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RPTR GIORDANO

EDTR ZAMORA

AUTONOMOUS VEHICLES: PROMISES AND CHALLENGES OF EVOLVING AUTOMOTIVE TECHNOLOGIES

TUESDAY, FEBRUARY 11, 2020

House of Representatives,

Subcommittee on Consumer Protection and Commerce,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:01 a.m., in Room 2123, Rayburn House Office Building, Hon. Jan Schakowsky [chairwoman of the subcommittee] presiding.

Present: Representatives Schakowsky, Castor, Veasey, Kelly, O'Halleran, Cardenas, Blunt Rochester, Soto, Rush, Matsui, McNerney, Dingell, Pallone (ex officio), Rodgers, Upton, Burgess, Latta, Guthrie, Bucshon, Hudson, Carter, Gianforte, and Walden (ex officio).

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Also Present: Representatives Doyle, Johnson, Kinzinger, Long and Bilirakis.

Staff Present: Jeff Carroll, Staff Director; Evan Gilbert, Deputy Press Secretary; Lisa Goldman, Senior Counsel; Waverly Gordon, Deputy Chief Counsel; Daniel Greene, Professional Staff Member; Alex Hoehn-Saric, Chief Counsel, Communications and Consumer Protection; Zach Kahan, Outreach and Member Service Coordinator; Phil Murphy, Policy Coordinator; Joe Orlando, Staff Assistant; Alivia Roberts, Press Assistant; Chloe Rodriguez, Policy Analyst; Andrew Souvall, Director of Communications, Outreach and Member Services; Sydney Terry, Policy Coordinator; Mike Bloomquist, Minority Staff Director; S.K. Bowen, Minority Press Secretary; Jordan Davis, Minority Senior Advisor; Tyler Greenberg, Minority Staff Assistant; Peter Kielty, Minority General Counsel; Bijan Koohmaraie, Minority Deputy Chief Counsel, CPAC; Tim Kurth, Minority Chief Counsel, CPAC; Brannon Rains, Minority Policy Analyst; Peter Spencer, Minority Senior Professional Staff Member, Environment and Climate Change; and Callie Strock, Minority Press Secretary.

Ms. Schakowsky. The Subcommittee on Consumer Protection and Commerce will now come to order.

The chair will now recognize herself for 5 minutes for an opening statement.

So I wish you good morning, and I thank you for being here to attend our hearing, much-awaited hearing on self-driving cars.

In 1966, the year Ralph Nader published "Unsafe at Any Speed," more than 50,000 Americans died in auto crashes. The same year, President Johnson signed into law the National Traffic and Motor Vehicle Safety Act, which required the adoption of new, upgraded vehicle safety standards, and created an agency, NHTSA, to enforce those safety issues.

Since then, the country's population has increased by 100 million people, but we have seen auto fatalities drop to -- still not great -- 36,500. This represents significant progress, but much of this progress is thanks to safety advocates who have pushed regulation to require a host of new or stronger safety requirements, often, I must say, after stiff opposition from industry, that bring technologies like airbags, antilock brakes, and, more recently, rearview cameras to market for all consumers.

Many safety technologies, such as automatic emergency braking, lane departure warnings, and pedestrian -- and pedestrian detection, those exist today and can dramatically reduce the number of auto fatalities and injuries every year, but deployment of such features is slow and often reserved for those who are willing to pay a premium for advance safety features.

Beyond the scope of this committee, I just want to mention, however, are serious

questions about the impact mass deployment of self-driving cars will have on the economy, particularly on the workforce. Congress must be very thorough and move with an abundance of caution when it comes to passage of legislation that has the potential to cause mass labor displacements.

More than 4.4 million Americans age 16 and over work in some capacity as drivers. After NAFTA was passed in 1993, which resulted in enormous job loss, the Federal Government had done next to nothing to support workers who were displaced, and we can't let that happen again.

The job before this subcommittee is to work on legislation that will significantly reduce fatalities and injuries from vehicle accidents. This means smaller steps that can be done immediately and longer term opportunities like self-driving cars, which have the potential to provide mobility to seniors and those with disabilities. It is my expectation that other committees will work on the issues affecting our workers.

So I thank the witnesses for being here today, and yield the balance of my time to my friend and colleague, Representative Mike Doyle.

[The prepared statement of Ms. Schakowsky follows:]

******** COMMITTEE INSERT ********

Mr. Doyle. I want to thank the chair for yielding time to me and for holding this important hearing.

Autonomous vehicles hold tremendous promise for the future of mobility and auto safety. In Pittsburgh, we have been leading the world in the development of autonomous vehicles at Carnegie Mellon University for decades, where companies like Argo AI, Aurora, Aptiv, Uber and others have based their R&D efforts.

Pittsburgh has also developed a set of principles and partnership with industry, academia, and local government for the testing and deployment of AVs in our community. The Pittsburgh principles prioritize human safety, transparency, cybersecurity, and public engagement. I believe that by working collaboratively, we can develop, test, and deploy AVs in a responsible way that maintains American leadership while instilling in the American people the confidence that these vehicles are not only safe, but that they can positively benefit us in ways we can't yet imagine. To achieve this, the government needs to have the resources, expertise, and authority to deal with the challenges and opportunities posed by this technology.

Madam Chair, thank you so much for yielding the time, and I yield back.

[The prepared statement of Mr. Doyle follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. The gentleman yields back.

And now the chair recognizes Ms. Rodgers, our ranking member for the Subcommittee on Consumer Protection and Commerce, for 5 minutes.

Mrs. Rodgers. Good morning, and welcome to the Consumer Protection and Commerce Subcommittee hearing on autonomous vehicles. Today's hearing is a critical step in our bipartisan effort to advance solutions that will save lives, end road congestion, and improve mobility for people with disabilities, our seniors, and those without easy access to public transportation.

Each year, we lose about 37,000 lives on our roads. That is equivalent to more than three commercial passenger planes falling out of the sky every week. If that was happening, it would be a national emergency. Deadly traffic accidents are just as much a crisis, and we must treat it as such.

But there is hope. Automating the driving process can drastically improve safety, because 94 percent of all traffic accidents are due to human error. Autonomous vehicles will remove that error and save lives. Like for people who are blind and have other disabilities, AVs will be transformative. This technology will completely knock down mobility barriers. People will no longer need to rely on others to go to work, to the grocery store, or visit a friend across town.

Mr. Riccobono, I want to thank you for being here today to discuss the autonomous vehicles and what they will mean for your community. Also, welcome to David Fair and Marci Carpenter, who traveled from Washington State with the National Federation for the Blind.

Last Congress, every Republican and Democrat on this committee voted for the SELF DRIVE Act, a rare 54-0 vote, which the House then passed unanimously. The SELF DRIVE Act established a needed Federal framework for the safe development and deployment of this technology. Unfortunately, a framework is still needed today.

America is leading the world in innovation and is home to the most advanced autonomous vehicle companies on the planet, but we still trail other countries in our lack of a national approach with no viable path to deployment. According to an annual report that ranks countries on AVs, the U.S. has fallen behind since our work on the SELF DRIVE Act, and we will continue to fall if we fail to act.

Other countries, like China, are not waiting for us. They are moving full speed ahead, and it is happening in our own backyard. Since this committee passed SELF DRIVE, Chinese developers have nearly doubled their presence in California. Just last year, Chinese developers logged the second most miles of any country testing there. China is using our infrastructure, testing on our roads, collecting information on our citizens, and stealing our technology to beat us.

There is a global race to AVs. Do we want China to win that race or do we want to lead? Do we want all the safety, faster traffic, and mobility benefits to go abroad, or do we want to win this future and deliver for the American people? I urge everyone here. We have no choice. We must lead and we must deliver. That is how America wins thea~~a~~ future to beat China and maintain our global competitive edge. We must establish a Federal framework that enhances the safe development of AVs and provides a path for deployment.

If we fail, investment in this transformative technology will go abroad. If we fail,

the safety, less congestion, and mobility benefits that will come with this technology will go elsewhere. If we fail, the American people will lose.

We have a real opportunity here. We can advance lifesaving and life-changing technology. We can ensure America remains the global leader in innovation. We can beat China. As we proved last Congress, we can do this together with bipartisan ideas that aren't just Republican or Democrat, but uniquely American. The time is now.

And I would like to yield the remainder of my time to a leader on this issue, Mr. Latta.

[The prepared statement of Mrs. Rodgers follows:]

******** COMMITTEE INSERT ********

Mr. Latta. Well, I thank the gentlelady for yielding, and also thank the chair for holding today's hearing. It is very, very important.

Self-driving cars are the way of the future, and will revolutionize our Nation's highways. Three years ago, as chair of the subcommittee, I began thee process ~~and~~ to legislate on self-driving cars. We took over 300 meetings before drafting a bill that found the right balance of encouraging innovation and implementing Federal guidance where appropriate. Congress' role isn't just to ensure the United States is a leader in the development of autonomous vehicles; Congress must act to provide Americans with safer vehicles so that we can better prevent accidents and loss of life on our roads.

Self-drive cars will make America safer and give mobility and independence to seniors and individuals with disabilities. These are just a few of the reasons why the SELF DRIVE Act was so significant and why it was passed out of the House in 2017.

I am pleased to see the committee continue to focus on this critical issue, and I urge the chair to swiftly consider bipartisan AV legislation.

And, before yielding back, Madam Chair, if I may ~~offer~~ ask unanimous consent to offer the letter from CTech for the record. I greatly appreciate it. And I, again --

Ms. Schakowsky. Without objection.

Mr. Latta. -- want to thank you very much for holding today's hearing. I yield back.

[The information follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. The gentlelady yields --

Mrs. Rodgers. I yield back.

Ms. Schakowsky. -- yields back.

And the chair now recognizes Mr. Pallone, chairman of the full committee, for 5 minutes for his opening statement.

The Chairman. Thank you, Madam Chair.

Last year, nearly 37,000 people were killed in motor vehicle traffic crashes. Another 4.5 million were injured. According to the National Highway Traffic Safety Administration, or NHTSA, human factors, such as driving error, speeding, and drunk driving, are linked to 94 percent of serious motor vehicle crashes.

Auto makers, often pushed by Congress and regulators, are integrating technology into vehicles that mitigate human error and save lives. Advanced driver assistance systems have arrived and are already reducing unnecessary motor vehicle deaths and injuries.

Other technologies, like automatic emergency braking, lane departure prevention, and blind spot detection are in luxury vehicles today and will hopefully be in all cars soon. These incremental technologies will save lives, and we must continue to advance these technologies.

At the same time, we also must look to revolutionary advances that may transform vehicle safety. Soon these advance systems may be replaced by systems that don't need a driver at all. Several companies are actively testing and developing self-driving cars. These vehicles are programmed to avoid risky and dangerous driving

behaviors. Self-driving vehicles also could provide a vital means of transportation for people with disabilities, the elderly in communities lacking access to traditional public transportation.

But technology is only as reliable as its human developers. In March of 2018, an Uber self-driving test vehicle struck and killed a pedestrian in Arizona. The National Transportation Safety Board found that the vehicle did not have the capability to classify an object as a pedestrian unless the object was near a crosswalk.

The NTSB has launched five other investigations into crashes involving vehicles with varying degrees of automation. They found that some self-driving cars cannot detect and avoid common roadway hazards, and vehicle occupants can over-rely on the technology.

So safety and deployment must come hand in hand. We can't have one without the other because, ultimately, public acceptance of self-driving cars depends on their reliability and safety. Troubling safety incidents, regulatory black holes, and lax oversight threaten to disrupt this critical balance in the future of this technology itself. For self-driving cars to succeed and make our roads safer, appropriate safeguards must be put in place, protections to ensure self-driving cars operate safely and adhere to State and local law.

Federal regulators must have a hands-on approach to self-driving technology. They must ensure that safety is ingrained in every sensor, feature, and line of code of a self-driving car. Regulators also must have the expertise to understand self-driving technology and not simply rely on the assurances of technology companies.

And Congress plays an important role here. We can bridge safety gaps by

creating a national roadmap for self-driving cars. We should pass legislation that establishes safety standards and regulations for the gradual deployment of self-driving cars. The legislation should facilitate the collection and reporting of vital crash and incident data, and protect Americans' rights to access the courts for the inevitable incidents relating to self-driving cars. It should also promote consumer awareness and provide robust resources to Federal regulators to oversee these complex technologies, while also preserving the appropriate role of State and local government.

So we are working on a bipartisan, bicameral basis to draft a self-driving car bill that will help ensure that these lifesaving technologies are safely deployed. And I thank the ranking member for her partnership on this on -- his partnership -- I'm sorry -- on this effort.

Wait a minute now. It is Cathy is the ranking member.

Mrs. Rodgers. Well --

The Chairman. Oh, we're talking about Greg. Okay. I thank the ranking member for his partnership.

Mr. Walden. We all are thankful and welcome you.

The Chairman. All right. We thank Greg and Cathy and look forward to continuing our work to advance legislation.

So I yield the remainder of my time to Representative Dingell.

[The prepared statement of Chairman Pallone follows:]

******** COMMITTEE INSERT ********

Mrs. Dingell. Thank you, Mr. Chairman. And I want to thank everybody on both sides for getting us here today. It really means a lot.

Automated vehicles aren't just something to read about in science fiction novels anymore; they are here, transforming mobility and transportation as we know it.

Just this month, there was a big announcement from GM, Honda, and Cruise that they are building an AV called Origin in Detroit. AVs are bringing jobs to this country, but we cannot take it for granted. This transformation is an open international competition, and other countries are stepping up. My colleague from Washington is right: Other countries are in the game and trying to beat us.

Automated vehicles will be developed globally, whether we like it or not, and it is critical that America be at the forefront of innovation by leading the development in this technology. If we don't, we are going to lose our competitive edge in this critical space, despite the uncertainty past legislative inaction has brought about. My home State of Michigan is leading the way. And, yes, I told Mr. Doyle he was wrong about Pittsburgh, but they are doing okay.

In my district, the American Center for Mobility is focusing on testing, verification, and self-certification of automated vehicles, and Michigan -- the State of Michigan is dedicating considerable resources to automated vehicles, but we do need to do it right. Safety, including cybersecurity, has to be our top priority here. Nobody, nobody wants to let unsafe technologies on the road, but we also don't want to prevent vehicles that improve safety and mobility -- do you know how much John Dingell would love to have let me get in a car again -- from reaching consumers easier.

This committee has done good work on this issue over the years. And I would like to point out the vote in the House was unanimous last year, unanimous. Republicans and Democrats worked together. But we must, in 2020, get this over the line. If you are a safety advocate, you should want a bill to give NHTSA the authority to ensure these vehicles are safe. If you are an innovator, you need certainty to know what the rules of the road are.

We have worked hard to find consensus over the last year, but now is the time for action. I beg my colleagues that we will do so, and I hope this hearing is the momentum for us getting it done.

I yield back.

Ms. Schakowsky. The gentleman yields back, right?

And now the chair will recognize Mr. Walden, the ranking member of the full committee, for his 5 minutes for an opening statement.

Mr. Walden. Well, good morning, Madam Chair. Thanks for holding this hearing today. I want to thank our witnesses for being here as well and sharing your thoughts on this really important legislative effort.

As you know, Madam Chair, this subcommittee did some amazing work over the last few years. We laid out a compelling framework for the United States to lead the world in research, development, and manufacturing of autonomous automobiles. We also gave people hope. We gave hope to people currently facing a life of restriction, introducing a whole new world of mobility for those with physical disabilities and for seniors.

On that note, I would like to recognize that not only on the witness panel is the

head of the National Federation of the Blind, Mark Riccobono, but I am also pleased to welcome from the great State of Oregon, the president of the State organization, Carla McQuillan. So, we appreciate you and all of the folks here in the audience.

From the first disrupter series hearing on self-driving cars in November of 2016, three other hearings would follow, along with more than 300 stakeholder meetings. This process led to the markups in July of 2017 where AV legislation was approved unanimously and continued to House passage in September of 2017 with the same consensus result.

Our Senate friends, who were committed to our shared goal, were not able to clear legislation in their Chamber, unfortunately. It was a disappointing conclusion when you consider 12 bills from members of both sides of the aisle in this committee were rolled into our final product. I have always believed that this is the way this place is supposed to work; a bipartisan, collaborative process.

Now, despite the work that was done then and the setback of coming up short, we are still here today talking about a need to pass an AV bill in the House. The U.S. is in a global race to AVs, but, today, the cost of inaction is clear: We are falling behind.

Now, I certainly respect the fact that my friends across the aisle have the gavel now, and it is ultimately up to them how to proceed in this process. Given that, we have a respected process that the majority called for last year on how we reach an agreement, not just among ourselves, but also in accord with the bipartisan leadership of the Senate Commerce Committee. And I am anxiously awaiting the consensus from that process, which I hope is imminent, so we can move expeditiously to the next step of this discussion.

On that note, I am pleased that we have a witness from the American Association for Justice on the panel, to provide your organization's perspective on how we might reach this elusive deal. Now, I want to be pretty transparent here, sir. It should be clear from the history of this process that Republicans and Democrats on this panel worked very hard with your organization to get sign-off and support when we first moved this bill, so you might imagine my disappointment when you all asked for more changes in the Senate, despite the deal we had here in the House with your organization. But it was even more curious that when Senate Republicans and Democrats ceded to the provisions you were seeking, you still didn't support the deal.

So this was a bridge too far, so you can understand why I am admittedly reticent to ask whether you all advocated for last Congress is enough, and, if it is not enough, why, and how are we going to deliver for the blind, the disabled, the elderly if we can't reach a compromise we can all trust in?

So, my plea to all of you is this: It takes not only a compromise among the members of this dais, but also all of you at this table. We are all Americans, and we share this goal together. We are talking about the United States leading the race and setting the rules or, frankly, having it dictated to us by other countries, other countries that are able to direct adoption and data collection, notably where citizens aren't lucky enough to have input from safety organizations, I might add. And we are talking about giving vulnerable populations an entire new ability to live their lives with a new level of mobility. We are talking about how this initiative will lend itself to reducing emissions, to protect our environment as well.

All this can be done, and we don't have to compromise safety, and we won't. In

fact, the roads actually will be safer.

We have the opportunity to prevent a family from experiencing the overwhelming despair from the loss of a loved one due to human errors on the road. We lose something like 7,000 pedestrians. We have the ability to break down the barriers to mobility facing seniors and the disabled community, and we can create new economic opportunities by ensuring the United States can be a global leader in this emerging technology.

So that is ~~what~~ my ~~I~~ ask to all of you. Work with us, and let's get this done this year.

Thank you, Madam Chair, and I yield back.

[The prepared statement of Mr. Walden follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. The gentleman yields back.

And the chair would like to remind members that, pursuant to committee rules, all members' written opening statements shall be made part of the record.

And I would now like to introduce our witnesses for today's hearing, and I thank all of you for coming.

Ms. Cathy Church, president -- Chase -- sorry -- Ms. Cathy Chase, president of the Advocates for Highway and Auto Safety; Mr. John Bozzella, president and CEO of the Alliance for Automotive Innovation; Mr. Gary Shapiro, president and CEO of the Consumer Technology Association; Mr. Daniel Hinkle, state affairs counsel for the American Association of Justice; Mr. Mark Riccobono -- got that right?

Okay. -- president of the National Federation of the Blind; Mr. Jeffrey Tumlin, director of transportation for the San Diego Municipal Transportation Agency.

Voice. San Francisco.

Ms. Schakowsky. Did I say San --

Voice. San Francisco.

Ms. Schakowsky. San Francisco. What I did I say?

Voice. San Diego.

Ms. Schakowsky. San Diego. Oh, sorry. Don't tell the Speaker that I said that, okay, please?

San Francisco Municipal Transportation Agency.

We want to thank all the witnesses for joining us today. We look forward to your testimony.

At this time, the chair will recognize each witness for 5 minutes to provide their opening statement. Before we begin, I would like to explain for those who haven't had the experience the lighting system.

In front of you are a series of lights. The light will initially be green at the start of your opening statement. The light will turn yellow when you have 1 minute remaining. I will, for Mr. Riccobono, I can tap the -- when you have 1 minute left, if you would like. Okay. Very good. So please begin to wrap up when you hear that sound or you see the yellow light. The light will turn red when your time expires.

So, Ms. Chase, you are now recognized for 5 minutes.

STATEMENTS OF CATHERINE CHASE, PRESIDENT, ADVOCATES FOR HIGHWAY AND AUTO SAFETY; JOHN BOZZELLA, PRESIDENT AND CEO, ALLIANCE FOR AUTOMOTIVE INNOVATION; GARY SHAPIRO, PRESIDENT AND CEO, CONSUMER TECHNOLOGY ASSOCIATION; DANIEL HINKLE, STATE AFFAIRS COUNSEL, AMERICAN ASSOCIATION FOR JUSTICE; MARK RICCOBONO, PRESIDENT, NATIONAL FEDERATION OF THE BLIND; AND JEFFREY P. TUMLIN, DIRECTOR OF TRANSPORTATION, SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY (SFMTA)

STATEMENT OF CATHERINE CHASE

Ms. Chase. Good morning, Chairwoman Schakowsky, Ranking Member McMorris Rodgers, and distinguished members of the subcommittee. I am Cathy Chase, president of Advocates for Highway and Auto Safety. Thank you for holding today's hearing.

For too many decades, tens of thousands of people have died, and millions more have been injured in motor vehicle crashes every year. The direct economic crash cost is nearly $250 billion. That amounts to an annual crash tax of $784 for every American.

However, we are now at a transformational time in transportation history. To be clear, advocates and many public health, safety, smart growth, first responder, and other organizations believe driverless cars or autonomous vehicles, known as AVs, hold tremendous potential to significantly mitigate preventable deaths and injuries on our roads in the future. Yet, as noted in my testimony, even industry leaders admit that the

technology is not yet mature and proven. Already, missteps in rushing deployment of self-driving technologies have resulted in crashes, deaths, and injuries. The technology isn't ready and neither are our roads. Yet, on the path to AVs, crashes can be avoided and lives saved with advanced driver assistance systems.

Since 2016, the National Transportation Safety Board has recommended expanding implementation of these technologies in its most-wanted list. These include automatic emergency braking, lane departure warning, blind spot detection, among other technologies. Advocates has been a longtime safety technology proponent, and this subcommittee has been a leader in advancing legislation that has resulted in numerous lifesaving technologies as standard equipment in new vehicles.

We urge you to pass the Protecting Roadside First Responders Act, H.R. 4871, which directs DOT to require these technologies in all new vehicles. Similarly, enactment of Congressman Dingell's bill, H.R. 4354, will result in the installation of technology to reduce drunk driving. Furthermore, we ask passage of the bipartisan Hot Cars Act of 2019. There is no reason that children should be dying in hot cars every week.

However, there is reason to act with great care and deliberation on our Nation's first AV law. Three years ago, there was a false and frantic urgency by some in the industry to push for adoption of an AV bill so the U.S. did not fall behind other countries, but the thing is, we are not falling behind other countries in AV deployment, but we are falling behind in implementing safe AV policies.

My written testimony, our analysis of previous bills, and proposals for new legislation provide a blueprint on how our Nation can successfully move forward, inspire

innovation, and earn consumer confidence. And public trust is sorely lacking by many measures.

Leading up to today's hearing, Advocates released the findings of a new opinion poll. It shows the American public has serious concerns about the safety of driverless cars. However, this apprehension can be addressed and resolved with appropriate action by the Federal Government.

I will briefly summarize the key findings. And, Madam Chairwoman, I request that the poll report be entered into the hearing record.

Ms. Schakowsky. Without objection --

Ms. Chase. Thank you.

Ms. Schakowsky. -- so ordered.

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[The information follows:]

******** COMMITTEE INSERT ********

Ms. Chase. As you'll see on the boards, 85 percent express concern about sharing the roads with driverless cars as a motorist, bicyclist, or pedestrian. And 63 percent are not comfortable with Congress substantially -- did we switch to the next one? Yes. Good.

And 63 percent are not comfortable with Congress substantially increasing the number of vehicles that auto and tech companies can sell that do not meet existing Federal safety standards. However, 71 percent support government officials developing minimum safety requirements for new driverless car technologies. And more than two-thirds of respondents said knowing companies had to meet minimum safety requirements before selling driverless cars would address their concerns.

Lastly, three out of four respondents support government-issued cybersecurity safety rules, as well as a vision test for driverless cars, to make sure they can operate safely in different weather and road conditions.

Some may dismiss public opinion polls and espouse the mantra: If you build it, they will come. But we need only look at recent disastrous outcomes of rushing to put new tech in planes and a Federal regulatory agency relinquishing important control and independent review. Tragically, 346 people died in two crashes in the Boeing 737 MAX. This mistake must not be replicated with autonomous vehicles. This tragedy also shows that it is easy to lose public confidence and hard to regain it.

Going forward, any legislation must ensure that the U.S. DOT conducts thorough oversight, establishes regulations that sets minimum performance standards, and requires industry accountability before driverless cars are available in the marketplace.

In conclusion, Advocates firmly believes that substantial reductions in our Nation's fatality toll can be achieved with technological advances. We look forward to working with you to advance validated and verified solutions to make our roads safer for all.

Thank you very much.

[The prepared statement of Ms. Chase follows:]

******** INSERT 1-1 ********

Ms. Schakowsky. Thank you.

And now, Mr. Bozzella, I recognize you for your opening statement for 5 minutes.

STATEMENT OF JOHN BOZZELLA

Mr. Bozzella. Thank you.

Good morning, Chair Schakowsky, Ranking Member McMorris Rodgers, and distinguished members of the subcommittee. On behalf of the members of the Alliance for Automotive Innovation, thank you for the opportunity to testify today regarding automated vehicle technologies and the tremendous promise that they offer to the traveling public, the economy, and the future of this country.

This January, the Alliance for Automotive Innovation was formed to become the singular authoritative and respected voice of the auto industry in the United States. Our 35 members include auto manufacturers who produce nearly 99 percent of cars and light trucks sold in the United States, along with original equipment manufacturers, suppliers, technology companies, and value chain partners, employing roughly 10 million Americans.

Our mission at Auto Innovators can be distilled in three words: Cleaner, safer, smarter. We work with policymakers to find intelligent solutions to improve the environment, reduce crashes, and enhance personal transportation. Today's hearing is important, timely, and fully consistent with the association's mission.

This committee has a proud history demonstrating leadership on these issues in a

fully bipartisan fashion. More than 2-1/2 years ago, the House overwhelmingly passed legislation, the SELF DRIVE Act, to enhance, advance these safety innovations. Then and now, Congress has a great opportunity to advance highway safety and expanded mobility.

AV technologies could not come at a better time. The numbers are sobering. In 2018 alone, 36,560 people, 100 a day, died in the 2 million traffic crashes on our Nation's roadways. NHTSA has found that 94 percent of car crashes are attributable to human choice or error.

By supplementing or even replacing the human driver with advance sensors and other technologies, we can dramatically decrease the frequency and severity of these crashes. AVs can't get distracted, drive impaired, or fall asleep at the wheel. AVs can provide numerous social and economic benefits, including less congestion, lower fuel consumption, and the increased mobility for older adults and people with disabilities.

As you work to draft AV legislation on a bipartisan and bicameral basis, it is important to recognize that successful testing and deployment of AVs rests on a robust Federal safety agency, increased public awareness and education, and coordination between Federal, State, and local governments.

I would like to offer three recommendations today as Congress works to realize these benefits. One, establish a regulatory framework that allows for the safe testing and deployment of automated vehicle technologies. The pace of AV innovation is occurring faster than DOT can update existing Federal Motor Vehicle Safety Standards. In the interim, exemptions which are granted on a case-by-case basis are a necessary bridge for the safe deployment of AV technologies and will generate the real world data needed for new safety standards for AVs.

Two, reinforce and clarify the roles of Federal, State, and local authorities for automated vehicle technologies. NHTSA should retain its traditional responsibility regarding design, construction, and performance, and States should maintain their traditional responsibilities regarding licensing, registration, insurance, traffic laws, and enforcement.

Three, any legislation that this committee or Congress ultimately passes is not the final word on the subject. Both the Congress and Federal safety authorities will further refine and adjust AV policy in the future. Only Congress can ensure an appropriate Federal framework to spur the development of lifesaving technologies, including the parameters for their safe testing and deployment.

It is not at all acceptable that more than 36,000 Americans lost their lives on our roads in 2018. From my perspective, as the president and CEO of the Alliance for Automotive Innovation, no other safety or mobility solutions hold as much promise or provide as many benefits to the traveling public as automated vehicle technologies.

It is also critical to note that there is a global race to develop and deploy these technologies. The U.S. currently has a leadership position, and here is where international companies have chosen to invest their resources, but America's leadership position is not guaranteed.

The Congress and, specifically, this committee has played a central role in improving motor vehicle safety and mobility. Legislation could provide the clarity and structure needed to allow the safe testing and deployment to go forward with appropriate protections. This hearing is part of that process.

I thank you. We are grateful to be a part of it.

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[The prepared statement of Mr. Bozzella follows:]

******** INSERT 1-2 ********

Ms. Schakowsky. Thank you.

Mr. Shapiro, you are recognized for 5 minutes.

STATEMENT OF GARY SHAPIRO

Mr. Shapiro. Thank you, Chairman Schakowsky, Ranking Member McMorris Rodgers, and the subcommittee. Thank you for this opportunity to testify.

Still thank you for that opportunity to testify.

The Consumer Technology Association is a national technology association, over 2,000 American companies, 80 percent of whom are small businesses, and we own and produce the world's largest and most influential business event, the biggest innovation event. Some of you have seen it. It is CES.

At CES last month, we saw amazing advancements in mobility, and we have seen self-driving demonstrated there repeatedly for the last few years. But the fact is that technology is already improving safety. Automatic braking, driver-alert systems. What we saw are results. Traffic deaths are down 3.4 percent in early 2019, despite a 0.8 percent increase in miles traveled, as well as marijuana legalization, distracted driving, other things likes that.

Advanced driver assistance systems can prevent nearly 30 percent of all crashes. Lane departure warnings lower certain crash rates by 11 percent, industry -- injury rates by 21 percent. And already today -- actually, in 2018, 93 percent of new vehicles sold have at least one of these features.

The solution going forward is what we are all agreeing upon here: self-driving vehicles. They don't get distracted, they don't get tired, they don't drink too much. They save lives, prevent injuries, and empower seniors and people with disabilities, and I think that is more important than protecting lucrative contingency fee settlements for trial lawyers.

Seniors no longer have to wait for family members to drive to doctors' appointments, and auto insurance premiums will be radically cut for all Americans. We will cut medical costs and productivity losses. We will waste less time in traffic and save billions of hours of productivity. There will be fewer parking garages. There will be more green space and development. There will be greater green use of our scarce societal resources.

And our research, contrary to what we heard, is slightly different. We see an American thirst for these. Sixty percent of adults are interested in replacing their cars with self-driving vehicles, and they see all sorts of benefits, over 80 or 90 percent in various categories of these vehicles, including avoiding aggressive drivers and empowering disabled people.

We are now testing SDVs with almost 1,500 vehicles in 80 companies across 36 states. Our members, Aptiv and Lyft, have a pilot project in Las Vegas since 2018, 100,000 rides. On almost -- on a 1 to 5 scale of satisfaction, 4.95 percent satisfaction on average, 92 percent of the riders felt very or extremely safe. Our member Nuro received the first ever in those exemptions just last week, and delivery vehicle testing starts soon in Houston.

As many of you mentioned, this is a global competition. It is an important issue

where every developed nation is focusing on, but we are ahead. We have more companies here focusing in the entire ecosystem, dozens of companies, and we have the opportunity to be in a position to set the global standard. But we can't wait for everything to be perfect the way some have asked for. Delay will cost thousands of lives. Every day we delay, literally we are killing people.

Cars that are 10 percent safer than human drivers will save more lives than waiting for them to be 75 to 90 percent safer.

As you have all described, last Congress, this committee and the Congress unanimously acted -- or the House acted, but there are challenges. We have to update the safety rules. That is why this legislation is important. We have to inform the consumers of the benefits, as has been described, and we have to adapt our insurance and liability laws.

We recommend that NHTSA update the outdated safety standards, that we clarify responsibility of who does what. There is a patchwork of laws States are passing every day that Congress does not act and making it more difficult. There is 37 States and D.C. now have rules.

Federal Government safety standards is job safety standards. That is the job of Congress here. State governments have clear responsibilities as well in terms of insurance liability, inspection, and traffic.

But we have to expand the SDV testing exemption. We need parity, not only among OEMs, but on so many others that are part of this process, suppliers and developers of automated vehicles and systems.

We have to expand NHTSA's exemption authority, which will help gather data to

improve safety and performance and perform the agency oversight. We are an industry here actually coming to Congress and saying, we want regulation for safety to move this important innovation forward to preserve our national competitiveness, and it should be a technology neutral approach.

We can't delay this testing. It will hinder America's global leadership, and it will cost lives. We have an international scorecard where we analyze developed countries on how innovation friendly they are. Friendliness to self-driving is one of the criteria we use, and there is countries like China, Japan, Germany, and Canada, which are moving forward very quickly, while the U.S. seems to be marching in place.

We appreciate the opportunity to testify. We need this legislation. We look forward to working with you to make our roads safer and our country stronger, and I look forward to your questions.

[The prepared statement of Mr. Shapiro follows:]

******** INSERT 1-3 ********

Ms. Schakowsky. Mr. Hinkle, you are recognized for 5 minutes.

STATEMENT OF DANIEL HINKLE

Mr. Hinkle. Thank you, Chairwoman Schakowsky, Ranking Member Rodgers, and members of the committee. Thank you for the opportunity to testify here today.

The American Association for Justice, or AAJ, is the world's largest trial bar, and we are established to strengthen the civil justice system, foster public accountability, and safeguard victims' rights and survivors' rights. AAJ members represent the families whose lives are tragically altered when corporations fail to make safe choices.

In 2010, Ken and Beth Melton lost their daughter Brooke when her car veered into another lane and crashed. It was her 29th birthday. The police report put Brooke at fault for that crash, but the Meltons thought differently. In a quest to understand what happened, they filed a lawsuit against General Motors.

That lawsuit uncovered a defect related to the ignition switch in Brooke's Chevy Cobalt that left it without power steering and brakes. That lawsuit revealed that GM may have known about the problem as early as 2001, and that the potential fix cost 90 cents. NHTSA considered issuing a recall on this affected vehicle in 2007, but ultimately did not.

The Meltons fought with GM for years and, ultimately, in 2014, GM initiated a recall of what has become over 2.6 million vehicles in the United States. Over a hundred deaths are linked to that same faulty ignition switch as Brooke Melton's. The

Meltons' story exemplifies why automated vehicle legislation must prioritize safety by preserving Americans' access to justice.

Now, in understanding this issue, it is important to step back and acknowledge what exactly distinguishes an automated vehicle from a human-driven one. It isn't technology, as the technology used in automated driving is being installed on vehicles today.

The difference between an automated vehicle and a human-driven vehicle is a promise. It is a promise from the manufacturer of that automated driving system that they will operate the vehicles safely on our roads. This promise is what gives cities and States and, ultimately, Federal regulators the confidence to allow these vehicles on our roads. And this promise is essential in convincing the public to trust that automated driving will be safe. The key question is whether our laws will hold these companies accountable for that promise.

As the committee is acutely aware, 36,560 people died in automobile crashes in 2018. AAJ's members see those deaths through the eyes of the parents and the spouses and the children who come to them for help. If automated driving is going to reduce this number, this committee must place the utmost priority on ensuring that automated driving is safe. And fundamental to safety is public accountability.

For over 50 years, lawsuits regarding design choices and failure to install safety technology has spurred vehicle safety from seatbelts, to airbags, to automated systems, like electronic stability control. It is often lawsuits that led the way in improving vehicle safety by showing how and when corporations put profits over safety.

When corporations are held publicly accountable for the decisions they make,

those decisions are made differently. In order to ensure public accountability, any legislation in this area must address three key issues.

First, those hurt by automated driving must be able to hold the driver manufacturer accountable. This means any legislation must preserve remedies under State law.

Second, the public must not be forced into arbitration. Forced arbitration is a secretive, one-sided rigged system which effectively immunizes the company from all public accountability. Forced arbitration gives a company the power to write the rules and, worse, forced arbitration is secret, keeping critical safety issues out of the public view.

Last, legislation must designate the driver manufacturers as responsible for following the rules of the road or we risk leaving it open for companies to use passengers and owners of the vehicle as a human crumple zone by making them responsible for the operation of the vehicle. The driver manufacturer must take public accountability for the harm they cause.

Thank you.

[The prepared statement of Mr. Hinkle follows:]

******** INSERT 1-4 ********

Ms. Schakowsky. Thank you.

And now, Mr. Riccobono, it is yours for 5 minutes.

STATEMENT OF MARK RICCOBONO

Mr. Riccobono. Thank you very much, Madam Chair and ranking member of the committee and to the subcommittee. I appreciate the tremendous leadership of all of you for taking these issues so seriously in providing leadership and having this hearing. It is an honor to represent the National Federation of the Blind to speak with you about the opportunities that autonomous vehicles will provide for blind people.

Now, I am elected by blind people, so I represent the view of blind people, not other people with disabilities. Although much of what we talk about applies to other people with disabilities, we do coordinate also with other disability organizations.

Blind people recognize that autonomous vehicles provide an unprecedented opportunity to bring an entire class of people into the realm of driving: Individuals who have not been part of the driving class ever before, and, for us, that means blind people. And that means opportunities and access that has never been available.

And we also support the notion of safety, because we recognize, in due respect to all of the drivers in the room, that 100 percent of accidents today are caused by sighted drivers.

You know, according to the American Community Survey of 2017, there is 7.5 million individuals who identify as having a visual disability, more than 1 million

individuals who are legally blind. And if you follow the statistics and trends, those numbers are going up because of the aging population. In fact, we hope that each and every one of you lives long enough to be a blind person.

You know, autonomous vehicles are a key to access to employment and independent living for blind people, because, today, access to easy and affordable transportation is just not something we have, especially if you live in rural areas, but in many urban areas as well. Blind people have to go through extraordinary efforts and fight through big barriers just to get basic access to get to the places they want to go in a timely fashion.

Often, accessibility is an afterthought, and the reason that we are particularly excited about autonomous vehicles and the leadership that Congress has shown so far is that we are thinking about, talking about accessibility from the beginning, and that is the right approach.

We know from our work in buildings today that we would not think about putting in an elevator after the fact. Why? Because it is more expensive, it causes headaches. Thinking about it ahead of time is what needs to happen.

Now, a decade ago, the National Federation of the Blind was imaginative enough to decide that we were going to build a car that a blind person can drive, not a car that would drive itself, but a car that a blind person can drive. And working with engineers at Virginia Tech, we leveraged early autonomous vehicle technology to build a vehicle equipped with nonvisual interfaces that would allow a blind person to drive it independently.

How do I know? Well, I was tasked with being the driver in the first public

demonstration at the Daytona International Speedway on January 30, 2011. You can watch it on YouTube, "Blind Driver Challenge." No accidents.

That technology was our springboard to introduce ourselves to the autonomous vehicle discussion. Although we would love to put blind drivers on the road, we recognize that autonomous vehicles present the real opportunity. And when we first started talking to people about autonomous vehicles, what we were told was, we will get to you. Just wait long enough.

We are not prepared to wait, and we appreciate that Congress has us included from the beginning. Autonomous vehicles can transform transportation for all of us, and we believe that accessibility will actually make it better for everyone.

Two things: One, we ask Congress not to include regulatory schemes that shut people out based on licensing that requires vision. Second, that any framework and all frameworks incorporate accessibility from the beginning. That is why blind people have come. That is why we are pleased to be here.

Thank you for including us. We look forward to answering questions and being part of the conversation going forward.

[The prepared statement of Mr. Riccobono follows:]

******** INSERT 1-5 ********

Ms. Schakowsky. Thank you very much. The gentleman yields back.

And, Mr. Tumlin, you are recognized for 5 minutes.

STATEMENT OF JEFFREY P. TUMLIN

Mr. Tumlin. Good morning, Chairwoman Schakowsky, Ranking Member Rodgers.

Ms. Schakowsky. Put your microphone on.

Mr. Tumlin. Thank you.

Good morning, Chairwoman Schakowsky, Ranking Member Rodgers. Thank you, Chairman Pallone and Ranking Member Walden, for this opportunity to share a city perspective on the promises and challenges of autonomous vehicles, or AVs.

My name is Jeffrey Tumlin, and I am the director of transportation for the San Francisco Municipal Transportation Agency. We are unique nationwide because we not only operate the seventh largest transit system in the country; we also have responsibility for designing a thousand miles of streets safely for all users, managing more than 400,000 parking spaces, and regulating taxies, scooters, and other micromobility.

San Francisco is home to several of the world's leading AV companies. These companies hope to provide robo-taxi service in fleets of AVs, and we see today close to 200 AVs testing on our streets. Companies come to San Francisco to challenge their technology on our complex roadways that have diverse terrain that reflects dense urban neighborhoods and more suburban areas, like many of your districts.

We interact with these leading companies regularly to make sure they understand our priorities as we steward the tremendous taxpayer investment in the streets and services we operate, and we share what we learn with States and other cities.

We face many challenges in San Francisco and chief among them is road safety. Every year, 500 people are hospitalized, and 30 people die in collisions on our streets. The people who are most vulnerable in crashes are older adults and people with disabilities.

Like many of my peers, I get a text message every time somebody is injured or killed in a crash, and that happens at least twice a day. I agree with the other speakers that I am hopeful that AVs can help us end this human suffering as soon as the technology has proven that it is ready.

As Chair Pallone pointed out, the National Transportation Safety Board report on the Uber fatality in Tempe, Arizona, recently found that the AV that killed Elaine Herzberg did not accurately classify her as a pedestrian and, thus, failed to predict her path and avoid her. Even though the vehicle perceived her in plenty of time to stop, these classification and prediction failures contributed to her death.

AVs in San Francisco face a much more chaotic environment than they do in Tempe. We cannot just hope that the industry can dramatically reduce road injuries. We need the industry to prove that AVs can perceive, classify, and predict the path of every person on a street full of pedestrians and cyclists before they are allowed to deploy at scale.

The AV driving behavior we witness on our streets every day appears to be very cautious, but we can't yet tell if that behavior reflects good driving or is simply that the

technology is having trouble with critical perception and processing tasks at a high enough speed to operate safely.

We think there are two essential elements for Federal AV legislation that put safety as the top priority. First, Congress should require companies to include event data recorders in all AVs that preserve all information from sensors before a collision. This information will help us understand what kinds of circumstances challenge the capabilities of AV technology.

Second, Congress should ensure that every safety incident involving an AV is documented in a national database that is available to researchers and the public. A national database will ensure that we have the tools to measure whether AVs actually are driving more safely than humans.

These two steps should help NHTSA move quickly to develop automated driving safety standards and build a foundation for assessing when the industry is ready to scale up production and put more AVs on our Nation's roadways.

There is also one thing that is important to exclude from AV legislation: any change to the existing Federal preemption language. Current law preempts State and local governments from enacting laws that conflict with an existing Federal Motor Vehicle Safety Standard. The industry wants to flip this rule on its head so State and local governments are preempted, even when the Federal Government has not enacted a safety standard.

Given that it may take NHTSA many years to develop automated driving safety standards, it would be irresponsible for Congress to interfere with the ability of State and local governments to protect the public from the risks we learn of through our existing

testing processes.

We are still in the early stages of learning how this technology can function to increase safety on city streets. At this stage, I think innovation in the private sector is best met by innovation in the public sector. We all learn more as States try different strategies to safely incorporate vehicles in the stream of traffic. This is not a time for stifling local innovation.

Thank you.

[The prepared statement of Mr. Tumlin follows:]

******** INSERT 1-6 ********

Ms. Schakowsky. The gentleman yields back.

And we have concluded witness opening statements, and at this time, we will move to member questions. Each member will have 5 minutes to ask questions of our witnesses. And I will begin by recognizing myself for 5 minutes.

There are now no existing safety standard regulations -- I am going to start over.

There are no existing safety standards regulating the sophisticated software and systems that will be controlling an autonomous vehicle. Although the Department of Transportation and NHTSA have been working on guidance and beginning the process on some rulemaking, their focus has been primarily on eliminating regulatory barriers.

So I wanted to ask Ms. Chase: Do you share my belief that NHTSA needs more encouragement from Congress to focus on safety during these early days of testing and deploying -- and deployment?

Ms. Chase. Madam Chairwoman, thank you for the question. Yes, we most certainly agree with you. In fact, you know better than anyone else that even when Congress directs the Department of Transportation to issue a rulemaking, such as the rearview camera rule, it takes about 10 years -- we started that battle 10 years, soup to nuts, and then we wound up even having to sue the administration to release the rule because it was caught up in the OMB.

So we most certainly need more authority for NHTSA, and that includes imminent hazard authority, which is lacking right now, so that when there are problems on the road, NHTSA can act with accuracy and deliberacy to get these vehicles off the road.

Additionally, NHTSA needs the ability to issue criminal hazard -- criminal penalties

when needed when executives have -- knowingly know that there are problems with the product that they are putting on the road.

Thirdly, NHTSA needs to remove -- Congress needs to direct NHTSA to remove the civil penalty cap that currently exists for penalties.

So NHTSA needs more -- to do more, but it needs Congress to tell it to do more, because it is not acting on its own. And there is tremendous frustration among the safety community that they continue to issue these voluntary guidelines. We are now at 4.0. If they started back at the time when they started doing the voluntary guidelines with rulemakings, we would be on the path to having, you know, minimum performance standards for some of these technologies, but that hasn't happened.

So the frustration that was expressed in this room should be, in part, directed toward the regulatory body that is issued -- that is charged with making our roads safer for everyone, and we encourage Congress to move forward with legislation that includes regulations so that these technologies are put on the roads safely.

Ms. Schakowsky. Thank you.

Mr. Hinkle, why does the deployment of autonomous vehicles pose different challenges to consumers' access to the courts than traditional vehicles?

Mr. Hinkle. Thank you, Chairwoman. Automated vehicles raise a number of unique issues regarding the way we consider the liability framework regarding how these crashes are going to be investigated and handled.

One of the most important, though, is that by the removal of the human driver from the equation and replacing it with a manufacturer's developed and automated driving system, you have a corporate entity that is now in tight relationships with things

like the ride handling companies or the others that are going to be utilizing their vehicles in order to deploy this technology.

RPTR WARREN

EDTR ZAMORA

[11:02 a.m.]

Mr. Hinkle. That raises significant changes to the way forced arbitration is currently employed across the country today. Right now, if I am in an Uber or a Lyft vehicle and I am going down the road and that Uber driver runs a red light and causes a collision, I can still have recourse against that individual driver, but Uber has repeatedly raised their forced arbitration clause to try to shut off the ability to even ask the question whether they bear some responsibility in this situation.

So we saw this most recently in Pennsylvania. Pennsylvania, Uber raised their forced arbitration clause to prevent an individual who is seriously injured from even asking the question whether they should be responsible for these situations.

It is not that we know for sure definitely that Uber should or should not in these situations. That is a contested open question. I think that there is a lot of different lawyers on both sides who have very strong arguments regarding that, but Uber didn't want to answer the question. They don't want to know what the law is. They just want it to go away. And so they have invoked their forced arbitration clause and try to make it go away, just like they invoke their forced arbitration clause against all of the drivers out in California to try to hold them accountable under a similar framework out there.

In California, they successfully invoked their forced arbitration clause. When those drivers lined up to say, all right, you want to do arbitration, let's go to arbitration, they didn't pay the arbitration fee. They don't want to go to arbitration. They don't

want to go to court. They don't want to know what the rules are. They don't want to know anything.

Forced arbitration is used as a get-out-of-jail-free card. It is a way that we don't know what the law is regarding automated driving and automated vehicles, and that is one of the most significant changes that I think is present in the automated vehicle space.

Ms. Schakowsky. Thank you.

Five minutes goes pretty fast. I yield back.

And now I recognize our ranking member on the subcommittee, Ms. Rodgers, for 5 minutes.

Mrs. Rodgers. Thank you, Madam Chair.

Before I begin my questions, I would first like to offer a letter for the record from Senator Thune and Senator Peters, who have been champions of autonomous vehicle legislation in the Senate and are committed to finding a bipartisan path forward.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mrs. Rodgers. I would also like to offer a letter for the record from the Coalition for Future Mobility, signed by 44 companies and organizations, encouraging us to move self-driving legislation forward.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mrs. Rodgers. Thank you.

My first question is for the panel. And as the chair just said, 5 minutes goes by quickly, so I am going to ask you to answer yes or no and do it as quickly as you can. Just yes or no would be great.

Do you agree that autonomous vehicles hold the promise to save lives and improve mobility for people with disabilities and our seniors?

And I will start with you, Ms. Chase.

Ms. Chase. Yes, with proper regulatory guidelines.

Mrs. Rodgers. Thank you.

Mr. Bozzella. Yes.

Mr. Shapiro. Yes.

Mr. Hinkle. Yes, they hold that promise.

Mr. Riccobono. Yes, absolutely.

Mr. Tumlin. Yes, the promise.

Mrs. Rodgers. Thank you.

Mr. Bozzella, if Congress fails to act, do we risk losing out on safety and mobility benefits you all just agreed will come with autonomous vehicles and risk seeing them go to another country?

Mr. Bozzella. Yes, I think that is exactly right. First and foremost, we risk the safety benefits, and that would be tragic, given the numbers we have been talking about at this subcommittee. I think also we do risk losing our lead with regard to innovation. And when we lose our lead with regard to innovation, we lose the ability to set the

running rules for these technologies going forward. We want to have leadership both in -- with regard to innovation and with regard to setting the rules that I think this panel all agree need to develop.

Mrs. Rodgers. Right. Thank you.

Mr. Shapiro, there is a clear global race to AVs. To win the future and unleash innovation here at home, do you agree that Congress must establish a Federal framework for the safe development and deployment of autonomous vehicles?

Mr. Shapiro. Absolutely I do, because we are competing with China and other countries. China, which has a very different view of civil liberties than we do, we are competing with them for artificial intelligence. And this is about artificial intelligence, in part, and robotics, and this is essentially a robot. And right now, they are producing a million engineers a year. They don't care about privacy, and they don't care about the rights that we care about as Americans, and they have a really good strategy. And we are fighting about things like protecting trial lawyers and other things, while they are getting ahead of us, and I don't think this is a healthy way to approach this issue. I think we should be focusing on safety, empowerment and, also competitiveness, and those are the things which could guide us as we go forward.

Mrs. Rodgers. Thank you.

Mr. Riccobono, thank you for being here. In your testimony, you made clear that for Americans to realize the benefits of this technology, Congress must be proactive and expeditious in paving the way for AVs. Can you please explain what this technology means to you and your community?

Mr. Riccobono. Well, in brief, this technology really holds the promise to give

blind people, again, access to a system of mobility that we just have not had before. And it is really important for Congress to act for some of the same reasons that have just been articulated. Our Nation, because of the work of people with disabilities, in cooperation with the leaders of our Nation, has set a tone that people with disabilities are to participate fully and have the right to be in the world. Other nations do not hold that same belief. And if we do not marry accessibility and inclusion with the technology and innovation framework, we will lose that competitive advantage that we have built into the United States democracy.

Mrs. Rodgers. Thank you very much.

And to the chair, I want you to know I am committed to finding a bipartisan path forward here. I believe it is so important that we lead. You know, I have been visiting high schools in eastern Washington this last year and talking to them about autonomous vehicles.

I have a son with special needs, and I think about his future and how this will just change it. You know, I have been -- Brian and I have thought, well, we need to find Cole a place near Gonzaga University so he will have young people, that he could have friends and able to get around. Autonomous vehicles will change his life.

My dad, 82 years old, took me to the airport the other day and says, Cathy, I probably shouldn't be driving. I was like, huh, okay, you know. But he lives independent right now. He is president of the Sinto Senior Center, and he lives -- he rents a house right next door, and he can walk to the senior center where his life, his friends, and his activities day in and day out are. But a driverless car would mean that he could live independent more.

I think about congestion, what it would mean to just the movement of people and goods, and I think about 37,000 individuals who lost their lives last year on our roads. This is a huge opportunity for us.

And I will yield back.

Ms. Schakowsky. Thank you.

Let me just say I agree with you when we talk about the promise but, you know, and we have to work together to get it right.

Mrs. Rodgers. Yes.

Ms. Schakowsky. And to make sure that safety is protected and the rights of consumers are protected.

And now let me recognize the chairman of the full committee, Mr. Pallone.

The Chairman. Thank you, Madam Chair.

States and localities play an important role in protecting consumers. Cities can establish speed limits, restrict trucks from entering residential areas, and prohibit oversized vehicles from going into tunnels and under bridges. Localities need to know that when a fire truck or ambulance is speeding to an accident, vehicles, including self-driving vehicles, will get out of the way. And if the self-driving vehicle violates traffic laws, police have to be able to pull them over.

So let me start with Mr. Tumlin. In your written testimony, you state that it would be irresponsible for Congress to interfere with the ability of State and local officials to protect the public from risks we learn of through the testing process. Could you explain what authority States and localities need to protect residents during the early stages of AV deployment? Quickly, of course, since we got a lot.

Mr. Tumlin. We need all of the authorities that we have now, and we are concerned that the preemption language in the proposed legislation takes away the authority and power that we have now to keep our streets safe.

The Chairman. Okay. Ms. Chase, under current law, State and local governments are only prohibited from setting safety standards if those laws or regulations conflict with Federal standards. Has this regulatory framework impeded automakers' ability to develop and deploy innovative technologies, and could we expect that to happen in the future?

Ms. Chase. I would say that it is not impeding anything, especially considering what has been shared today, and that in the absence of Federal regulation, it is, in fact, the duty of States and localities to protect their citizens in the void of Federal regulation.

The Chairman. Okay. And NHTSA requires manufacturers to report information regarding potential defects, and it collects data regarding accidents from a variety of sources, and this information is critical to identifying systematic problems with vehicles. In the context of AVs, NHTSA will need to collect performance and accident data to develop motor vehicle safety standards and ensure the safety of vehicles and pedestrians. Let me go back to the two of you.

Mr. Tumlin, what information would be useful for State and local governments, and how could this information be used to further safety goals?

Mr. Tumlin. We would like all of the sensor data that occurs both before and immediately following a collision, as well as disengagements, when the human driver is forced to take over when the AV system fails. Having all of that and storing it in a national database will allow us to analyze that information and help us and the industry

learn and improve.

The Chairman. Okay. And then, Ms. Chase, what information do you believe NHTSA needs to collect in order for the agency to promulgate safety standards?

Ms. Chase. I agree with what Mr. Tumlin said. Additionally, I think that there should be a national consumer database so that people can look up, like they can now on the NHTSA website, and see how cars are performing. I think this should be attributable to autonomous vehicles as well, so you can see what the capabilities and limitations, especially if there are exemptions, how the car performs, so that consumers can be educated, especially when autonomous vehicles down the road become secondhand vehicles. I don't think people are thinking about that enough. And there won't be, you know, paper manuals, and then there will be over-the-air updates. So I think it is essential for consumers to be able to access this information online.

The Chairman. All right. Thank you.

I thank the panel.

Thank you, Madam Chair. I yield back.

Ms. Schakowsky. The gentleman yields back.

And now I recognize the vice chair of -- the ranking member of the full committee, Mr. Walden, for 5 minutes.

Mr. Walden. Thank you, Madam Chair.

And, Chair Schakowsky, before I begin my questions, I would like to first offer for the record a letter from Argo AI, supporting a federal framework for self-driving vehicles.

Ms. Schakowsky. Without objection --

Mr. Walden. Thank you, Madam Chair.

Ms. Schakowsky. -- so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Walden. Mr. Bozzella, The American Association for Justice claims in their testimony today that your members almost never voluntary embrace safety technology, which seems to suggest your efforts to advance this lifesaving technology is not at all about safety. So, I assume your family members, your friends, your employees all drive cars and you want them to be safe too. How would you respond to this claim?

Mr. Bozzella. There is no question that safety is first and foremost in everything we do in this space, and I am very proud of the safety record of this industry. It starts with the research, development, data, and insight that are provided to NHTSA that are the foundation for Federal Motor Vehicle Safety Standards that are established. It goes to voluntary commitments to improve safety that go back to the 1940s with headlamp innovations that were groundbreaking in their time. Think about front-crash compatibility. That is a voluntary agreement. Think about out-of-position side airbag testing. That was a voluntary commitment. Think about the work that we have done with regard to rear seat reminders for heatstroke victims. That is a voluntary commitment. And think about automatic emergency braking, a groundbreaking voluntary commitment.

Why is that important? Because that technology is a building block technology for the technologies you will see in automated vehicles. In 2016, 20 companies made a commitment to have that equipment standard in vehicles by 2022. Four companies have already achieved that. We are ahead of the game.

Mr. Walden. I just want to ask you something else. As I listen to all this -- and I dealt with this as chairman of the committee when we passed the bill -- we're going to

have autonomous vehicles. Right? Somebody is going to develop them. The question is whether we develop them here or not. Right? And so, I mean, that is the way I look at this.

And so, Mr. Shapiro, I want to go to you. The Advocates for Highway and Auto Safety suggest in their testimony today that those of us who want the U.S. to win the global race to AVs, to ensure Americans enjoy the vast safety and mobility benefits are fear-inducing and misleading, but this race is real and we are falling behind. In Ms. Chase's testimony, she claims Japan has not begun to address the highest levels of automation but that, I don't think, is quite the case. Toyota's LQ, a Level 4 vehicle that was developed in partnership with the Toyota Research Institute here in the U.S., will be made available for public rides in the fall, not here in the U.S. but Japan.

So, Mr. Shapiro, anyone that knows anything about the innovation business knows that certainty is paramount, right? And if we fail to enact Federal framework that provides a viable path to commercialization, do we risk investments in this technology going abroad?

Mr. Shapiro. Yes, we do take that risk, and those that provide the certainty in the environment will get the investment. So it is incumbent upon the U.S. to be a leader, because we have the fundamental technologies here. We have the auto infrastructure. We have Tier 1, Tier 2, Tier 3. Plus, we have all the great Silicon Valley startups and others, and they are modeling around the country. We are doing a lot of the right things. We do need Congress to pass this legislation.

But I think we also have to keep in mind -- and there are some great proposals here, and in a perfect world, we would go for many of them. But we can't -- we are not

going to be perfect. We can't make the perfect the enemy of the amazing and the great, and we are on the verge of getting the amazing and the great. And if we put all these proposals that have put it there and we require them to be put in every car, the car is going to cost six figures at a minimum. We just can't get there.

The way technology diffuses is, at the very beginning, it is really expensive, and when you get economies to scale, you can get it cheaper and cheaper. And that is one of the reason we would like to see that 2,500 exemption expanded so companies can actually start making it so it is cheaper for everyone to have access.

Mr. Walden. And, Chair Schakowsky, I would like to offer for the record Toyota's press release about the LQ, which I think would be helpful. I think you have that as well.

Ms. Schakowsky. Thank you.

The gentleman yields back.

Mr. Walden. I was just offering something.

Ms. Schakowsky. Oh, I am sorry. What did you ask for?

Mr. Walden. I was having it entered in the record. It was a unanimous consent.

Ms. Schakowsky. Without objection, so ordered. Sorry.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Walden. No, it is fine.

Mr. Riccobono, I am excited about the vast mobility benefits self-driving cars promise to deliver to the American people. Can you explain how transformational you believe this technology will be for your community?

Mr. Riccobono. Yeah, thank you for the question. You know, again, blind people and people with disabilities have to go through extraordinary efforts to get to the basic places they want to go, whether it is employment, whether it is medical appointment, whether it is an emergency run often to the drug store when your child is sick.

Having access to easy, affordable, reliable transportation will transform the opportunities that people with disabilities have to participate fully in society, and eliminate a lot of the artificial barriers, the costs of being a person with a disability in America today, the unfair costs.

And so this technology and the promise in building accessibility in from the beginning does really have the power to empower the lives of people with disabilities and help us get to our dreams.

Mr. Walden. Thank you.

Thank you, Madam Chair. And I yield back.

Ms. Schakowsky. The gentleman does yield back.

And now I recognize Congresswoman Castor for 5 minutes.

Ms. Castor. Thank you, Madam Chair.

I want to continue our discussion about safety standards, because safety

standards save lives. But current safety standards were adopted with the underlying assumption that a human, not a computer, is operating the vehicle. As a result, innovative autonomous vehicles, including vehicles without a steering wheel or without pedals, for example, cannot comply with several safety standards.

Under current law, the national highway safety -- National Highway Traffic Safety Administration may permit a manufacturer to deploy 2,500 noncompliant vehicles per year by granting an exemption. The AV industry is advocating to eliminate or increase the cap on the number of AVs permitted to be commercially deployed under exemption.

Ms. Chase, do you support these proposals?

Ms. Chase. I do not support that. In fact, I don't understand why companies aren't availing themselves of the current exemption process. In fact, just yesterday, Nuro was granted an exemption. Now, I don't agree with all of the underlying reasons for the granting of the process, but the process exists. And if companies are confident with their product, why aren't they applying? I know that GM has applied. So far, there has been no action taken on it, but let's work within the process that exists right now. And then if that is not working, I think we can move ahead. It seems to me that the end-around of the exemption process is motivated by corporate profit.

Ms. Castor. So to grant an exemption, the Secretary must determine that the AV provides a level of safety comparable to traditional vehicles, but traditional vehicles are operated by humans and not computers. Let's talk about the criteria, then, for those exemptions.

Ms. Chase, should NHTSA evaluate the automatic -- automated driving system, the sophisticated software, and the systems that control the autonomous vehicles when

making a determination on whether to grant or deny the exemption?

Ms. Chase. Thank you for the question. NHTSA most certainly should be evaluating. In fact, I included, as part of my written testimony, some pictures of the crashes that have occurred so far with Level 2 vehicles, mostly Tesla -- and I am not beating up on Tesla, this is just factual -- of the crashes that have happened. And absent -- you know, they range from in California to Connecticut. All over the country this is happening right now, playing out without regulations.

So I think that it is incumbent upon NHTSA to do its duty. It is a regulatory body. In fact, that is its mission and its charge, to issue regulations immediately.

Ms. Castor. So, Mr. Bozzella, that is fairly fundamental. Certainly, you would agree with that, that basic kind of criteria.

Mr. Bozzella. There is no question about it. Really, the bill that you have passed does the things we need to do. What it does is it creates a regulatory process. And if you think about what NHTSA needs in order to rewrite the motor vehicle safety standards that you rightly point out are based on hands and feet and eyes, what they need is data. And the way they get that data is by safely engaging a regulatory process.

Frankly, exemption is a misnomer. It is an application that is approved by NHTSA on a case-by-case basis, looking at data and making a determination about safety. What that does is it provides NHTSA with the data they need to revise those rules going forward. It is critically important, and I think the action that you have taken in expanding that program, more exemptions provide more data. More data provides the ability for the rulemaker to make good rules.

Ms. Castor. I am quite excited about the potential for innovation with AVs, but I

am more excited about the innovation for electric vehicles. According to reports, many AVs will be fully or partially electric. Many engineers say that the autonomous technology fits better, innovates better with electric motors. We definitely want America and American workers to have the competitive edge as these develop.

How many of your member companies, Mr. Bozzella, plan to have electric autonomous vehicles, and will AVs help us transition to a fully electric fleet?

Mr. Bozzella. I do think what you are seeing is the trend you have described. You are seeing many of these automated vehicle platforms also evolving on electric vehicle platforms, and I think you have also rightly pointed out why that is. Many of these vehicles will be fleet vehicles. Fleet vehicles and EVs are a nice match. While EVs might be a little bit more expensive with regard to initial purchase price, they are less expensive to operate on an ongoing basis and over the lifetime of the vehicle. So there is a nice synergy between those two technologies, and I think that that is an important aspect of how AVs can support environmental progress.

Ms. Castor. Thank you, Madam Chair. I yield back.

Ms. Schakowsky. Thank you.

I now recognize Mr. Upton for 5 minutes.

Mr. Upton. Thank you, Madam Chair. I too have a letter I am going to ask unanimous consent to insert in the record from Ford, if I might.

And thank you all for your testimony today.

I guess I want to start off by saying, Mr. Bozzella, you talked about, in your testimony, you risk -- we risk this country losing the lead.

Mr. Shapiro, you said that we are behind China, Japan, Canada, and a number of

other countries.

You know, we passed a bill. Every member of this committee in the last Congress voted for the bill. We passed it on the House floor. Even some people who always vote no on whatever you might name voted for the bill, and it got stalled in the Senate.

What are these other countries doing -- China, Japan, Canada -- that we aren't doing here? Why are they ahead of us? Is it only because we have not passed legislation? What are some of the steps that they have done that we have failed to address?

And I just might add, in some of the testimony that we have had, I do believe, going back to the question that Ms. Castor had about having enough data, I think it is important that we have a national database. So we want accountability. We want to measure exactly what we are doing. I think maybe if we can enhance that, use that as an improvement, a constructive improvement on where we were before, that that would be a good thing.

But what is it that we need to do to catch up and pass these other countries, otherwise, knowing that we lose not only the jobs, but we also lose the safety that folks would otherwise have?

Mr. Bozzella.

Mr. Bozzella. Thank you for the question, Mr. Upton. So, first, set the Federal framework. Let's get that right.

Mr. Upton. So is Canada and China, have they done that?

Mr. Bozzella. I think -- by the way, I do think we do have a lead right now. I am

not quite sure I would suggest we have relinquished that lead yet. My concern is we are likely to stall if congressional action doesn't go forward, and the reason for that is two things need to happen.

We need to have a robust regulatory process that transitions us to new rules, and without an expanded exemption process, we don't get there. The second thing we need to do is we do need to make sure that we get the right operating lanes between what is the sole purview of the Federal Government and is what is rightly the space of the State and local governments. And I think State and local governments do have a role in reducing barriers to AV deployment and they do have a role in encouraging public awareness and public acceptance. And so what this bill does rightly is make progress in both of those critical areas.

Mr. Upton. Mr. Shapiro.

Mr. Shapiro. Yeah, I want to clarify. When I was talking about us falling behind, I was talking the bigger context of artificial intelligence, 5G, robotics, and all this is tied into self-driving.

So when you look at what some of these other countries, especially China, are doing, they do have a national strategy. It is a national goal. I think what we lack is a national goal. I would encourage any administration, Democrat or Republican, to stand up and say we have a goal of having X percent of fewer deaths by X year, and that is where we could all work towards the same goal.

Right now, we're not working towards the same goal. We have different goals, different purposes, and an unclear set of -- sense of urgency, and we need to have that sense of urgency to meet these goals. And the fact is that there is so many things that

fall off from that in terms of economy. It is, of course, about saving lives and reducing injuries and empowering people, but it is also about our economy and our way of life, frankly.

So all these things are tied together very dramatically. And what China is doing is actually they have made self-driving vehicles a national priority. They are establishing technology standards. They have industry guidelines for self-driving vehicles. They are tying some of this into the Olympics. They have mass production of self-driving buses with Baidu. They are starting production of self-driving passenger cars this year, and Beijing has a very large demonstration area for self-driving vehicles. And this is what the Chinese Government is focused on. They have made the goal. I mean, they are doing what we should be doing.

But I think we could do it better because we have the technology. And if we could keep it and can keep it here and lay out the framework and the guidelines as laid out in this legislation, we will be on the long way to getting there.

Mr. Upton. Yeah. I just might add -- thank you.

Before I ask my next question, if I have enough time, I just might mention that at one point, I chaired the Oversight Subcommittee. And under Chairman Billy Tauzin, one of the things that we did way back when was we passed the TREAD Act. And we had it -- and, Mr. Bozzella, you had a different hat on then. You weren't with Ford or Firestone, but we actually rolled a tire down this dais, and we passed major bipartisan legislation, and we included criminal sanctions on individuals in the automotive industry when they knew of a defect that was actually going to lead to a tragic end.

As I recall, some 80 folks died because of that Firestone tire; but we identified it,

we corrected it. It was very hard to get the criminal sanctions through the Senate, but we got it done and the President signed it into law.

So, in my view, we can look back at that. And when there is an issue, Mr. Hinkle, we can look at that legislation and find out who is responsible. But at the same time, today, we can't accept 50,000 people dying every year because of inaction on our part, when it can be tens of thousands of people less. If not now, when? If not us, who?

I yield back.

Ms. Schakowsky. The gentleman yields back.

And now I recognize Congresswoman Kelly for 5 minutes.

Ms. Kelly. Thank you, Chairwoman Schakowsky and Ranking Member McMorris Rodgers, for holding this hearing. I am hopeful that this committee will continue its leadership on autonomous vehicles and pass a comprehensive bill this Congress.

The current NHTSA exemption for self-driving vehicles is 5,000 vehicles over 2 years. I have heard manufacturers say that they need to test self-driving vehicles in several markets with different weather, topography, and operating conditions to really get good data. The current draft text works its way up to 100,000 cars over a few years after passage.

Ms. Chase, if there were any issues with these vehicles, NHTSA still has the authority to recall them. Is that correct?

Ms. Chase. That is correct, but they also can test unlimitedly right now. There is a big difference between testing and selling and deploying. They can test in these conditions right now.

Ms. Kelly. Okay. Ms. Chase and Mr. Bozzella, does this incremental approach

to 100,000 vehicles able to provide security to drivers and give manufacturers certainty for investment in this technology?

Ms. Chase. No, it does not.

Mr. Bozzella. I believe it does, absolutely. It is integral to the rulemaking process. This is the preeminent safety regulator regulating.

Ms. Kelly. Well, do the numbers in the staff draft, 25,000 after 1 year of enactment, 50,000 the next, and 100,000 the following year, seem appropriate to you both?

Ms. Chase. I think it is really important to think about, it is just not that number in toto; it is that number for each manufacturer. We are talking about a lot of vehicles right now that are going to be exempt from Federal Motor Vehicle Safety Standards. I don't want to be on the roads with cars that are exempt from these safety standards. In fact, we offer that there should be many more safety standards. And I am not talking about an owner's regulation. We are talking about minimum performance standards. If a company cannot comply with a minimum performance standard, then the vehicle should not be on the roads.

Mr. Bozzella. The exemption process is the path, the bridge, to modernized motor vehicle safety standards. That is what we are talking about here. The need to expand the exemptions, yes, speaks to some degree to dealing with or providing vehicles in different conditions, but really, more importantly, it is to provide NHTSA with important data. And, by the way, this process has been used before. There are current applications with regard to AVs, but it has also been used to introduce other groundbreaking technology into the marketplace, for example, hybrid electric vehicles.

And So this is a well-trod path that the responsible regulator is making sure that we are assuring safety as we introduce these technologies into the marketplace.

Ms. Kelly. Okay. These new vehicles are relying on a lot of technology that uses cameras and sensors to detect cars traveling at high speeds and pedestrians crossing the street. Anything that compromises these systems is a grave threat. As chair of the Tech Accountability Caucus, I believe cybersecurity must be central to any bill that we advance to ensure consumer safety.

Mr. Shapiro, there have been dramatic demonstrations of hackers being able to take over a vehicle from hacking the entertainment system. From a technical perspective, how important is segmentation between critical safety systems and other car systems?

Mr. Shapiro. That is a great question. Thank you. Obviously, cyber threats are continuing. They are always changing. So putting something in a fix and saying this is the way it must be, is a very dangerous thing. And I think what the industry is doing is trying to step up in a number of ways. Automakers created the Automotive Information Sharing and Analysis Center to focus on best practices. Our organization, through CSDE, is leading the effort on IoT baseline security with NIST. This is the Center to Secure the Digital Economy. It is a coalition with the USTelecom and 13 other major technology companies and 20 trade associations. It is folks in Internet of Things, cybersecurity, because this is part -- a self-driving car is part of the Internet of Things.

So it is incumbent upon us as industry to step forward and keep addressing these things. But I am not going to kid you here; this is going to be a constantly changing situation. As these thieves or these disrupters get smarter, we build smarter

mousetraps, but we have to stay current. So our goal is to focus on the action, rather than specify certain -- obviously, focus on best practices, but always keep changing and growing them.

Ms. Kelly. Ms. Chase, in your testimony, you talk about safety upgrades and over-the-air updates. How do you believe that vehicle lifecycle should be addressed, and how should Congress address not only product upgrades, but also security vulnerability patching?

Ms. Chase. I would offer that Congress should direct NHTSA to issue minimum performance standards on these subject matters. There will be over-the-air updates, we know that, and they are vulnerable to cyber attacks and even on a less sophisticated, you know, manner. So NHTSA needs to do its job and regulate in this area.

Ms. Kelly. Mr. Bozzella, any thoughts on cybersecurity?

Mr. Bozzella. It is critically important. I appreciate your question and your leadership on this.

I think Gary touched on a couple of things. We do have, right now, a process to share information about vulnerabilities and threats. That is critically important. That is job one. Job two, establish best practices. Make sure cybersecurity is designed in to vehicle systems.

I would also note that ISO and SAE are working on an industry standard on cybersecurity focused on practices and process, which is an approach that is, I think, more effective than identifying a specific vulnerability and regulating around that. We need to keep the process moving and lead moving up as opposed to driving down to the lowest common denominator.

Ms. Kelly. Thank you. I am out of time.

Ms. Schakowsky. Now I want to recognize someone who has a long history of supporting autonomous vehicles, my friend, Mr. Latta.

Mr. Latta. Well, thank you, Madam Chair, and thank you very much for holding today's hearing. It is very, very important.

Mr. Shapiro, if I might start with you, Nuro recently received an exemption from NHTSA. The word "exemption" seems to be misleading because it implies something has been waived. In fact, the opposite is true when it comes to safety, because developers must prove their vehicle meets or exceeds the safety of a nonexempt vehicle. And in the last Congress, during these hearings, I always said safety first, safety last, safety always.

Would you explain what barriers currently exist to gaining an exemption and how Congress must act to address them?

Mr. Shapiro. Well, the exemption process obviously has limits. One of the limits is, is that we would like to see it expanded so that everyone can apply for exemptions, just not Tier 1 auto companies. There is a lot of new players in this space, and we think they should be welcome. I mean, the challenge we face with any innovation, it has been my history, is that you have existing companies create regulatory -- they use government to create barriers, just the way trial lawyers are trying to create a barrier to this change by making it sound like they are trying to protect consumers.

So in terms of the exemption process, the limitation on the number is a barrier. It is obviously the 10-year process of changing a rule at NHTSA is way too long when we

don't need some of the things, obviously, because they are built around someone physically driving a car. So we need exemptions to move forward, but exemptions can't be a roadblock.

I think the other thing about exemptions to consider is -- and some of the discussion here -- is if you are going for zero deaths, you will never get there at least in our lifetime, because that is not reality. The reality is we are going to experience incidents with self-driving cars even in the future. Not everything can possibly be anticipated. And the only way to view that healthily is to view that against the number of deaths -- of lives we are actually saving.

And when we reach a hundred lives saved for every death or more than that, it just makes common sense to say let's save a hundred lives, even though we know there is risks here, just the way we all drive cars, even though there is over 30,000 deaths a year. So the exemption process is important. It is important for commercialization, it is important for certainty, but the bar has to be one which is balancing all the different interests involved.

Mr. Latta. Well, thank you very much.

And, Madam Chair, I would also ask unanimous consent to submit a letter of support for legislative efforts on self-drive legislation from Nuro.

Ms. Schakowsky. Without objection --

Mr. Latta. Thank you, Madam Chair.

Ms. Schakowsky. -- so ordered.

[The information follows:]

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

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Mr. Latta. Thank you.

Mr. Riccobono, if I could ask you a question, I personally understand the benefits self-drive is going to have for those who are visually impaired. My mom was told, when she was young, that she would be blind by the time she was 25. Fortunately, she never became totally blind, but she had a severe vision problem her entire life and she gave up even driving when I was 16. And so she became dependent for the next 45 years of her life on my dad, my sister, and me to make sure she could get places.

For manufacturers to develop a car that is fully accessible, they would have to be granted exemptions by NHTSA. Would you please tell us why it is important for manufacturers to have flexibility to be able to build an AV that is operational for blind Americans?

Mr. Riccobono. Yeah, I appreciate the question. You know, accessibility and innovation go hand in hand, and I think one of our priorities and concerns in this process is that the exemption process allow companies to innovate accessibility solutions, especially working with people with disabilities.

We know from our experience in so many other areas that including accessibility from the very beginning actually helps products be better for everyone. And when companies are allowed to innovate and compete around accessibility beyond what we can imagine from a standard today, we actually get better products for everyone, and that include people with disabilities and don't exclude people unnecessarily. So we think that it is important because it promotes innovation and it shows that we as a Nation value the participation of everybody.

Mr. Latta. Well, thank you.

Mr. Shapiro, I have about 30 seconds left. As the Republican leader on the Comm and Tech Subcommittee, one of our focuses has been on making sure we can secure our supply chain by removing vulnerable equipment from networks, commonly referred to as rip and replace. I am concerned we could face a similar situation in the United States in the lead on development of AVs. Chinese technology could dominate the world marketplace, and we would wonder why this would happen. In China, companies are always operating AV cars on the roads and collecting American's data. How can we and should we ensure the security of self-driving cars on our roadways?

Mr. Shapiro. I think because of the tire situation and the coronavirus, that companies themselves are naturally looking at alternative sources of supply chains. The Huawei situation, which I think you are referring to, has definitely been an eye opener for a lot of people. As a national strategy, that is a bigger discussion in terms of what we do to ensure that we protect our most vulnerable sources of supply, especially with those with military application, which clearly these do. So we have to approach that more strategically and figure out what it is we really need and what we should be doing here or with our allies.

Mr. Latta. I thank you.

I yield back.

Ms. Schakowsky. I now recognize Mr. Veasey for 5 minutes.

Mr. Veasey. Thank you, Madam Chair.

Well, I think it has been well covered now that tens of thousands of people a year are, you know, sadly, killed in automobile accidents, and all of us want to do what we can

to try to make that. I am sure everybody in this room has been affected by someone losing their life or being seriously injured in an automobile accident. However, NHTSA, it is hard to imagine that they can be an effective regulator of this innovation and of autonomous vehicles without appropriate resources and expertise.

And so I wanted to ask Mr. Bozzella a question today. How do you think these resource constraints inhibit NHTSA from facilitating the safe deployment of autonomous vehicles?

Mr. Bozzella. Yes, thank you for the question. I want to -- before we get right to the resources, I think we have to talk about authorities first. NHTSA does have significant authorities to investigate, to recall when necessary, to conduct investigations with vehicles that are on the road today, whether they are on the road through the FMVSS process or through the exemption process.

I also want to point out that the tort system that has been described to you by Mr. Hinkle is in strong effect in this case and nothing in the bill that you have passed would affect that. And so we do have a strong foundation.

With regard to resources, frankly, I respectfully would suggest that I would ask Congress that question. Do you believe that the agency is properly resourced? We are the regulated industry. We work with NHTSA all the time. It is important that they are able to do their job and, you know, it really, frankly, it is a question for you as to whether you think the resources are appropriately deployed.

Mr. Veasey. Yeah. Ms. Chase, you have any opinions on that?

Ms. Chase. Yes. NHTSA gets 1 percent of the U.S. Department of Transportation budget, but 99 -- approximately, 99 percent of fatalities are happening on

our roads. So I think there is a gross miscalculation there on the resources that are being dedicated to NHTSA.

And, in fact, yesterday, the President submitted his proposal -- budget proposal, which reduces NHTSA's O&R budget by $55 million, which is a quarter percent of the budget. So that is going in the absolute wrong direction. We should be empowering and giving more resources to this agency. As cars get more complicated on our highways, they need more sophistication. They need the ability to address these more sophisticated vehicles.

Mr. Veasey. Yeah. And just speaking of that, obviously, I think that is pretty obvious that, you know, since Mr. Ford started rolling vehicles out off his assembly line near Debbie's district, that a lot has changed with these vehicles. These are not the same vehicles as the ones that were built back in the day. They are highly -- they are much smarter. They are highly computerized. I mean, even now, if you try to do a lane change without turning on your turn signal, it will make the car feel very uneven. I mean, it is absolutely incredible the innovation that is going into cars.

Ms. Chase, do you think that NHTSA has the personnel on staff that can effectively make sure these vehicles are operating safely?

Ms. Chase. I think that NHTSA needs additional personnel to address these sophisticated systems. As evidenced by what is happening on our roads, before I mentioned that, you know, crashes are happening with these Level 2 vehicles right now. Well, there are not regulations and there are no minimum performance standards for these sophisticated technologies, like automatic emergency braking, lane departure warning, which you just mentioned. If there are minimum performance standards, then

consumers would know how they are going to perform.

Mr. Veasey. In addition to having the proper personnel, do they have enough personnel? Do you think that they actually need more numbers as well as more talented people or -- I don't want to say more talented people -- but the right sort of talent to be able to regulate this and make sure that they are operating safely?

Ms. Chase. They need more resources and they need more expertise.

Mr. Veasey. Yeah. Thank you very much.

Madam Chair, I yield back.

Ms. Schakowsky. I now recognize Mr. Bucshon for 5 minutes of questioning.

Mr. Bucshon. Thank you, Madam Chairwoman.

I am proud of our bipartisan commitment to promote the safe and innovative development of autonomous vehicles. As discussed in Congressman Rush's and my op-ed recently in The Hill, we must ensure that the United States is leading on the autonomous vehicles and not be left in the dust. I would like unanimous consent to introduce a copy of that op-ed into the record.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Bucshon. The United States has dropped to fourth on the KPMG Autonomous Vehicles Readiness Index, and China has set a target for 10 percent of all new vehicles to be fully autonomous by 2030. The time is now. We must enact commonsense, bipartisan, bicameral legislation to provide much needed Federal safety -- a much-needed Federal safety framework for autonomous vehicles.

I do want to thank Mr. Rush for his leadership and for helping the American people understand the important role autonomous vehicles can have towards eliminating human error, spurring economic growth, and promoting greater independence to those who currently are unable to drive.

And with that, I would like to yield my time to Mr. Rush at this point.

Mr. Rush. I want to thank my friend, Mr. Bucshon, for yielding. And thank you, Madam Chairwoman and Ranking Member McMorris Rodgers, for holding this hearing.

AVs present an important and significant opportunity for many segments of our society and they hold a promise to make life easier and more accessible for the elderly, the disabled, and those who are unable to drive. They offer an opportunity for those who may be in what I call transit deserts which lack reliable and accessible transportation options, and they offer the immediate promise of new jobs across our Nation.

Most importantly, though, they offer a paradigm shift in road safety. It has been stated earlier by many on this -- in this hearing that NHTSA has found that human error is involved in 94 to 96 percent of all accidents. AV has presented an opportunity to mitigate this risk and increase the safety of all road users. In fact, NHTSA has gone so far as to say that, and I quote, the safety benefits of automatic vehicles are paramount, end

of quote.

In terms of jobs, estimates suggest that AVs have the potential to create over a hundred thousand jobs, and those jobs will stimulate our economy at every level. And, as has been stated by Mr. Bucshon and many others, investing in the AV industry will show our global competitors that our Nation does not intend to cede the competitive advantage that we have long held.

Madam Chairman, I am -- Chairwoman, I am so pleased that we are proceeding in a bipartisan and bicameral fashion to address this important issue, and hopefully within a short period of time, we will be successful in sending legislation to the President's desk.

And with that, Madam Chair --

Mr. Bucshon. Madam Chair, I have one quick question to ask, so --

Mr. Rush. -- I yield back to Mr. Bucshon.

Mr. Bucshon. Thank you, Congressman Rush.

In 2016, the Obama administration issued the first Federal policy on autonomous vehicles, which made clear the current division of regulatory responsibilities work. NHTSA regulates safety, and States continue their traditional role of traffic laws, insurance and the like.

Mr. Shapiro, can you please explain why it is so important for us to make clear those roles remain for this new technology?

Mr. Shapiro. So we could move legislation forward and have some certainty with the law that the country could follow for manufacturers and consumers, and consumers can benefit, so lives can be saved and injuries can be reduced and people could be empowered, and so we could actually go to a greener society. So that is what I think we

have to -- I mean, if I had to do it all over again, I am not sure I would keep that, but I am realistic. And I think it is -- you know, this legislation -- and I just want to say, I think I speak on behalf of most Americans, it is gratifying to see bipartisan action on something as important as this. This is not what Americans usually see, because it is not controversial, but this is -- it is important that we go forward as a Nation and as a country to preserve the lives and help and empower our citizens.

So there is an existing legal standard. We are not looking to change that balance. It would tie us up for another 10 or 15 years, and we wouldn't get anywhere.

Mr. Bucshon. Thank you very much.

I yield back.

Ms. Schakowsky. The chair recognizes Ms. -- Congresswoman Blunt Rochester. Where did she go?

The chair recognizes Mr. Soto for 5 minutes.

Mr. Soto. Thank you so much, Madam Chairwoman.

First of all, it always amazes me how forward looking and into the future we get to be in this committee, looking at 10, 20, 30 years or further down the line. I am reminded of the movie, "Minority Report," where all these autonomous vehicles are buzzing by and no one has to drive anymore and everybody, regardless of their age, their youthfulness, their disabilities, are able to have freedom of movement. And it is something that I think is coming quicker than we think, but with it comes challenges.

One of the bills that I filed was the AI JOBS Act, knowing that, as we develop more autonomous vehicles and other artificial intelligence, that we need to be better prepared for the job losses that will happen, knowing that other jobs will happen because of the AI

revolution. And we saw in the past with the advent of the internet that we weren't as good on a Federal level to be proactive to help folks.

So one thing as we are going forward, Madam Chairwoman, to keep in mind is in this theme of making sure we are better preparing folks, much like in your example, of after NAFTA as well.

In our district, we have SunTrax right by it in Florida Polytechnic University and, of course, they are developing a lot of the technologies. But right now, I want to talk a little bit about how we navigate the liability issues that I know the Senate has been grappling with. There was an attempt to put an arbitration clause in there. Generally, when we are talking about common carriers and other types of vehicles, it is strict liability, and these are the types of issues we are going to have to work with.

So I first want to start with Mr. Daniel Hinkle. How do we navigate this liability issue to protect consumer rights in balancing out with ensuring innovation?

Mr. Hinkle. Thank you very much for the question, Congressman. The liability issue, as we have testified here today, as I have written in my oral testimony, the most important thing to focus on for the committee as we are going forward is the ability to continue to hold companies publicly accountable for the harms that they cause.

I want to clarify. To the extent that automated driving improves safety in the United States, we are entirely in support of that. That is one of the things that we have fought for as automotive vehicle safety. Our members have been fighting for that for over 50 years, and that is one of or top priorities. But in order to ensure automotive vehicle safety, we need to have public accountability, and as I mentioned in my testimony, that involves no preemption. It means prohibiting the use of forced

arbitration clauses, and identifying that the manufacturer of the automated driving system is responsible for following the rules of the road, that they are taking on the responsibilities of the driver, that they have promised that they will drive safely, and they should be held accountable to that promise.

Mr. Soto. And we also have other scenarios in society where things are automated. What would be some other examples that are already in law?

Mr. Hinkle. I am sorry. Could you --

Mr. Soto. Of liability for other automated functions that already exist.

Mr. Hinkle. Well, this is -- I mean, that is one of the things that is interesting about this, and Mr. Shapiro has raised multiple times. This is one of the cutting edge technologies. This is where artifical intelligence and robotics are really first hitting society today. And as Mr. Shapiro has pointed out, this is a very complicated, new, emerging area that involves a lot of different areas.

And so thinking through the liability implications of robots being introduced in society where you have a corporation that is governing their control, that maintains operational responsibility for the way those things are being used in society, it is very important that they are held publicly accountable for the harms that they cause.

Mr. Soto. And next turn to Mr. Bozzella. What is sort of the balance that you are hoping is struck?

Mr. Bozzella. Yeah, I think the balance is already struck. You have -- and the balance is important, and I think you have used the right word. You have an agency, NHTSA, that has significant enforcement and investigation and recall authority, and that is also supported by product liability and tort -- and the tort system. That is really

important. I agree with Mr. Hinkle on that, and nothing in this bill changes that. The bill you have already passed supports that. So you have gotten that balance right already.

Mr. Soto. And, Mr. Shapiro, your name was invoked. So I will give you a chance to be -- also to comment on this balance.

Mr. Shapiro. Yeah. I don't think we should use the advent of this amazing technology which will save lives and empower people and reduce injuries to add a new feature to our existing, to our liability laws as to get rid of arbitration when it is working so well in so many different ways.

Our Nation pay as lawyer tax. We are at a competitive disadvantage versus every other developed country because we have literally tens of thousands of lawyers, we are overlawyered, and we are encouraging them to file lawsuits. So I think by changing the legislation, as been proposed by Mr. Hinkle, what we are doing is we are trying to ensure the trial lawyers still could keep their jobs.

And I am very respectful of the fact that you raised and, Chairman Schakowsky, you raised this not only in this hearing but a prior hearing about jobs. We have an obligation as an industry to make sure Americans are trained in new jobs, the jobs we need, and we are stepping up. We are doing that. Our association is committed to over 2 million reskilled American workers and we are focusing on that, because it is very important. We are looking at everything from apprenticeship programs to training, and jobs are important. I just don't think they necessarily should be legal jobs.

Mr. Soto. Sure. And we know jobs are important, as are making sure victims of injury have some rights to be able to seek recompense, and that is the balance we are

looking to strike here.

Thank you so much. And I yield back.

Ms. Schakowsky. I now recognize Mr. Carter for 5 minutes.

Mr. Carter. Thank you, Madam Chair.

Madam Chair, I would look to offer these letters for the record from Cruise and Intel supporting our legislative effort to enable the development and deployment of self-driving vehicles in the U.S.

Unanimous consent. So moved.

Thank all of you all for being here. This is a very important subject.

She will be okay.

Very important subject. And I want to just start off by sharing with you, last Congress, one of our colleagues, who is no longer in Congress now, but Representative Greg Harper from Mississippi, along with Ms. Dingell and Mr. Rush, introduced H.R. 3414, which established an advisory council to bring experts together to help advance mobility for the disabled community and -- the disability community. And that -- this technology is so transformative and so innovative, that we are excited about what it could bring.

I wanted to ask you, Mr. Riccobono, just very briefly, can you explain how self-driving cars will restore independence to the blind community?

Mr. Riccobono. Well, thank you for the question. Blind people obviously aren't in a driving class today, and so getting around is one of the chief barriers we face, especially in employment. And if you think about the discussion that we have had a little bit here today about employment, autonomous vehicles, amongst other things, has the opportunity to really empower blind people and others with disabilities to have

better access to jobs. A lot of times we are limited on the employment opportunities for many reasons, but one is access to those jobs based on proximity to our homes. So I think that is a significant factor in quality of life and the opportunities that this technology can create.

Mr. Carter. And create -- and please correct me if I am wrong, but that also helps our economy as well.

Mr. Riccobono. Helps our economy because we are putting more people to work. You know, even in this time when the unemployment rate is so low, you still have a lot of people with disabilities who are seeking employment who don't have jobs for a variety of reasons. So the more people putting into the economy, the more people that don't have to rely on the public supports that are available. Blind people, we want to work, and we want to get to our jobs safely, effectively, easily and in an affordable manner.

Mr. Carter. And that is a great point. Thank you for making that.

Let me ask you now, what do you see the role of the disability organizations playing on this advisory council? What would be your main priorities?

Mr. Riccobono. Well, the main priorities, again, people with disabilities need to inform what accessibility looks like in these vehicles. I think that is really key. And we need to make sure that, in addition to adding our perspective, user perspective to the technology, which will make it better for everybody, also making sure that we don't create regulatory frameworks that have unintended consequences of shutting out people with disabilities or creating schemes that really prevent people from -- with disabilities from having equal access to these platforms.

RPTR GIORDANO

EDTR ZAMORA

[12:01 p.m.]

Mr. Carter. Great points. Thank you very much for that.

Mr. Bozzella, let me go to you and ask you this question: One of the pieces of legislation that I have been working on as a healthcare professional is nonemergency medical transport. That is very important, and it is important obviously in our urban areas, but particularly important in our rural areas. My district is a very rural district, so I am very interested in this. And as I say, as a healthcare professional, I have witnessed just how important preventive medicine is, and this will give us an opportunity to address that.

Can you tell me, how do you think this legislation and, specifically, autonomous vehicles, will impact and benefit nonemergency medical transport?

Mr. Bozzella. Yeah. Thank you for the question. I think absolutely it will have a positive effect on that type of transportation. Really what you have is an opportunity here, through a whole array of different uses of the technology, to move people to medical appointments, to the hospital for preventative care and the like. And that is one of the great opportunities here in both urban and rural environments.

Mr. Carter. So there we have it, just two great examples. That helps our economy. I mean, as we practice more preventative medicine -- and that is essentially preventative medicine -- as we employ more people, this is going to pay off in so many different ways. It is exciting to think about the future of this and what we will be able to do.

I do want to get a plug in. My bill is H.R. 3935. It has moved through the Health Subcommittee, and it is my hope that it is going to continue to move on, and setting the policies for the AV rollouts will help this. There is no question about it.

How close are we, Mr. Bozzella, how close are we to getting this to reality?

Mr. Bozzella. Well, what you are seeing now is -- and others -- Ms. Chase and others have made this point. What you are seeing is the building blocks for this technology in the marketplace today making -- you know, making roads safer today.

Now, the vehicles on the road today are all Level 1 and 2. I don't believe there is a single Level 3 vehicle in the marketplace today, so the vehicles in the marketplace today require constant vigilant driver attention. The transition to these higher technologies will really depend on use cases.

I do think, in the near term, you will see first mile/last mile people transportation and package transportation. The Nuro grant of their petition suggests that that is the type of near-term application you would see.

I would want to make one more point in that, in the Level 3 area, for example, I do think you will see that type of driver support technology, especially across the country and in rural areas, really supporting more opportunities for mobility.

Mr. Carter. I couldn't agree with you more. I bought my wife a new car for Christmas, and I should get an attaboy for that, but anyway I did, and it is like driving a spaceship. It is amazing; it is.

Well, thank you all very much.

Madam Chair, I want to remind you that, by unanimous consent, you did approve these two letters earlier, and thank you.

Ms. Schakowsky. I did. They are on the record.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Carter. I yield.

Ms. Schakowsky. Okay. I now recognize for 5 minutes Mr. McNerney.

Mr. McNerney. I thank the chair. And I thank the witnesses' excellent testimony. I really appreciate it.

Ms. Chase, in your testimony, you call on NHTSA to establish a cybersecurity standard to protect against potential hacks. What do you think such a standard would look like?

Ms. Chase. Well, honestly, I am not a cyber expert, but what we would like to do is to require NHTSA to move forward with the minimum performance standard and get experts in this field working on it. So I think that let's leave it up to the experts to determine it.

Mr. McNerney. Well, it is my understanding that NHTSA can currently use its recall authority to remove vehicles with cybersecurity vulnerabilities from our Nation's highways. Is the recall authority sufficient? Are recalls alone an effective way to manage cybersecurity risks?

Ms. Chase. No, I don't think it is an effective way to manage it. That is being responsive. We should be proactive. In addition to having the minimum performance standard, as I just mentioned, I think that NHTSA should be granted imminent hazard authority. So if there is a problem on our roadways, it doesn't have to wait for the recall process, but they can say, pull these cars off the roads right now because they have been hacked.

Mr. McNerney. Well, should cybersecurity protections apply to all vehicles or

just AVs?

Ms. Chase. They should absolutely apply to all vehicles. As the Congressman just mentioned, there are cars on the roads that are Level 2 right now and have very sophisticated systems that are hackable, and I don't see why we would want to delegate -- relegate, rather, these protections, these cyber protections, just to your Level 4 or Level 5 vehicles. Let's make all cars as safe as we can make them.

Mr. McNerney. Thank you.

Mr. Tumlin, AVs could interconnect with smart infrastructure like tolls and traffic lights. Are you concerned about the potential cyber vulnerabilities in AVs could pose in that situation?

Mr. Tumlin. I am.

Mr. McNerney. Any comment about how to protect against that?

Mr. Tumlin. So not only am I concerned about the ability for AVs to be weaponized, but also what happens when AVs experience a disruption and I have 6,000 of them on my street, and they all suddenly come to a stop, shutting down all traffic in San Francisco. So we have many, many levels of detailed concerns, including the ways in which they interact with our municipally operated systems like traffic signals.

Mr. McNerney. Thank you.

Again, Ms. Chase, for the foreseeable future, AVs will rely both on drivers to operate vehicles, depending on the situation. What role would drivers or occupants of AV have when it comes to ensuring that the vehicles they are operating are safe?

Ms. Chase. One of the challenges right now is, with your Level 2 vehicles that are on the roads, that people are becoming overreliant upon the technology, and that has

been evidenced in the number of crashes. The human brain is such that when someone thinks that it is -- that a task is being taken care of, it looks to do something else, like look on your phone, read a book, take a nap.

So, in this interim process, before we get to Level 4, Level 5 vehicles, when there are cars on the roads that are reliant upon the human driver, it is essential that there be reminder systems and that the person, the driver, stay engaged fully in the driving process.

Mr. McNerney. Thank you.

It has been said that airline safety rules had been written by the blood of the victims of airline crashes. Is that going to be necessary with AVs or is there a safer, more -- a way to get there through technology?

Ms. Chase. I would offer there is a safer way to get there, and we really are trying to prevent motor vehicle crashes. I understand that motor vehicle crashes -- that humans are responsible for large amounts of motor vehicle crashes. Given. However, who is making the autonomous vehicles? Humans. So let's not replace one human mistake with another.

Mr. McNerney. Thank you.

Mr. Shapiro, do you see AV technology being deployed incrementally or do you think it is going to be happening in leaps and bounds? You know, currently, we see driver assistance being improved and so on with different levels. Do you see this as happening quickly or through just a series of incremental steps?

Mr. Shapiro. Well, the American public has already voted with their dollars that they want to see this technology deployed. They are buying systems increasingly that,

as we get closer and closer to Level 2, Level 3, and soon Level 4, so Americans want this technology. They want to be safe. They want their kids safe and their families safe.

You know, you are seeing increasing numbers of lane departure technology out there, automatic braking systems. We are seeing all these things which are making us safer. We expect to see the death rates going down, and this is more of a marketplace phenomena. It is because consumers want it.

There is some debate, even among car makers and others, if we get to a really great Level 4, will consumers want Level 5? And that remains to be seen. I believe, given the amount of time that stressed out people in the Washington area waste in cars, that they will welcome Level 5, and you can do a lot of other things. You can learn another language. You could interrelate. You could do other things other than drive and have to use that focused attention on the highway.

So I think Level 5 is the inevitable future. It may differ demographically by age and maybe rural versus suburban or urban; it remains to be seen. But we are -- I think it is important we have that progress going forward to gain for Level 5, because that will truly provide the greatest safety for our citizens.

Mr. McNerney. All right. Thank you.

I yield back.

Ms. Schakowsky. The gentleman yields back.

And now I recognize Mr. Gianforte for 5 minutes.

Mr. Gianforte. I want to thank the chair and ranking member for holding this important hearing today. And thank you to the panelists for being here, for your testimony. This is an important topic.

Before I begin, Chair Schakowsky, I would like to offer this letter for the record from Aurora, supporting our legislative effort to enable the development and deployment of self-driving vehicles here in the U.S.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Gianforte. Thank you.

Fully autonomous cars are still several years out from driving on our roads; however, auto and tech industries are making great strides in turning science fiction into reality. It is no longer a question of if these cars will become into being; it is just a matter of when.

The self-driving car industry is growing in Montana, powered by our photonics industry. Last year, Aurora purchased Blackmore, an industry leader in LIDAR technology, and opened its fourth office in Bozeman, Montana. Aurora supports many high-paying jobs in Montana. And recently -- recently, the company began work on Level 4 trucking because of the LIDAR technology developed in Montana.

As we move forward, it is important that this committee continues its constructive bipartisan approach to self-driving vehicles. We must ensure a bipartisan package addresses the growing patchwork of State and local regulations, while emphasizing safety on our roads. It is also important to have a level playing field to create competition and spur innovation.

In 1997, my wife Susan and I started a little business in our home. We had an idea that the internet might actually remove geography as a constraint in where you locate a business, even in Montana. We were right. Our company grew from a home -- a room in our home to one of the State's largest employers, with 1,100 employees, and, probably, we provided a wage that was three times the State average.

Ours is just one example of how a level playing field created more high-paying American jobs with increased opportunity and greater prosperity.

Unfortunately, it is not the case with autonomous vehicle space today. Currently, established car companies, like Ford, GM, and Toyota, are able to test their prototypes on public roads. They can do so without following all the safety regulations, if they register -- if they register with NHTSA and agree not to sell or lease their vehicle for the general public. This allows car companies to test new concepts and features for the next generation of vehicles.

Unfortunately, for new startup manufacturers, the same rules don't apply. They must apply for an exemption to the safety standards in order to test on public roads. This effectively shuts out new ideas that could further enhance viability and improve safety of self-driving vehicles.

Last Congress, my colleagues, Ms. Walters and Ms. Matsui, introduced H.R. 3405, the MORE Act, which was eventually rolled into the SELF DRIVE Act, and passed by this committee and the House unanimously. The MORE Act created a level playing field between tech companies, new entrants, and legacy automakers developing autonomous vehicle technology. I am pleased to see this critical provision included in the ongoing bipartisan, bicameral discussions in this Congress, and I am committed to ensuring that any autonomous vehicle legislation includes these provisions.

Mr. Shapiro, can you explain why this provision is so important to the tech industry?

Mr. Shapiro. I don't think I could explain it better than you did, but you are right; we are a country that relies upon innovation. It is in our DNA. It is who we are. It is the new player coming in and making it better. Sometimes in big companies, it is more difficult to be innovative, but I give credit to the big Detroit companies and others as they

have recognized that this is the future, and they have acted, unlike any other industry faced with a past threat, and they are innovating. They are hiring people. They are doing this well.

And what we have is this great, in a sense, competition in the country, and cooperation, competition among many different companies, many different areas, and I think we are on the right path. But I think the level playing field concept that you talk about is so critical to getting what is best for the American public to make sure that the systems are the best. It is a matter of competitiveness, a matter of safety, and it is a matter of empowerment.

Mr. Gianforte. Yeah. And I would agree. You look at any industry where we have innovation, it tends to be the upstarts that are willing to challenge the status quo that tend to have the breakthroughs that allow us to advance, and the incumbents don't necessarily reinvent themselves as fast as the upstarts do.

Mr. Shapiro. And that is what makes America great, and that is what fueled our economy, is innovation.

Mr. Gianforte. Yeah. Mr. Bozzella, can you explain how encouraging market competition, as this provision does, will help us deliver the best technology that we can produce?

Mr. Bozzella. Yeah. Congressman, I agree with you; we do need, to solve this problem, we need the best minds. We need partnerships. We need engagements across the board. And what you are seeing is partnerships between established automotive innovators as well as the startup companies working together. That is the playing field we need; everybody together trying to move these technologies into

the marketplace.

Mr. Gianforte. Okay. Thank you. I would like to thank the chair and ranking member again for this important hearing, and I yield back.

Ms. Schakowsky. The gentleman yields back.

And now I invite Mr. Cardenas for his 5 minutes.

Mr. Cardenas. Thank you very much, Madam Chair and Ranking Member, for having this important hearing.

I just want to remind everybody that, in 2018, over 6,000 pedestrians and over 850 bicyclists were killed in traffic crashes. Also, in March of 2018, an Uber self-driving test vehicle struck and killed a pedestrian. The NTSB, the National Transportation Safety Board, found that the vehicle was incapable of correctly classifying and predicting the path of pedestrians not near a crosswalk, a critical limitation that ultimately took the life of Elaine Herzberg.

So my first question is to Mr. Tumlin. What safeguards should be in place to ensure that AVs eliminate pedestrian fatalities and injuries?

Mr. Tumlin. So, first of all, I would like to say that I think everyone in this chamber believes in promoting innovation, safety, and Federal leadership, but that we need the Federal Government to lead with wisdom. And the current regulations -- the current legislation wants to preempt the ability of the State and local governments to innovate, while avoiding doing the most important work that the Federal Government needs to do, which is to allocate sufficient resources to NHTSA to do their job. And so that is my answer to your question, is creating enough resources, enough talent at NHTSA in order to ensure that there are the correct standards for collecting that information.

Mr. Cardenas. Well, what is interesting, we have a constant battle in elected office in this country where some people just want to grind down government activity down to zero. And what you just described is trying to make sure that we have the proper balance, whether it be Federal Government, State government, et cetera. And what is unfortunate is every elected official, everybody running for office in America talks about safety first but, at the same time, making sure that we have the proper guardrails for innovation to continue and flourish, and that is where government, in my opinion, does have a proper place. And, unfortunately, you pointed out that giving NHTSA the proper amount of resources so they can do their job.

Again, to me, do their job is not getting in the way of innovation, but making sure that we don't have people -- organizations running amuck thinking, just because there is a loophole in the law, they can just take it to the extreme, and therein lies, unfortunately, we could have fatalities, not just one, but more than one. And that is where I come from as a policymaker and also somebody who is a former engineer myself and someone who learned a lot of about R&D and the value of R&D.

But it is one thing to have R&D in the lab and it is another thing to have R&D unbeknownst to the people on the streets of America that R&D is going on right in front of their face.

I am now a grandfather. My grandkids, every time I bring them out of their car, whether we are in a parking lot or near a street, my heightened awareness and understanding that that little child could bolt out in front of a vehicle at any given time could happen at any moment, and for a vehicle to be able to have that kind of heightened awareness or what have you, I think is -- I don't think we are there yet.

I hope that we get there as quickly as possible, because autonomous vehicles are, in fact, here. They are improving, thank God, but at the same time, I think it is important for us to understand is what is the role of government in this.

Do you have an opinion on that, Mr. Tumlin?

Mr. Tumlin. I feel that the role of Federal Government is obviously around regulating the vehicle itself and establishing the necessary data protocols, learning from the work that the urban mobility foundation is doing in order to establish national protocols in collaboration with industry, collecting that information, analyzing it through the National Transportation Safety Institutes. And while it is doing that essential work, continuing to allow the innovation that is already occurring at the States, in the absence of a Federal response, letting that work continue until the Federal Government completes its essential homework.

Mr. Cardenas. Well, that last part where you said where the Federal Government completes its essential homework, therein lies the rub between the politics and the policy and the getting out of the way and things of that nature.

It is unfortunate that we do need to have concurrent activity going on. We need to have responsible activity. And one of the problems that we have is that too many people, when they are talking about innovation, and especially in an open space like we are talking about today, the patience unfortunately isn't there. So I think it is important for us to understand that every entity has its role. Private industry has its role. Science has its role. Public safety should always be first. And government does have a role as well, so -- looking that I do not have any more balance of my time, I yield back.

Ms. Schakowsky. The gentleman yields back.

And now I recognize Mr. Guthrie for 5 minutes.

Mr. Guthrie. Thank you very much, Madam Chair. I appreciate it.

Mr. Bozzella, I want to make sure this technology will not only benefit people in urban areas, in cities, but also throughout rural America. I know your members are probably thinking about applications in rural America, and how can we ensure that rural communities are not forgotten as this technology is deployed?

Mr. Bozzella. Congressman, a couple things. One is, let's pass the bill, because what the bill does is allows companies, through this regulatory process that you are establishing, to be able to deploy vehicles across the country and to be able to deploy them safely across the country on a case-by-case basis. So that is first.

Second, what this bill does is it allows for innovation to flourish, and it allows companies to develop technologies for different use cases. Yes, urban transportation, but also, yes, rural transportation, moving people to healthcare appointments, providing options to get -- travel long distance to work. These technologies, whether they are Level 3 technologies with some driver engagement from time to time, or whether they are fully automated Level 5 technologies, would provide, I believe, significant opportunities for mobility in rural areas.

Mr. Guthrie. Okay. Thank you.

And you want to say something, Mr. Shapiro, I think?

Mr. Shapiro. I think -- thank you, Congressman Guthrie. It will help rural communities, I believe, because as you see the technology advancing, the cause will become cheaper. It will be a shared model. So if you live in rural America, you may not need to own a car, because you could summon one and be assured of service, which

you may not get today.

So it will empower people at all levels, I believe. It may take more time. I mean, it is tougher perhaps to get a car to go over a lengthy dirt road or something like that, but definitely rural America is underserved today. And what we have seen, even with Uber and Lyft developing, is we have seen more options for people who live in rural America. And I think we will see the same expansion with these type of vehicles.

Mr. Guthrie. Okay. Thank you.

And last Congress, I introduced H.R. 3430, the SHARES Act, which eventually became part of the SELF DRIVE Act. And the SHARES Act set up an advisory council to bring industry experts together to develop an information-sharing framework, to advance the safety of autonomous vehicle technology. And I am pleased to see the bicameral, bipartisan effort focus on this issue this Congress.

So, Mr. Shapiro, how important is it for us to be sure we are bringing experts and relevant stakeholders together to tackle emerging issues?

Mr. Shapiro. I think that is very important. I think everyone should be at the table. And I think, as long as we agree upon the goals, we will move the Nation forward. It is agreeing upon those goals that is very important, and I think we already have the basis of the goals that we have in this legislation, we have in this hearing.

We want a safer, empowered America. We want a competitive America. So how do we get there? We lay out the goals, and we get everyone around the table with a stake, and we make sure everyone is pulling the same direction. And that is what I think policy should move forward on.

Mr. Guthrie. Okay. Thank you.

And, Mr. Riccobono, talking about America being competitive and being part of this, if the U.S. does not develop or win the global race to autonomous vehicles, do you worry that mobility benefits will go elsewhere and that your community will not benefit from this technology?

Mr. Riccobono. I do worry about that because, again, the United States is a leader in terms of full participation of people with disabilities, and part of that is making sure that people with disabilities are part of the design process, and we just don't see that happening and driven by people with disabilities in other countries. In this Nation, the National Federation of the Blind, as this country's membership and civil rights organization, we are involved at every level of technology development.

If other nations are leading the way on that, I am very skeptical what kind of participation, if any, from real people with disabilities will be involved, and I think then we lose the innovation that comes from accessibility and being part of the process.

Mr. Guthrie. Thank you very much.

And that concludes my questions, but, Chair Schakowsky, I would like to offer a letter for the record from Securing America's Future Energy in support of the Federal legislation on self-driving vehicles.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Guthrie. Thank you. I yield back.

Ms. Schakowsky. Every time I think I am going to introduce you, so -- but I want to give 5 minutes to Congresswoman Blunt Rochester.

Ms. Blunt Rochester. Thank you so much, Chairwoman Schakowsky, and thank you for your patience. I have been up and down stairs for different hearings. Thank you so much as well for Ms. Rodgers and both of your leadership on these issues.

Mr. Shapiro actually has said a few things that really stick with me about the lack of national goals, the fact that we need a sense of urgency in this country, and also, that we need to bring people around the table. And so I just want to share that I was fortunate recently to launch a bipartisan Future of Work Caucus here in Congress, because this issue touches every single Member of Congress in every single -- from precision agriculture, to telemedicine, to autonomous vehicles. And whether it is getting to work or whether it is creating jobs, this is a very, very important hearing.

And so autonomous vehicles will start a mobility revelation in the United States. Self-driving cars will alter transportation paradigms so radically that they will surely reshape the design of American communities, whether rural, suburban, or urban.

In addition to these radical changes to transportation, we hope to see opportunities for independence for individuals who have disabilities, individuals who are seniors, and those who have visual impairment. We also hope to see more jobs. We hope to see a cleaner environment, and also safety -- safety and saving lives for our country.

With estimates of 1 in 4 to 1 in 5 adults living with disabilities, we must be sure to

put accessibility concerns to the forefront of our efforts so that we can benefit -- those who can benefit most from self-driving cars can meaningfully participate in this mobility revolution.

I want to start off following up with Mr. Bozzella's answer, and I am going to go to Mr. Riccobono. How important is it for NHTSA and Congress to set accessibility standards for self-driving cars? And in setting these standards for self-driving cars, what specific issues should NHTSA and Congress consider?

Mr. Shapiro. So accessibility is extremely important. What the industry has done going back over the last year or so is we have held a series of workshops on accessibility with members of the disability community, with Mark and others, to make sure that we understand what the needs are for those communities. That is first and foremost; let's make sure the innovators understand what those needs are, and from there, that informs our research and development process, and it informs discussions with the public and with the regulators.

Ms. Blunt Rochester. And, Mr. Riccobono?

Mr. Riccobono. What I would add to that is it really touches all aspects of these vehicles. So first, obviously, is the operation. If you are a blind person in one of these vehicles, you need to know what the car is doing, and if individuals in these vehicles have the potential to do anything to control the car, blind people need access to that.

Second is just the basic interior controls of the vehicle. You know, I want to be able to turn on the radio or change the air-conditioning, so those things need to be accessible.

A third is just general external alerts and navigation. I think blind people have a

lot to contribute to these vehicles. We have been using GPS as consumers more extensively and for longer than, well, most people. So I think being able to query all of those things that are available.

The last thing is just locating autonomous vehicles, which I think is maybe going to be an issue for everybody. You know, if you go to the Nationals game and you are coming out looking for your autonomous vehicle, and they are all -- well, it is the same thing that happens with Uber and Lyft. Everybody is looking for a black Prius. So how do you identify and locate your vehicle? And I think that is a place where accessibility will actually enhance the usability for everybody.

So it is really dynamic, and I think, as long as accessibility is a priority, we can get to all those areas, and certainly we will probably discover others as we get down the road.

Ms. Blunt Rochester. Thank you.

I know that in the previous Congress, in the 115th, there was talk and proposals of advisory committees and councils, and I would assume that you would like to see this as well, that we should consider an advisory council? And that is just a yes-or-no question.

Mr. Riccobono. Yes.

Ms. Blunt Rochester. Okay. And then, lastly, I just want to hit on one thing you mentioned, basically about universal design. I keep trying to share that with members and witnesses, because curb cuts don't just help wheelchairs; they help baby strollers. Closed captioning, while it helps individuals, you know, who maybe cannot hear, but it also helps at a football game if you are, you know, somewhere where you can't really read it. And I think that we want to make sure that, regardless of auditory, visual, or

other needs or impairments, that these systems are communicating emergencies to passengers as well, not just where is my car, but is there danger.

And so we will follow up with additional questions for you, but I want to just thank the leadership of Ms. Rodgers and Ms. Schakowsky for this really important and revolutionary hearing.

Thank you, and I yield back.

Ms. Schakowsky. I thank the gentlelady.

And now I recognize Congressman Long.

Oh, wait. I am sorry. You waived on.

Congresswoman Dingell, who I think has a slight interest in this issue, you are recognized for 5 minutes.

Mrs. Dingell. Thank you, Madam Chairwoman. I thank you for holding the hearing, and I do care greatly about this.

I thank all the panel for being here, and I want to start with a yes-or-no question for all of you.

So everyone knows I am proud of the work that we did in a bipartisan fashion in 2017 through the passage of the SELF DRIVE Act. It wasn't easy to find consensus, but when we couldn't get it done in the last Congress -- that Senate again -- the committee restarted this year with a bipartisan, bicameral process to find common ground and solicit comment from all stakeholders, including everybody here today, and we really care about it. Committee leadership has released several staff drafts for comment, and more are coming.

My question is this: Will each of you commit to work with the committee

openly, transparently, and in good faith to get a bill that can be signed into law this year? Just yes or no, starting with Ms. Chase.

Ms. Chase. Yes.

Mr. Bozzella. Yes.

Mr. Shapiro. Yes, and we will keep our word.

Mr. Hinkle. Yes.

Mr. Riccobono. Yes.

Mr. Tumlin. Yes.

Ms. Schakowsky. Okay. We will refrain from editorial comments, because I am going to take everybody's yes as a positive yes.

The next question I will request is a yes or no again. Do you believe Congress needs to act to ensure the safe deployment of AVs or is the status quo acceptable? Yes or no. Ms. Chase.

Ms. Chase. Yes.

Mr. Bozzella. Yes.

Mr. Shapiro. Yes, but with balancing the lives saved against the -- you can't get perfection.

Ms. Schakowsky. Mr. Bozzella, you think status quo is okay?

Mr. Bozzella. Oh, I am sorry. I thought the question was does Congress need to act? My answer is Congress needs to act, so if the question --

Mrs. Dingell. For safety, then.

Mr. Bozzella. -- is status quo, no.

Mr. Hinkle. Yes, Congress needs to act.

Mr. Riccobono. Yes, Congress needs to act.

Mr. Tumlin. Yes, Congress needs to act, but not preempt.

Mrs. Dingell. Thank you. If Congress does not act this year, do we run the risk that China, Europe and the rest of the world will end up writing the rules for governing AVs and that the United States will be left behind? Ms. Chase?

Ms. Chase. Based on my knowledge, no.

Mr. Bozzella. I believe so, yes.

Mr. Shapiro. Yes.

Mr. Hinkle. I don't know.

Mr. Riccobono. Not my area of expertise.

Mr. Tumlin. No.

Mrs. Dingell. Thank you.

I do believe, just in case you missed it, that we need to do something this year, and I don't want to lose -- they are going to be developed, whether we like it or not, and I would like to see us do it here with all of you to ensure we don't cede the development of this technology to the rest of the world.

These questions are for Mr. Bozzella and Mr. Shapiro. Your membership is comprised of global companies who compete in the international marketplace. What will happen if Congress does not pass an AV bill? Will your member companies think twice about investing in AV development in the United States if we do not have clear rules of the road in place compared to the rest of the world?

Mr. Bozzella. My concern is, if we don't act, if Congress does not act, the pace of innovation will slow, and where innovation happens is where the rules are going to be

set. And so I do -- I am concerned that if we have an extended period where the rules of the road between State and Federal are confused and where there isn't a process to get vehicles into the marketplace with giving the agency data, that we will fall behind.

Mr. Shapiro. All our companies are American companies. Eighty percent of them are small businesses, and 100 percent of them would like to see the U.S. Congress act on this legislation and do the right thing so they can invest here. But if Congress doesn't, then, for the larger companies, money will go where there is more certainty.

Mrs. Dingell. So, Mr. Bozzella, I think there is concern about safety and concern about the industry tackling the issue of safety when it comes to AVs. Can you tell us how the companies are approaching designing these brand-new systems with safety in mind, and how can legislation assure that that is happening?

Mr. Bozzella. So safety is first and foremost in everything the innovators are doing. It starts with designing cybersecurity into the driving systems. It continues with building on the success of technologies in the marketplace today, like automatic emergency braking, lane keep assist, and adaptive cruise control. And, really, what happens now is, when Congress completes this work, what we will have is a robust regulatory process that allows us to go to the regulator and make the case that safety is first and foremost in the work that we are doing, and it is up to the regulator to make that determination.

I would make one other point with regard to the legislation. There is a public assurance process in your bill, and that is a great thing.

Mrs. Dingell. I am running out of time, so I am going to submit questions for all of you that I have, but I will going to ask one more question so all of you can answer one

more question.

Last week, NHTSA granted an exemption petition to Nuro for the operations of a low-speed driverless vehicle that will not have a steering wheel, mirrors, or a windshield. No more than 5,000 vehicles can be deployed during the 2-year period of exemption, and NHTSA conditioned the exemption by requiring mandatory reporting of information about the operation of the unit, as well as mandating proactive outreach to the communities where it is deployed.

This question is for all of you: What does the Nuro case tell us about how NHTSA views these technologies, and why does it highlight the need for Congress to act to supplement and enhance its authority to the area, or, Ms. Chase, are you not worried? And then we will quickly go because we are really out of time. Maybe I should do it for the record.

Ms. Chase. Should I answer?

Yes, I am --

Mrs. Dingell. The chairwoman --

Ms. Chase. -- concerned about the Nuro exemption.

Mr. Bozzella. I think what the Nuro exemption tells us is that NHTSA is focused on making sure that they are getting the data they need to continue to evaluate the systems and that the public is engaged in the process.

Mr. Shapiro. I think it is a great start in the right direction. This is a low-risk move. It is a very slow vehicle, and -- but I would like to see faster movement and more exemptions.

Mr. Hinkle. I think that the NHTSA followed its regulatory process, as best as I

was able to understand the opinion that they came out with in this case. We are concerned about the public accountability if they -- if these systems are -- do cause harm, based on some of the things that they weren't able to address in their regulatory process.

Mr. Riccobono. And, real quick, I am not familiar with this case, but I think that it is worth asking the question of whether and how accessibility was addressed within that framework.

Mr. Tumlin. It demonstrates that NHTSA already has the authority that it needs to do its job but is underresourced in order to be able to do so.

Mrs. Dingell. I agree with that too, by the way.

I will have more questions for the record, Madam Chair, if that is all right. Thank you.

Ms. Schakowsky. Thank you. The gentlelady yields back.

I welcome the two individuals who have waived onto the subcommittee, but I am going to first recognize Mr. O'Halleran, who is on the subcommittee, for 5 minutes.

Mr. O'Halleran. I want to thank the chairwoman and ranking member for holding this important and very timely hearing today about the future of self-driving cars and the impacts to our communities and economy but, most importantly, to the safety of our American citizens and our children.

As a former law enforcement officer, I agree with my colleagues that safety should come first, foremost, and at the top of the list. There is no question about that.

The next one down, or maybe even before it, is transparency. We don't know if we are going to have a safe vehicle until the transparency is at the appropriate level.

That safety should come first -- I am sorry. Tragically, in 2018, a self-driving

vehicle killed a pedestrian in Tempe, Arizona. The National Transportation Safety Boards found that, at the time, the vehicle did not have the necessary mechanics in place to maintain the driver's engagement, and whatever happens in the future future, the immediate future is going to say something about there has to be an attentive driver in this process.

We must continue to learn from past experiences to ensure safety truly complements innovation in legislation for the vehicles of the future.

Question, Ms. Chase: Over 1,000 self-driving cars are being tested in the U.S. today, including some in my district. What lessons has the industry learned from this particular crash and any of the other crashes similar to it that would help us out?

Ms. Chase. My concern is that the industry hasn't learned enough from that crash and that they are being bullish in terms of getting these cars on the roads via massive exemptions from Federal Motor Vehicle Safety Standards. There is a big difference between a Federal regulatory framework as being -- as has been espoused, and regulation.

The industry can go ahead right now and put together a regulatory framework. There is nothing stopping them from doing that. They can do a voluntary framework, but what we need Congress to do is to require NHTSA, the regulator, the cop on the beat, to issue regulations so that the public is protected from when these vehicles are being put on the roads before they are ready to do so, to be honest.

Mr. O'Halleran. Thank you.

Congress also has an opportunity to foster innovation in technologies that have life-changing impacts for many Americans. We are seeing unmatched growth in the

older adult population in Arizona, particularly high amount, actually. Self-driving cars will allow independence for seniors and people with disabilities.

This question is to both Mr. Shapiro and Mr. Riccobono. Did I get that right --

Mr. Riccobono. Yes.

Mr. O'Halleran. -- or was I close? Yeah. Okay. Good.

Please elaborate in how self-driving cars are safe and user friendly for older Americans and those with disabilities.

Mr. Shapiro. Go ahead.

Mr. Riccobono. Well, I don't think we know if they are safe yet until we know that they are accessible and usable, so that is number one. But, number two, we all know the stories. We have relatives, friends who continue to drive traditional vehicles when they shouldn't, and that is because we have set up a society that relies so heavily on driving for independence and access to so much.

We can eliminate that by making sure that with autonomous vehicles that are accessible to all, that we aren't putting individuals on the road who should not be driving, but yet we continue to give them the freedom and independence that comes from having access to those aspects of society and goods and services that they need to get to, whether it is medical or recreational, and that has tremendous benefits for everybody.

Mr. Shapiro. I share those views, but I would also add that a number of years ago, there was a proposal for Congress that every device be regulated for accessibility. We asked that changes be made in that proposal. It became into law, and what it did is it forced us into a relationship with the disability community. And we had -- until this day, have phenomenal productive dialogues. And had we gone with the proposal as

written, we would not be where we are today with all these devices that do amazing things from smart loudspeakers to telephones that are usable by the disabled in so many different ways.

I think the same thing can happen with automobiles. It is important that we get there. And it is important we measure our progress, not by the tragedy of one accident in Arizona or a few more that occurred or are likely to occur, but by the lives we will be saving every step of the way as we move forward on this. And that is -- it is a rational way of approaching it, even though every death is a tragedy. We have to focus on the savings and we have to focus on the empowerment of the disabled and the elderly.

And you stated a fact. We are getting older, and let's be honest, you don't drive as well when you are older.

Mr. O'Halleran. Well, thank you. I look forward to continuing to see the rapid growth of this exciting technology, but it is only going to be as rapid as the honesty of the industry is with Congress so that we can understand things together in a timely fashion.

And I yield back.

Ms. Schakowsky. I thank the gentleman.

And now I recognize Mr. Long for 5 minutes.

Mr. Long. Thank you, Madam Chairwoman. And thank you all for being here today.

I have had the privilege, honor, whatever, I guess, of riding in an autonomous vehicle, which I would recommend to everyone. It can be very disconcerting and exhilarating at the same time.

For Mr. Bozzella, in the Energy and Commerce Committee, we are familiar with

the cases in which free flow of interstate commerce should be leveraged for the benefit of the country as a whole. And would you explain for the subcommittee why continuing the national safety framework for self-driving cars is so important and what could happen to the industry if each State comes up with their own unique ways of regulating the design, construction, and performance of self-driving cars?

Mr. Bozzella. Thank you, Congressman, for the question. I think this is really essential, because getting the balance right between the importance of roles of State and local government and the important role of the Federal Government, will either -- if we get it right, will encourage innovation and will encourage more safety sooner. And the way to think about it is design, construction, and performance really should happen at the Federal level, because you don't want vehicles that are unable to move from one State to another State. What you do want is the design, the construction, and the performance to be developed once nationally in a safe way with regard to how NHTSA sees the world.

With regard to State and local government, if the State and local government chooses to limit the operation of those vehicles to a certain time of day or to a certain region or to a certain traffic pattern, the State and local governments is okay to do that. So the idea here is, let's make sure that development of the vehicle is focused once at the Federal level, and traffic enforcement and those types of things happen at the State level.

Mr. Long. Okay. It is pretty amazing to ride in one and to enter interstates and the on-ramps and off-ramps and watch the screen and see the people on the sidewalk and everything that they do have to be apprised of and to watch out for.

Mr. Shapiro, we are in a global race to deliver the safety and mobility benefits of self-driving cars to our people. That race clearly includes China. As you heard

Lady Rodgers say, China is here. They are using our roads trying their technology. They are using our people to enhance the capability. To beat China and win this global race, do you believe Congress must act and act fast?

Mr. Shapiro. Yes. I believe congressional action on this legislation will enhance our competitiveness as a country in this area and set a strong precedent for other areas as well.

Mr. Long. Okay. Thank you.

And, Madam Chair Schakowsky, I would like to offer this letter for the record from Honda, supporting our legislative efforts to enable development and deployment of self-driving vehicles in the U.S.

I yield back, Madam Chair.

Ms. Schakowsky. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. And you yield back your time?

Okay. And --

Mr. Long. Yes. Yeah, I yield back.

Ms. Schakowsky. And now, last but not least, Mr. Bilirakis, for 5 minutes, is recognized.

Mr. Bilirakis. Thank you, Madam Chair. Thank you for giving me the opportunity to waive onto this committee as well.

Last Congress, my good friend, Ms. Dingell, who was just here, and I introduced H.R. 3413, the ACCESS Act, which was eventually rolled into the SELF DRIVE Act, and passed on a truly bipartisan basis by this committee and the House by unanimous vote. The ACCESS Act established an advisory council to bring experts together to help advance mobility for senior citizens and those underserved by traditional public transportation.

Particularly in my home State of Florida, senior citizens play an enormous role, and we are no stranger to some of the daily challenges they face.

I am grateful to hear that my provisions in the ACCESS Act are part of the ongoing negotiations. I remain hopeful that we can get this done in a truly bipartisan, bicameral fashion.

Chair Schakowsky, I would like to offer this letter -- I have it in here -- a letter from the American Highway User Alliance, supporting our legislative efforts to enable the development and deployment of self-driving vehicles in the U.S.

So I would like --

Ms. Schakowsky. Without objection, so ordered.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Bilirakis. Thank you so much.

I have a question for Mr. Riccobono. I am so thankful, again, for your attendance today and your voice for the mobility community at NFB.

Do you foresee -- the question is: Do you foresee, sir, this technology improving mobility for our seniors much in the same way that it does for your particular community?

Mr. Riccobono. Thank you for the question, Congressman. Absolutely. Again, the possibilities of this technology has crossed over to so many areas, not just disability, but distracted driving, all sorts of other areas where having a human in the loop of the driving process creates difficulties. And I think that this technology has the power to, not just empower the people, but really create economic connections that we really can't easily anticipate today and societal benefits that are really going to be unanticipated.

Mr. Bilirakis. Thank you very much.

As a followup, your testimony mentions the need for nonvisual accessibility designs, and I know you elaborated on that in the questioning. My bill would establish the advisory council at NHTSA to provide guidance specific for these types of issues. Can you elaborate on the need for both technical guidance as well as best practices to incorporate the mobility community?

Mr. Riccobono. Yes. So, on the technical piece, you know, we -- so often in design, what we see is that people create design structures, interfaces that require vision, and we know that that is just not going to work for blind people. And so blind people need to be included in that because, especially today, the go-to design that people think

of for blind people is you should talk to things.

Well, if you have ever tried to talk to your iPhone or your Android, you know why you don't want to rely on that for your car, at least if you want to get somewhere quickly. So we need multiple interfaces, but that is just not enough. We need to make sure that the schemes for regulating these vehicles and use of these vehicles don't also keep individuals or classes of individuals out because of the way they are designed.

So having people with disabilities, elected leaders of people with disabilities to represent the voice and the experience of that community, as well as seniors and others, is critical to getting the design right. And, finally, the innovation that comes from having all those people involved is really huge and, I think, will benefit everybody.

Mr. Bilirakis. Very good.

Mr. Bozzella and Shapiro -- I guess I have a few seconds -- what do you think this technology will mean for the senior community?

Mr. Bozzella. I think it will be very significant and transformational. The opportunity to extend the ability to be mobile and do that safely will be significant, I believe.

Mr. Bilirakis. Very good. And, again, you know, we don't have the public transportation like we should in our area, particularly in the State of Florida, so that I think it would be very beneficial if we do it right.

And, Mr. Shapiro, would you like to comment on that?

Mr. Shapiro. I agree; it will be transformational for many seniors. It will actually cut down on accidents just by taking a certain percent of the population that perhaps should not be driving out of the pool. I mean those that really should not be

driving and may still be, because they need their independence, and we have to respect the fact that that is what seniors want. This is what is empowering about it, and I think it will be transformational.

Mr. Bilirakis. Very good. Thank you.

Thank you, Madam Chair. I yield back.

Ms. Schakowsky. The gentleman yields back.

Before I can adjourn the committee, I want to put into the record -- I will be seeking unanimous consent to insert letters, testimony, and other information into the record, and that includes a letter from the Center for Auto Safety; a statement from the American -- what does that say -- Property Casualty Insurance Association; a letter from the San Francisco Municipal Transportation Agency; a letter from the Disability Rights Education and Defense Fund; a letter from the National Safety Council; a letter from the National Association of Manufacturers; a letter from the Disability Rights, Education, and Defense Fund; a report from the Union of Concerned Scientists called "Maximizing the Benefits of Self-Driving Vehicles"; a report from the Union of Concerned Scientists called "Where Are Self-Driving Cars Taking Us"; a letter from TechNet; a letter from the Self-Driving Coalition; a letter from Privacy for Cars; a letter from the Consumer Federation of America; a letter from the United States Vehicle Data Access Coalition; a letter from the National Association of Mutual Insurance Companies; a letter from -- what is that -- Nuro; a letter from L.A. DOT; a letter from Uber; a letter from Continental; a letter from the Motor Equipment Manufacturers Association; a letter from the Senate to DOT about autonomous vehicles; a letter from the New York City Department of Transportation; a letter from the Association of American Railroads; a letter from the

National Automobile Dealers Association.

And I do ask unanimous consent.

Hearing no objection, so approved.

[The information follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. And now I would like to thank all of our witnesses for their participation in today's hearing. You can see how important it is to so many of our Members of Congress who did show up to this hearing and even waive on.

I remind members that, pursuant to committee rules, they have 10 business days to submit additional questions for the record to be answered by the witnesses who have appeared. I ask each witness, because I think there will be questions, to respond as promptly as possible to any questions that you may receive.

[The information follows:]

******** COMMITTEE INSERT ********

Ms. Schakowsky. And at this time, I --

Mrs. Rodgers. Can I speak?

Ms. Schakowsky. If you would like to say a word.

Mrs. Rodgers. Sure. Well, I might just say, I asked some car manufacturers recently, so when am I going to be able to buy one of these self-driving cars? And the response was, Well, maybe your kids, maybe your grandkids.

So we still have a long ways to go, but having this hearing today and getting this discussion going, I think is really important, and I am hopeful for some bipartisan legislation.

Ms. Schakowsky. I couldn't agree more.

And at this time, then, the subcommittee is adjourned.

[Whereupon, at 12:56 p.m., the subcommittee was adjourned.]