

**Joint House and Senate Transportation Committee Hearing
Pennsylvania General Assembly
Hearing Room 1
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Good morning Chairman Rafferty, Chairman Sabatina, Chairman Taylor, Chairman Keller, and the other distinguished Transportation Committee members. Thank you for the invitation to testify today.

My name is Shari Shapiro. I am Uber Technologies, Inc.'s ("Uber") Senior Public Policy Manager for Pennsylvania. My remarks today will focus on the economic benefits of self-driving safety technology.

When fully deployed, the economic benefits of self-driving vehicles are expected to exceed \$1 trillion in the United State alone. These savings are the result of reduced congestion, improved productivity, better fuel efficiency and lower healthcare costs. (Clements, L., Kockelman, K, Economic Effects of Automated Vehicles, Transportation Research Record, Forthcoming 2017).

For most of the world, the benefits from self-driving vehicles are several years away. But not here in Pennsylvania. Through the investments of companies like Uber, Pennsylvanians are already realizing the economic benefits of cars with self-driving technology.

Uber opened its Advanced Technology Center in Pittsburgh in 2015. Since then, we have invested hundreds of millions of dollars in research, testing and deployment of vehicles with self-driving safety technology.

In less than two years, we have created more than 500 local jobs, both blue- and white-collar. We employ engineers, roboticists and artificial intelligence experts, as well as automotive technicians, vehicle operators and maintenance staff.

Our expanding operations have also created demand for goods and services from local small businesses. Let me give you an example.

Common Plea, a catering company located in Pittsburgh's Strip District, has been serving Pittsburghers since 1971.

We hired Common Plea to provide meal services and catering at our Pittsburgh facilities. As a result:

- Sales have increased by 75%
- They have hired 25 additional people to handle the account, including production, distribution and sales positions.
- They needed newer trucks and kitchen equipment, which were purchased locally.
- Their weekly orders with local businesses and farms have contributed to their growth as well. These businesses include Presto George (Strip District), Commonplace Coffee (East End), Market District (Fox Chapel), Bread Spreads (Avella Local Farm), Restaurant Depot (Strip District) and Weiss Provisions (Strip District).

In addition,

- We rely on several local high tech electronic and mechanical components vendors and fabricators
- We redeveloped 55+ acres of brownfield (i.e. former industrial) sites, and now lease millions of square feet of testing, manufacturing, administrative and engineering design space in the Pittsburgh area.
- Many of our testing and support vehicles have been purchased locally, including replacement parts, etc.
- We have ongoing work with six Pittsburgh-based architecture firms.

- We have long term service agreements with HVAC, maintenance, cleaning, building supply, electrical, security, automotive maintenance and tooling vendors.

Most importantly, we showed that Pennsylvania is a great place to start or grow an autonomous technology business. In September, 2016, Uber launched the first commercial deployment of autonomous vehicles on a ridesharing network.

As a result, Pittsburgh was instantly rocketed to the top locations for self-driving technology globally and Pittsburgh's leadership was featured in headlines around the world.

There is now a burgeoning cluster of companies, like Google, Argo, Aurora, and Delphi that are developing their autonomous vehicle technology businesses in the Greater Pittsburgh area.

Students from local universities like Carnegie Mellon and the University of Pittsburgh that might have once left for New York, Michigan or California are choosing to stay in Pittsburgh after they graduate to become part of the technology revolution happening here in PA.

Pittsburgh's growing self-driving vehicle technology cluster is a fantastic example of what can happen when state and local governments encourage innovation and take care to ensure that regulations do not create unnecessary barriers to growth.

Unfortunately, in its current form, SB 427 creates upfront barriers to developing and deploying self-driving safety technology here without making Pennsylvanians any safer. We believe that there are better ways to address key issues like safety, insurance, accident reporting, registration, and titling, without needlessly restricting testing and deployment of vehicles with fully self-driving safety features.

It is our hope that we can work with the Committees to find a regulatory framework that allows companies like Uber to continue to develop technology that

has the power to generate jobs, spur economic growth and save thousands of lives right here in Pennsylvania.

UBER

Investing in Pennsylvania's High-Tech Economy

- Uber opened its Advanced Technology Group (ATG) headquarters in Pittsburgh's Strip District in 2015.
- Uber has **created more than 500 jobs** in the Greater Pittsburgh Area, ranging from high tech engineers to vehicle operators to security and maintenance staff.
- Uber has **invested over \$100 million** in its Greater Pittsburgh Area operations.
- While many other businesses seek tax credits or aim to tap into industrial development funds, Uber's ATG got **started in Pennsylvania entirely without state taxpayer funding**.



Helping Revitalize Pittsburgh

- Uber helps grow the local economy by **engaging a broad range of small businesses** as vendors.



Case Study: Common Plea Catering

- Provides food & beverage service for the ATG facilities
 - **Sales have increased by 75%**
 - **25 new employees hired**
 - Purchased new trucks and kitchen equipment from local businesses
 - Increased order volume from local suppliers, e.g. farmers
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- By **developing millions of square feet of contaminated, former industrial properties**, Uber has injected millions of dollars into the local economy and improved Pittsburgh's environment.
 - This is all in addition to the **4,000+ Pittsburghers who make money today by driving with Uber**.

UBBER ATG

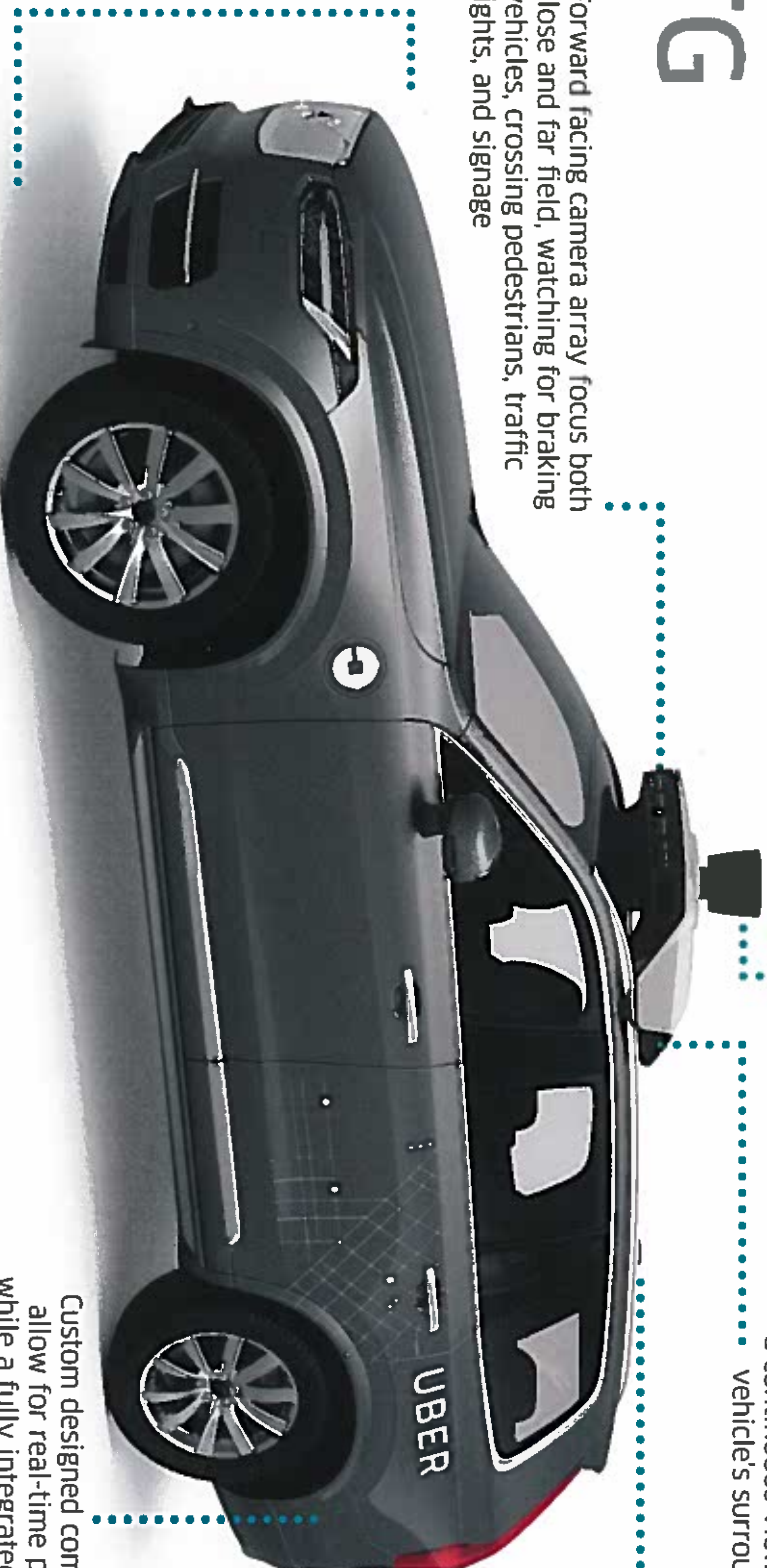
Forward facing camera array focus both close and far field, watching for braking vehicles, crossing pedestrians, traffic lights, and signage

Top mounted lidar units provide a 360° 3-dimensional scan of the environment

Side and rear facing cameras work in collaboration to construct a continuous view of the vehicle's surroundings

Roof mounted antennae provide GPS positioning and wireless data capabilities

360° radar coverage



Custom designed compute and storage allow for real-time processing of data while a fully integrated cooling solution keeps components running optimally

Self Driving Uber sensor suite

7 Cameras
1 Laser
Inertial Measurement Units

Custom compute and data storage
360° radar coverage

Advanced
Technologies
Group

UBER