots of view points in the world today around how to solve a multitude of challenges that we face in the industry under pressure," he said.

"One of the visions we've been talking about internally that has been a huge driver for the investments we've made and partnerships we've sought out is the triple zero vision of zero crashes, zero congestion and zero emissions," he said.

Dr. Mehdi Nourinejad of the Rotman School of Management and adjunct professor of the Ted Rogers School of Management: His research focuses on optimal planning and control of sustainable transportation systems and Smart Cities with autonomous vehicles. His studies have focused on parking in the AV world.

He pointed out how parking is an inconvenience because you have to search for it. He said on average it takes seven to eight minutes to find a parking spot in downtown Toronto. He said there may be some good news to alleviate this problem with the advent of autonomous vehicles. He pointed to how AVs can help owners drive straight to a mall, park straight at the door and send the car to park itself. Once done at the mall, the car can be summoned to pick up the owner at the door and drive home.

"There's two advantages — you no longer have to search for parking so it's super convenient and you no longer have to park close to where you are," he said. "You can send your car to park somewhere else that's cheaper or more convenient."

He said the challenge is the decision process of where you put the cars, which becomes more complicated as the number of vehicles in the facility increases. He said an advantage of moving cars around is you can pack a lot of AVs in a small area because they are not built the same as today's vehicles.

"You can have a futuristic scenario of huge parking lots of islands of cars parked behind each other," he said. "Autonomous vehicle parking allows us to re-arrange our land use and make more efficient use of the spaces we have."

Dr. Jonathan Hall, Professor of economics at U of T, a micro-economist who focuses on urban transportation: He talked about how to design road tolls to help all users. He said drivers would pay "congestion pricing" based on where and what time of day.

"This toll would make life a lot better in a lot of different ways because it affects people's choices on a number of different dimensions," he said. "What I've been working on for the past three years is there some way we can design these tolls in a way that would actually make people better off? Sure you pay the toll and your travel time is a little bit better, but we want this toll to make every single driver better off."

Ryan Lanyon, manager of Transportation Policy and Innovation, City of Toronto, and chair of Automated Vehicles Working Group: He noted that the City of Toronto does not have an official policy or position around AVs or disruptive technology.

"We're working on that and as staff we've been building our expertise internally and will be recommending a policy position to city council this year," he said. "To help us address that we're creating a tactical plan. We want to make Toronto ready for automation. We want to be able to take care of this potential disruption that's coming. It's a once-in-a-century opportunity. We can see the future on the horizon, so let's make it a priority to get ready for it before it arrives."