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Stempnik, left, White and Banta watch R2-D2 in operation during MCC's clases on IT.

Students Build Their Own Robots at MCC

by Jim Stickford

The 2018-2019 school year is almost upon us, but for some lucky students classes started a little early.

Macomb Community College (MCC) hosted a series of classes between Aug. 6 and Aug. 10 in

which high school students (owner of the Buffalo Bills). learned about different fields within Information Technology

Robert Banta, a professor of IT at MCC, said the classes were sponsored by the PRISM Foundation, which was created and funded by the late Ralph Wilson

"We're calling this week's classes 'Go Pi Go,'" Banta said. The students attend different IT sessions taught by the teachers, all from MCC, who expose students to different IT fields. So we

CONTINUED ON PAGE 5

GM's 2019 Silverado Adds Improved Towing Features

The view from a Silverado to a system in-vehicle, said Lienert. trailer it's towing has been improved, according to spokesman Phil Lienert.

A new Advanced Trailering System, which is now available on the 2019 Silverado 1500, offers several levels of towing features to improve customers' trailering experiences.

All light-duty Silverado models have myChevrolet trailering phone app capability and, with that app, customers can add the Advanced Trailering System, which includes access to the

The Trailering Camera Package works in conjunction with both of these technologies and provides a more comprehensive

trailer view. Lienert said. Chevrolet is also helping to take the guesswork out of calculating the combined weight of customers' truck-and-trailer combinations with an industryfirst trailering label, Leinert said.

In developing the new Silverado, Chevrolet spoke with 7,000

CONTINUED ON PAGE 2



Silverado's Advanced Traileering System gives better view of its tow.

Vehicle Badging Gets a Little Brighter

What's in a name? In a word, facturers need their products to everything.

Branding is an important part of automotive marketing and Lapeer Plating is helping OEMs make their vehicles stand out with badges that light up.

As automotive products become more global, and more competitive, the way their names are showcased on them becomes hypercritical for vehicle manufacturers, said Dean Harlow, CEO of Lapeer Plating + Plastics (LP+P), a manufacturer of Class A, high-visibility automotive components, including name-

"The global markets are incredibly competitive and manu-

stand out," said Harlow. "Nameplates are one important way to do that. We have to be progressive and innovative with our nameplate designs to grab consumers' attention.' Harlow, a 25-year GM veteran,

said that the need for brand awareness and product differentiation has grown as the automotive market has segmented and globalized, bringing more and more competition and more and more nameplates into each market as time goes on.

"With nameplates, we're essentially putting the signature on our customers' products," said Harlow.

'The vehicle name, or brand, is its promise to customers. It has to be executed flawlessly."

Lighted badges are the newest and hottest concept in vehicle nomenclature, Harlow said.

LP+P designs lighted badges as well as in-chrome and "paintover-chrome" designs and emblem inserts that provide color, depth and metallic sheen to vehicle nameplates.

"Lighted badges are just beginning their transition from concept to production units," said Harlow. "LP+P has an active R&D team that has been working on innovations like lighted badges. It's our job to be ahead of the curve so we're ready to meet our customers' needs on their timeline.'

The company also produces exterior and interior decorative trims, ornamentation, moldings and grilles, all of which assist



Lighted badges have become popular with auto manufacturers.

manufacturers to distinguish their vehicles on the road. LP+P provides components for a number of domestic and international manufacturers including General suppliers.

Motors (Buick, Cadillac, Chevrolet, GMC), FCA (Dodge, RAM), Ford, Nissan, Volkswagen, Tesla, as well as dozens of other tier

New Tariffs Add Costs to Car Manutacturing

NEW YORK (AP) - Manufacturing companies - including small businesses - say they're paying higher prices for raw materials and seeing longer wait times for deliveries of goods that must go through customs.

The problem stems from new U.S. tariffs on imports from big trading partners.

That comes in a report last week from the Institute for Supply Management, showing that manufacturing remained strong in July, but the industry group's members are feeling the effects of the trade disputes.

"Respondents are again overwhelmingly concerned about how tariff-related activity, including reciprocal tariffs, will continue to affect their business," ISM



CONTINUED ON PAGE 7 Body tracking technology is being used to improve auto assembly line production at a Ford plant in Spain.

Motion-Capture **Tech Helping Ford Production**

Technology typically used by the world's top sports stars to raise their game or ensure their signature skills, is accurately replicated in leading video games now being used on an auto assembly line.

Employees at Ford's Valencia Engine Assembly Plant in Spain are using a special suit equipped with advanced body tracking technology, said Ford spokeswoman Jessica Enoch. The pilot system, created by Ford and the Instituto Biomecánica de Valencia, has involved 70 employees in 21 work areas.

Player motion technology usually records how athletes sprint

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Royal Oak Society **Hosting Auto** Design Display

The Royal Oak Historical Society Musuem is presenting a special exhibition of automotive concept art through Sept. 15.

The display has been dedicated to automotive enthusiast Robert Edwards, who was a Royal Oak resident, artist and champion of automotive designers and their art.

Edwards, born in 1957, died this year. He worked to elevate automotive concept art to the status of fine art through the promotion of exhibitions, as well as getting automotive design art in publications. He enjoyed sharing the history of automotive design and sharing the stories of automotive designers. The work of artist Alex Tremulis will be on display ast well.

The exhibition is being held in the Royal Oak Historical Sociey Museum, located on 1411 West Webster Drive in Royal Oak.

The museum's hours are 1 to 4 p.m. on Tuesdays, Thursdays and Saturdays. To learn more. call 248-439-1501.

Silverado Technology, Towing Capability Now Available

CONTINUED FROM PAGE 1

customers over the course of 18,000 hours. Sixty percent of those surveyed named towing as a key purchase consideration. Another recurring theme was the difficulty many customers have with certain aspects of trailering.

To address this, all four trailering levels offered on the 2019 Silverado 1500 will provide customers more confidence, easier trailer hitching and improved connectivity between the truck and trailer, Leinert said.

"Ultimately," said Tim Herrick, GM's executive chief engineer, Full-Size Trucks, "these technologies serve to eliminate common pain points of towing and help provide customers with a less stressful experience while trailer-

Included with the purchase of all 2019 Silverado 1500s, the my-Chevrolet app will offer select trailering features such as pre-departure step-by-step towing checklists and a glossary of towing terms for compatible smartphones and data plans, Herrick

The myChevrolet phone app also allows drivers to conduct a trailer light test that uses an automatic exterior light sequence to help confirm that the trailer is properly connected. In the past, this was a two-person job - now a single individual can properly connect a trailer and check the lights, Lienert said. The trailer light sequence can also be activated via the Advanced Trailering

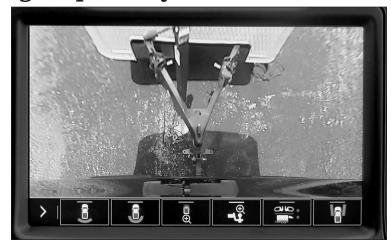
For customers who tow more often, the Advanced Trailering System provides features to make towing a more seamless process, Herrick said. The system is standard on LTZ and High Country trim levels and available on LT. RST and Trail Boss trim levels.

The system includes:

- Auto Parking Brake Assist: Customers who've dealt with the frustration of perfectly aligning their truck and trailer hitch only to see the truck roll when they put it in park will appreciate this industry-first technology. It sets automatically when the vehicle is put into Hitch View to help avoid vehicle movement after the cus tomer lines up the truck with the trailer and then shifts to park.
- Hitch Guidance with Hitch View: This adds a dynamic backing guideline to the Rear Vision Camera system to help customers line up their hitch, adding some precision and a visual cue to reduce the difficulty of aligning a hitch to a trailer.
- Trailer Tire Pressure Monitoring System: When properly equipped, this optional feature can monitor the tire pressure of the trailer tires using the truck's infotainment system. This system al so allows customers to monitor the temperature of their trailer tires to help prevent blowouts from overheating. Requires optional equipment and dealer installation.

This infotainment app that comes with the available Advanced Trailering System allows customers to track the mileage, fuel economy and transmission temperature of their truck while towing. Customers can create and store up to five profiles, including guests, for different trailer types.

Brake gain memory is part of this system and works with the Integrated Trailer Brake Controller, which provides fingertip control of the trailer brakes, to let the customer set and save the controller's brake gain setting for



Rear cameras make it easy to see what's going on in back of the truck.

each trailer within their profile,

Another industry-first, Trailer Theft Alert, can activate the truck's lights and horn if the harness of the trailer attached to the truck is disconnected3. Customers enrolled in the OnStar Safety & Security Plan will also receive a theft alert via their preferred method of contact: phone, text or email.

The available wireless trailer tire pressure and temperature monitors listed above are also integrated into this system. Four sensors come with the Advanced Trailering System, with more available as accessories. Dealer installation is required.

Not all trucks, even from the same manufacturer, are exactly alike in terms of their capacities to tow and haul. Capability tends to vary widely from truck to truck goes on sale in the fall of 2018.

and can be difficult to calculate, Herrick said. To address this, Chevrolet has created an industry-first trailering label that is located on the driver's side door jamb of all next-generation 2019 Silverado pickups.

This label provides customers with the information they need to calculate their pickup's exact capacities.

This label takes the guesswork out of towing and hauling and is tied to VINs of individual trucks, providing information such as:

- Gross vehicle weight rating.
- · Gross combined weight rat-
- · Gross axle weight rating (rear).
- Maximum payload.
- Maximum tongue weight.
- Curb weight.

The 2019 Chevrolet Silverado

Warren Library Book Club Meeting

The Warren Public Library's Books, Brew & Banter club is meeting at 7:30 p.m. on Tuesday, Aug. 14 at the Falling Down Beer Company, 2270 East 10 Mile in Warren.

"Books, Brew, & Banter is the library's first book club in a brewery. Join us each month to make new friends and enjoy good books, food, drink, and conversation together in a casual atmosphere (discussion will be available but not enforced)," said Warren librarian Jennifer Lund. "Don't forget, even if you hate the book, or don't finish it, come anyway. All are welcome."

This month's book is "A Thousand Acres" by author Jane Smiley. Copies of the book are available at the Miller Branch circulation desk.

To learn more about the program and to register, call 586-751-



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AUGUST 13, 2018 COVERS THE TECH CENTER AND THE IMMEDIATE AREA

a 50-mile ultra-marathon. Just ask Alex Janowski, an apprentice metal model maker for GM. Janowski works in the PPO building located on the Tech Center Campus in Warren. He

turned 25 in July and ran his first ultra-marathon – the Burning River in the Cuyahoga River Valley Corridor outside of Cleveland on July 28. Not bad for someone who just took up running two years ago.

"I wasn't really a runner until relatively recently," Janowski said. "About two years ago I decided to take up marathon running. When I told people what my plans were, I heard a couple of common reactions. The first was. 'Why?' The second was, 'Are you

The reason for deciding to be a long-distance runner is not complicated, Janowski said. He said he saw people who ran marathons and decided that it was something he could do.

"I was never a fast short-distance runner," Janowski said. "But the longer distances you run, the less it is about speed and the more it is about having mental discipline. I saw other people do it and thought why not me, I'm not getting any younger.

"And it's a good way to get into shape. When I ran the ultramarathon, I lost seven pounds. Now some of that is, of course, water weight. But once you pass 25 miles, that's when your body begins to burn its fat reserves and even muscle. So a couple of days before a race, I like to carbo load and eat as much as I can."

His ultra-marathon time was 10 hours and seven minutes, for an average speed of 11 minutes and

Overall, he's run three standard marathons and one ultramarathon

Janowski said getting started in long-distance running wasn't hard. He read some books and talked with other runners. Once he learned the proper stride for him, things fell into place.

"I will say don't cheap out on shoes," Janowski said. "If you're going to run 26 or 50 or 100 miles, you really should be doing it in comfortable shoes designed for that kind of running.

Janowski got his start at GM as a skilled service operator (SSO)

neymen with such tasks as loading tool tables and doing quality checks. In order to pass his apprenticeship he is taking classes in mathematics and draft-

"Next, I'm looking at running a super ultra-marathon," Janowski said. "Those are 100 miles and Michigan has a few during any given year.

"I'm thinking about the Lighthouse 100, which goes from Traverse City to Petoskey. It's held in early July.'

Which again brings up the two questions he hears most often -"Why" and "Are you crazy?"

Job Training Funds Available

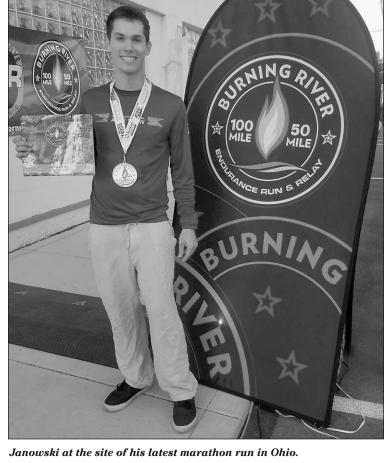
The Macomb/St. Clair Workforce Development Board will host an informational session for Michigan employers on the 2019 Going PRO Talent Fund (GPTF), formerly known as the Skilled Trades Training Fund (STTF). The GPTF is a state-funded program that offers funding for employee training, said Macomb spokesman John Cwikla.

Employers can apply for up to \$1,500 per worker to provide short-term classroom training for skills upgrades, up to \$1,500 per worker to supplement onthe-job training wages for newly hired employees and/or up to \$3,000 per worker for employees enrolled in the first-year of a U.S. Department of Labor Registered Apprenticeship.

Funding requests apply to employees who are at least 18 years of age, a resident of Michigan and employed full time (32-40

hours per week), Cwikla said. The Going PRO Talent Fund informational session will run from 9 a.m. to 11 a.m. on Monday, Aug. 27 at the Robert J. Verkuilen Building, Assembly rooms A and B, 21885 Dunham Road, Clinton Township. Attendance is free, but space is limited. To reserve a seat, visit www.macomb-stclairworks.org/gpreg.

The Macomb/St. Clair Workforce Development Board administers the Michigan Works! Service System in Macomb and St. Clair counties. Michigan Works! is part of the nationwide American Job Centers Network. Michigan Works! agencies oversee comprehensive services designed to help employers access a skilled workforce and help job seekers access satisfying careers. Programs also include workshops to help youth and unskilled adults gain job skills.



'Meals' Volunteers Needed

Macomb Community Action's Office of Senior Services is seeking volunteers to help with a special delivery for the Meals on Wheels program on Saturday. Sept. 8. This one time delivery opportunity will provide seniors in need with shelf-stable meals for times when unsafe weather or other emergency circumstances prevent the normal delivery of hot meals in Macomb County, said Macomb spokesman John Cwikla.

Volunteers are needed to help pack or deliver boxes between 9 a.m. and 11 a.m. at the Macomb County warehouse, located on 44900 Vic Wertz Drive, south of Hall Road and east of Groesbeck.

All volunteers must be at least 18 years of age. They must also pass a background check. Those interested in delivering meals should plan to use their own vehicle and will be on the road for an estimated two hours. Delivery drivers must have a valid driver's license and proof of current

To volunteer, contact Macomb Community Action Office of Senior Services at 586-469-5228.







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Gasoline Savings Just an App Away

Who doesn't like to save money at the gas pump?

With road trip season in full swing, Buick and ExxonMobil are debuting a new way to bring simplicity and savings to the pump, said GM spokesman Stefan Cross.

A new update to Marketplace, the industry's first in-vehicle commerce platform, brings ExxonMobil's pay-for-fuel functionality right to the infotainment screen of eligible Buick vehicles,

The service allows drivers to pay for fuel from their vehicle without swiping their credit card or using their smartphone. The platform also automatically syncs drivers to their ExxonMobil Speedpass+ app account, and drivers accumulate rewards points with each purchase.

The new service is available at more than 11,000 Exxon or Mobil stations across the United States.

"Our goal with Marketplace is to help make everyday tasks as easy as possible for our customers so they can focus on enjoying time spent in their vehicles," said Rick Ruskin, Buick's Marketplace Line of Business leader.

"Bringing the ExxonMobil payfor-fuel functionality right on the touchscreen of our vehicles is the latest advancement of this platform, allowing drivers to easily access Speedpass+ and securely pay for gas while inside their car."

This service is ExxonMobil's first fully embedded in-vehicle fuel payment offering and requires fewer steps than other fuel payment features on the market. Ruskin siad.

To use the platform to pay at the pump, users will first press the ExxonMobil icon within Marketplace, which identifies the station location. The driver will be prompted to select the pump number and confirm their payment method. The pump will be activated and they can start fuel-

If drivers don't have an Exxon



Exxon and Buick have teamed up to save consumers money on gas.

Mobil Speedpass+ app account, they can automatically enroll at no extra cost through Marketplace, Cross said.

The ability to securely pay for fuel and locate the nearest Exxon or Mobil station are all functions of the Marketplace platform.

"ExxonMobil continuously looks for opportunities to better serve its customers," said Devin Miller, Exxon Mobil Americas' digital app development manager. "We rolled out mobile payment options to our U.S. network in 2015, and we are continuing to innovate and simplify our consumer experience by partnering with General Mo-

Marketplace and this new ExxonMobil functionality are examples of the Buick brand's dedication to saving time and promoting well-being for its customers, Cross said.

Buick continues to earn accolades for its customer experience, and every vehicle is developed with Buick's signature QuietTuning process to bring peace and quiet to every drive, Cross said.

All Buick SUVs and sedans come standard with capless gas tanks, allowing drivers to fill up and get back on the road quickly, and all Buick SUVs come with available in-vehicle ionizers to help improve air quality.

BorgWarner's Clean Tech

Developed for hybrid electric cy and significantly improves vehicles (HEVs) and plug-in hybrid electric vehicles (PHEVs), BorgWarner's innovative Exhaust Heat Recovery System (EHRS) will enter production later this year for vehicles from a major North American automak-

By using the heat from exhaust gas, which would normally be diverted through the exhaust pipes and wasted, the company's technology reduces engine warm-up time, enhances efficienfuel economy and reduces emissions, said BorgWarner spokes-man Christoph Helfenbein.

This cost-effective solution offers compact packaging, low weight and can easily be integrated into existing vehicles, Helfenbein said.

"Until a cold engine reaches its optimal operating temperature, it is much less fuel-efficient and generates higher emissions, which is one of the challenges to master for upcoming emissions regulations," said Joe Fadool, president and general manager, BorgWarner Emissions & Thermal Systems.

"Our EHRS minimizes engine heat-up time, helping automakers around the globe meet new and more stringent regulations.

"With the EHRS, BorgWarner serves the growing demand for highly efficient solutions to reduce emissions and strengthens its position as a leading supplier of clean technologies.'

Combining an exhaust gas recirculation (EGR) system with a waste heat recovery system (WHRS), BorgWarner leverages its vast experience in heat transfer and exhaust gas technologies, such as EGR coolers and valves, enabling the company to offer a superior solution, Fadool said.

The EHRS reduces mechanical losses by using the energy conserved within the exhaust gas.

During engine cold starts, a valve controls the exhaust gas flow, routing it through a heat exchanger, where the thermal energy of the gas heats up the vehicle's subsystem fluids.

As a result, the engine warms up faster, reducing emissions and improving fuel efficiency, Fadool said.

BorgWarner's low-pressure EGR valve precisely controls the temperatures in the combustion chamber, improving engine efficiency and combustion tim-

In addition, the technology reduces carbon monoxide (CO) and nitrogen oxide (NOx) emissions, as well as particulate matter (PM), Fadool said.





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Corvette Museum Seeks Classic 'Vettes to Display

BOWLING GREEN, Ky. (AP) – The curator of the National Corvette Museum wants to expand its collection beyond the titular car in order to better tell its story.

Derek Moore tells the *Bowling Green Daily News* the museum has done "a good job telling the Corvette-centric story" since opening in 1994, but it's time to delve into the impact the popular sports car has had.

Moore has put out a call for donations of classic automobiles like 1950s-era Ford Thunderbirds and early American sports cars like the Stutz Bearcat and the Nash-Healey.

He says these non-Corvettes have played a role in the evolution of the Corvette by providing competition.

He's also looking for other models manufactured at the Corvette plant in Bowling Green, like the Cadillac XLR.

The museum typically has around 80 cars on display. Some of the Corvettes on display include those damaged when a sinkhole opened up in March of 2014.

As a result of the sinkhole, a total of eight classic Corvettes fell through the floor of the museum and suffered damage ranging from mild to severe.

After restoration efforts, seven of the eight cars are back on display in about the same spot where they plunged to fame. Five were too beaten up for repairs.

Museum spokeswoman Katie Frassinelli said that the sinkhole and the damage caused has become a part of the museum's history. And the vehicles that were unable to be fully restored have become a part of the sinkhole story as well.

Students Learn About AV Technology at MCC

CONTINUED FROM PAGE 1

have sessions on programming, security, networking, Web development and game design."

County, is to expose high school students to IT fields of study. So the teachers, all from MCC, expose students to different IT fields. So we have sessions on programming, security, networking, Web development and game design."

After attending the different sessions, the students are then given a "Go Pi Go" motherboard, Banta said. A motherboard is the main printed circuit board (PCB) found in general purpose microcomputers and other expandable systems.

The board is made by Dexter, a U.S. company that makes motherboards for educational purpos-

"Interesting fact," Banta said.
"The motherboard is called a
Raspberry Pi board. Pi from the
mathematical number 3.1415.
Raspberry to continue the tradition of naming computers after
fruit. Look at Apple. Anyway, the
students are given the Raspberry
Pi boards and they then have to
program the boards and attach
them to small robot cars. The
cars then have to complete tasks
such as going around objects or
navigating an obstacle course."

The students created the autonomous vehicles on Aug. 9. Banta said they were given about two hours to complete the task.

"The project is supposed to be fun," Banta said. "The project is designed so that students use knowledge from the different sessions to make a miniature autonomous vehicle. It's a lot of fun and shows them how abstract knowledge can be turned into working, practical devices."

Patricia Wirth, Public Relations



From left, Wirebaugh, Banta and Mansour hold up a student-built robot car at MCC's Go Pi Go event.

coordinator at MCC, said faculty at the school believe in the idea of promoting interest in IT fields, which is why they volunteered their time. Schools students came from included Mott, Center Line, Fitzgerald, Tower and Lincoln high schools.

Banta said that one thing that is different about the Go Pi Go course is that the students come from different high schools and are mixed together.

"We have students who have never met each other until this course have to get together and work together," Banta said. "Being able to collaborate with people you don't know is a vital skill and we want to teach that."

Steven Stempnik of Warren's Mott High School, and Devon White of L'Anse Creuse North

were among the students who never met but had to work together to complete their assignment. Their robot car was named R2-D2 and they were able to get their vehicle up and running within the time given for the task.

Mikaela Mansour will be starting her senior year at Tower High School in Warren next month. She said she decided to go back to school during the summer because she wanted to take advantage of the opportunity to try something new.

"I don't have a lot of experience in IT," Mansour said. "I have a familiarity with computers, but I want to learn from experts in this field. I liked what I learned but I can't say that I will study this further."

Ryan Wirebaugh will be start-

ing his senior year at Mott High School in Warren.

"I came here because I wanted to learn more about computer software," Wirebaugh. "Last year I finished building my own computer from parts from the store Microcenter. I also have taken apart and put back together my friends' old computers and got them working. But this is a chance to learn the software side of things."

Wirebaugh said he is very interested in studying computer engineering once he goes to college, and a summer session like Go Pi Go is right up his alley.

"I have to say that my favorite part of this week is hard to say," Wirebaugh said. "There are so many interesting parts, but I would pick either programming or game design."



Ford Creates New Company to Develop Autonomous Tech

LLC, a new organization charged with accelerating its AV business to capitalize on market opportunities.

The company also has released detailed key organizational changes designed to improve its operational fitness and drive profitable growth, said Ford spokesman Alan Hall.

The company is organizing its self-driving business into Ford Autonomous Vehicles, which will include Ford's self-driving systems integration, autonomous vehicle research and advanced engineering, AV transportationas-a-service network development, user experience, business strategy and business development teams, Hall said.

The new LLC, which is structured to take on third-party investment, will be primarily based at Ford's Corktown campus in Detroit and will hold Ford's ownership stake in Argo AI, the company's Pittsburgh-based partner for self-driving system development. Ford expects to invest \$4 billion in its AV efforts through 2023, including its \$1 billion investment in Argo AI.

Sherif Marakby, currently Ford vice president, Autonomous Vehicles and Electrification, was appointed CEO of Ford Autonomous Vehicles reporting to a board of directors chaired by Marcy Klevorn, Ford's executive vice president and president of Mobility, Hall said.

The closer alignment of the self-driving platform and the mobility solutions teams will allow faster development of businesses that can thrive in the pre- and post-autonomous vehicle worlds, Hall said.

"Ford has made tremendous progress across the self-driving

Ford Motor Company has cre-value chain - from technology ated Ford Autonomous Vehicles development to business model innovation to user experience," said Jim Hackett, Ford president and CEO.

"Now is the right time to consolidate our autonomous driving platform into one team to best position the business for the opportunities ahead."

With Marakby's move, Ted Cannis, global director, Electrification, will lead Ford's Team Edison, the team responsible for developing and bringing to market next-generation electric vehicles, Hall said.

Team Edison will continue to report to Jim Farley, executive vice president and president, Global Markets.

Ford's electric vehicle strategy includes rethinking the ownership experience for drivers, including making charging an effortless experience at home and on the road, as well as offering full-vehicle over-the-air software updates to enhance capability and features.

In addition, Ford is reorganizing its Global Operations division led by Executive Vice President Joe Hinrichs to include Information Technology as well as the company's global order-todelivery system, integrating the teams, technologies and processes from both across Ford's production system.

As a result, Jeff Lemmer, vice president and CIO, will report to Hinrichs

This realignment is designed to help the company accelerate the integration and application of technology across its industrial system to further streamline manufacturing, speed vehicle delivery times, reduce inventories and improve capital efficiency, Hall said.

"The evolution of computing

power and IT have helped bring great products to customers from cars to tablets," Hackett said.

"We can now harness this technology to unlock a new world of vehicle personalization, supply chain choreography and inventory leanness that rivals any industrial model in the world - and Joe's challenge is to help us redesign this system to do just that – while better serving customers and dealers and improving our overall fitness.'

Hau Thai-Tang, executive vice president, Product Development and Purchasing, will now report directly to Hackett. The move ensures these critical functions have an even stronger voice as the company creates a winning portfolio of products, Hall said.

Under Thai-Tang, Ford is moving to flexible vehicle architectures and more common parts across models, cutting new product development time - from sketch to dealer showroom - by 20 percent, Hall said.

This is helping Ford achieve its commitment to deliver nearly \$7 billion of engineering efficiencies, Hackett said.

The company made these moves as part of its intention to have the most efficient Product organization Development among full-line automakers within the next five years.

Ford's five flexible vehicle architectures - body-on-frame, front-wheel-drive unibody, rearwheel-drive unibody, commercial van unibody and BEV - are paired with module "families" that address the power pack, electrical pack and vehicle configurations.

Seventy percent of each vehicle's engineering will be driven from this new architecture approach, with 30 percent of conFORD AUTONOMOUS VEHICLES LLC MONETIZATION CAPABILITIES AV LLC Research & Engineering Transportation-as-a-service Platform **UX** Design FLEET

This is how Ford's new AV company will be structured.

tent - including grilles, hoods, doors and more - customized for each vehicle, Hall said.

All of these organization changes are effective Aug. 1. Additionally, Ford is embedding a deeper product-line focus across the company.

Led by Jim Farley, the effort is anchored on human-centered design with product-line teams putting greater emphasis on customer insights and market opportunities to deliver more consumer-driven products and services, Hall said.

This customer-focused product-line approach builds on the success already seen throughout Ford with the F-Series team in North America, the Ranger team in Asia Pacific and the Commercial Vehicle team in Europe, Hall

By 2020, Ford will offer North America's freshest lineup among all full-line automakers, with its average redesign time dropping from 5.7 to 3.3 years as it replaces three-quarters of its lineup and adds four new trucks and SUVs, Hackett said.

Ford has similarly aggressive product refresh plans in other regions, including Europe and Asia, Hackett said.

"We're looking at every part of our business, making it more fit and ensuring that every action we take is driven by what will serve our customers in a way that supports our fitness and performance goals," Hackett



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Book by Cadillac Program Named as 'Elite' Service



Book by Cadillac a winner.

Cadillac has found itself in some very expensive company. Elite Traveler, a private jet lifestyle magazine has announced their "Top Cars in the World" collection 2018, said magazine spokesman Will Grice.

The list presents an alluring mixture of the 14 best vehicles from the automobile industry this year, and Cadillac's "Book by Cadillac" car subscription service made the

The cars chosen by Elite Traveler range spans from weekend-getaway cars and pure indulgence purchases to general practical everyday cars, Grice said.

"The choice of each luxury car featured in the list is made by our resident car expert Alexandra Cheney, a well-respected motoring journalist," Grice said.

"Cheney made the choices based on each car's technology, performance and comfort, using titles such as 'Best Grand Tourer,' 'Best Practical Accessory,' and 'Best Hybrid Sports Car' to ensure we offered only the best cars in the world to readers."

In her article, Cheney wrote that the "commitment of leasing, financing or buying has always gone hand-in-hand with securing a

"Headaches, second-guesses and regret often ensue. To alleviate those symptoms, Cadillac has created Book, an app-enabled ondemand subscription service that offers you the ability to go between five vehicles, which include the Escalade, CTS-V sedan, CT6, ATS-V coupe or XT5 crossover.

"Vehicles are delivered and retrieved via white-glove service. There is no mileage restriction, and registration, taxes and insurance are all covered in the flat monthly fee of \$1,500.

"Although Porsche and Volvo also have subscription programs, Passport and Care by Volvo, respectively, an Edmunds analysis found that Book could cost less than a textbook lease, depending on the make and model, and you can change your car to suit your mood.

"Cars can be lent for up to 30 consecutive days and exchanged up to 18 times per year.'

Making the list was something of an accomplishment, Grice said. The other vehicles are:

- The Aston Martin Vantage, which costs \$170,000.
- The Maserati Gran Turismo,
- which costs \$134,000. The Porsche 911 GT3,
- \$143,000. Ferrari Portofino, The
- \$211,000. • The Range Rover SVAutobi-
- ography, \$207,000. • The Jaguar F-Pace SVR,
- The Lamborghini Aventador S Roadster, \$460,000.
- The Rolls-Royce Phantom which starts \$450,000, with the extended wheelbase version costing \$530,000.
- The Bentley Continental Supersports Convertible, \$322,000.
- The BMW i8 Roadster, \$163,000.
- The McLaren BP23, \$1.7 million.
- The Lexus LC500, \$92,000.
- Mercedes-Mayback S650, \$199,000.



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Tariffs Adding to OEM Costs CONTINUED FROM PAGE 1 clude small businesses

executive Timothy Fiore said in a statement.

The U.S. has imposed tariffs of up to 25 percent on thousands of goods, including raw metals and finished products from China, Mexico, Canada, India and the European na-

Those countries have retaliated with tariffs of their own on U.S. products ranging from agricultural products to boats.

The ISM said some of its members have said orders from China had fallen, that steel had become more expensive and that companies have had to take on extra inventory, an added cost, in hope of avoiding pricier raw materials.

Quarterly earnings reports from Fortune 500 companies showed that they were contending with fallout from the tariffs. Ford Motor Co. said its commodities costs rose by about \$300 million during the second quarter.

Smaller companies' earnings are also vulnerable - they pay proportionately higher prices than large corporations because they're less able to buy in bulk, and they have proportionately less revenue to absorb the price increases.

Other big companies - including General Motors and Harley-Davidson - have reported that their costs are up sharply because of the tariffs.

The U.S. Commerce Department's initial estimate of secondquarter economic growth revealed the impact the trade dis-

pute has had on farms, which intheir makeup.

While the department said the economy grew at an annual rate of 4.1 percent from April through June, that figure was bloated by soaring soybean exports

Farmers stepped up their sales of soybeans to China, hoping to avoid retaliatory tariffs that country imposed on U.S.

GM Requests A Break From U.S. Government

DETROIT (AP) - General Motors wants the U.S. government to exempt an SUV made in China from a 25 percent tariff imposed by the Trump adminis-

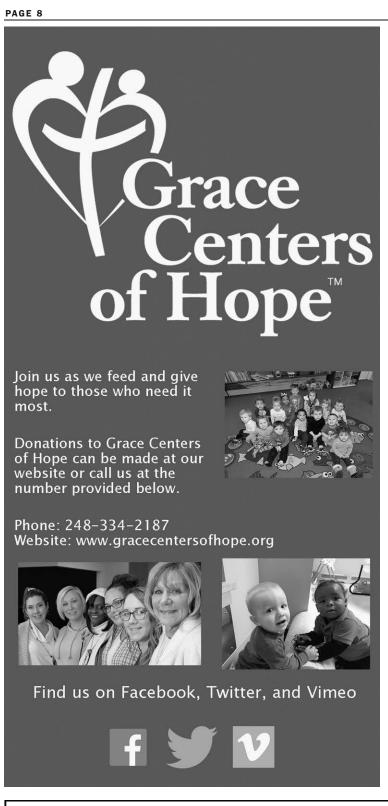
The automaker filed a request last month with the U.S. Trade Representative to exempt the Buick Envision, a midsize SUV with a starting price around \$32,000.

If granted, the SUV would be kept out of a growing trade war with China.

GM President Dan Ammann said the Envision is a big seller in China but has relatively low sales in the U.S.

He said the only way GM can sell it in the U.S. is to build it overseas. He said profits from the SUV are reinvested in the

General Motors sold about 41,000 Envisions in the U.S. last year, while sales in China hit almost 211,000.



Japanese OEMs Admit to Faking Emissions Data

TOKYO (AP) – Japanese automakers Suzuki Motor Corp., Mazda Motor Corp. and Yamaha Motor Co. have admitted using falsified emissions data to inspect their new vehicles after the government ordered the industry to review its procedures.

Japan's transport ministry said Aug. 9 the three automakers admitted conducting improper inspections after 23 Japanese auto and motorbike manufacturers were ordered to examine their inspection procedures in July following similar mishandlings being found at Nissan and Subaru in their fuel economy data at final product quality checks.

The three companies said they certified products that tested unsuccessfully.

Suzuki said nearly half of its 12,819 new car inspections involved improper inspections at its three plants. Improper inspections happened less often at the other two – 2.1 percent of 335 motorbikes inspected in the last two years at Yamaha and 3.8 percent of 1,875 vehicles inspected at Mazda over the past four years, the ministry said in a statement.

Results at Japanese affiliates of three foreign automakers – Audi AG, Volkswagen AG and Volvo Cars – were pending, while no irregularities were reported by the remaining 17 companies, the ministry said.

"Mishandlings found in so many vehicles were a serious problem, and we take it very seriously," Suzuki Motor president Toshihiro Suzuki told a news conference, and apologized to the company's customers and business partners for causing trouble

Ford Launching a Major Financial Restructuring

DETROIT (AP) – Ford Motor Co. said July 25 it is in the midst of a major restructuring of the company that will cost \$7 billion in cash and hit pretax earnings by \$11 billion over the next three to five years.

But the company, which also reported a 48 percent second-quarter net profit decline, gave few details on what exactly will be cut or changed, bringing criticism and frustration from Wall Street analysts.

The company canceled its annual presentation for investors scheduled for September because the restructuring is still in progress, but said it would give updates on quarterly earnings calls and in other ways.

The lack of specifics brought criticism from Morgan Stanley analyst Adam Jonas, who encouraged CEO Jim Hackett to communicate more details.

"You're kind of almost teasing the market with these very large numbers," Jonas said, telling the company to present the plans "in a narrative that can be understood."

Jonas even asked if Hackett would still be CEO by the time the investor meeting is rescheduled. Hackett replied that he's proud of the management team and the progress Ford has made, and that he will be in charge on that date.

Chief Financial Officer Bob Shanks said such a major redesign of the company will take time with many parties involved, and pledged to share actions as they're completed.

He noted that Ford is looking to allocate capital spending to high-performing areas and that the company wants to get away from low-performing segments that don't produce much profit.

Ford blamed slumping China sales and a fire at a U.S. parts factory that cut production of lucrative pickup trucks for the profit decline from between the months of April and June.

The company still made \$1.1 billion, or 27 cents per share. But that fell short of analysts' expectations of 31 cents, according to FactSet.

China sales slumped due to an aging product line, and as a result of this, the company's joint venture in China lost \$483 million

The fire knocked out production of highly profitable F-Series year pickup trucks for a little over a ed.

week in May. Ford said at the time it had enough inventory so that sales wouldn't take a big hit.

Troubles in China as well as Europe caused the company to cut its full-year guidance to \$1.30 to \$1.50 per share. It had been \$1.45 to \$1.70.

Revenue was \$38.92 billion, also short of expectations. Analysts expected \$39.14 billion.

The company said it's taking "urgent action" in China to fix the business, including cost cuts, building more vehicles in China and recruiting more local talent for top positions.

Ford says it's also rolling out revamped vehicles with 60 percent of its lineup being refreshed or new by the end of next year.

Ford warned in May that the fire at Meridian Magnesium Products in Michigan would have a short-term impact on the company's earnings.

The plant makes front-end parts for Ford pickups and big SUVs. The ensuing parts shortage forced Ford to lay off about 7,600 workers at two truck factories for about a week. But the company went to great lengths to resume production of SUVs, even flying equipment from the U.S. to a Meridian factory in Europe.

Ford's sales dropped in the U.S. by 0.8 percent during the quarter as sedan sales slumped.

Not all the news for Ford is

Ford's sales numbers indicate that the company is doing very well in the profitable pickup truck segment.

Sales of Ford F-Series, the best-selling truck in the U.S. market, are up 2.1 percent, with average transaction pricing continuing to grow – up \$1,500 per truck. At \$46,500, transaction pricing is \$2,600 above segment average due to demand for high series trucks.

And Ford is also doing well in the SUV market segment. In July Ford Explorer sales increased 7.9 percent, with 20,243 SUVs sold.

The month also marked the 15th straight month of year-over-year sales gains for the F-Series pickup truck line.

Although it sold 236,000 F-Series pickups during the quarter and is on a record sales pace, the company's North American pretax profit of \$1.8 billion was \$600 million less than a year earlier, the company report-

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Ford Using Motion Capture

CONTINUED FROM PAGE 1

or turn, enabling sport coaches or game developers to unlock the potential of sports stars in the real world or on screen, Enoch said.

Ford is using it to design less physically stressful workstations for enhanced manufacturing quality.

"It's been proven on the sports field that with motion tracking technology, tiny adjustments to the way you move can have a huge benefit," said Javier Gisbert, production area manager at Ford Valencia Engine Assembly Plant.

"For our employees, changes made to work areas using similar technology can ultimately ensure that, even on a long day, they are able to work comfortably."

Engineers took inspiration from a suit they saw at a trade fair that demonstrated how robots could replicate human movement and then applied it to their workplace, where production of the new Ford Transit Connect and 2.0-litre EcoBoost Duratec engines began this month, Enoch said.

The skin-tight suit consists of 15 tiny movement-tracking light sensors connected to a wireless detection unit.

The system tracks how the person moves at work, highlighting head, neck, shoulder and limb movements. Movement is recorded by four specialized motion-tracking cameras – similar to those usually paired with computer game consoles – placed near the worker and captured as a 3D skeletal character animation of the user.

Specially trained ergonomists then use the data to help employees align their posture correctly. Measurements captured by the system, such as an employee's height or arm length, are used to design workstations, so they better fit employees.

Ford is now considering further rollout to its other European manufacturing facilities, Enoch

It is part of Ford's work – under way since 2003 – to reduce the injury rate for its employees worldwide through the introduction of ergonomics technologies and data-driven process changes, said Enoch.

Detroit OEMs Face Fuel Economy Issues

by TOM KRISHER AP Auto Writer

DETROIT (AP) - For all the drama surrounding the Trump administration's attempt to undo Obama-era fuel economy requirements, automakers are likely to stick to them until they get some answers.

unveiled plans to freeze the requirements at 2020 levels through 2026, after which they will be revisited. That means the fleet of new vehicles would have to average about 30 miles per gallon in real-world driving from 2020 through the next six years. The previous fuel standards under President Barack Obama required about 37 mpg by 2025.

But much remains in flux. The Trump administration likely will challenge California's ability to set its own stricter standards that now match the ones under Obama, and depending on who wins, the U.S. could wind up with two gas mileage standards.

It could take years for courts to settle the dispute, or both sides could negotiate one standard. There's also the looming 2020 presidential election, which could upend the requirements again if a Democrat takes over.

In the meantime, automakers aren't sure what requirements they will have to meet in 2021, so most are proceeding as if the Obama-era requirements won't change. They're continuing to develop more efficient vehicles including electrics and hybrids.

We'd like to get clarity as soon as we can," General Motors President Dan Ammann said Aug. 3 on the sidelines of a cybersecurity conference in Detroit. "We'd be very much behind one national standard that we can work to plan, to deploy capital against.'

The government will take comments on the proposal to freeze requirements and some other options, including leaving the previous fuel standards in place. A decision is expected by early next year.

makers in saying that his company will continue to develop electric and gas-electric hybrids. Most are looking for relief from the Obama-era standards that could prompt fines for non-compliance because people are buying less-efficient trucks and SU-Vs in record numbers.

Some, like Toyota, say they'll The administration on Aug. 2 go for standards that increase over time and "encourage new technologies in the marketplace and account for today's market realities."

> "We'd like to get clarity as soon as we can."

- Dan Ammann, **GM President**

Thirteen states now follow California's requirements. If they force two standards, that will drive the automakers' engineering and manufacturing costs to build two versions of each vehi-

"Manufacturers really have to assume that the California regulations will stand," said Navigant Research analyst Sam Abuelsamid.

Trump administration The could freeze standards for the rest of the nation while the court fight rages. If that happens, Abuelsamid sees automakers marketing trucks and SUVs heavily in states that don't follow California.

Even if the federal government ultimately wins, the Ŭ.S. will still get most of the same vehicles as the rest of the world because automakers have to comply with standards that already are stricter in China, Japan and the European Union, analysts say. Companies want to sell the same vehicle in as many places as possible to spread out development costs and make more money.

"As global automakers, they Ammann mirrors other auto- will continue to develop high-efficiency clean technology," said Rebecca Lindland, an analyst for Kelley Blue Book. Still, hybrid and electric vehicles are a tough sell in the U.S. now, where combined they make up less than 4 percent of the market, she said.

If the requirements are relaxed in the U.S., the country likely will see less-efficient engines and transmissions than automakers sell in the rest of the world, Lindland said.

Congress passed the first fuel economy standards in 1975 after a 1973 oil embargo dramatically raised gas prices.

Fuel efficiency for cars had to rise to 27.5 miles per gallon by 1985 under less-accurate gas mileage tests in place at the time, according to the Union of Concerned Scientists.

They stayed stagnant until 2007, when they were raised to 35 mpg by 2020, combined for cars and trucks.

In 2010, more stringent standards were approved under the Obama administration that raised the combined mileage to 34.1 mpg by 2016, still under the old testing system. California accepted those federal standards as the state's own.

The requirements were again raised in 2012 so the fleet of new cars would reach 54.5 mpg in the 2025 model year. (That's equal to about 37 mpg under newer, more realistic EPA tests.) It's those standards that the Trump administration wants to freeze, contending they are unreason-

Abuelsamid said it's unlikely that the industry would have raised gas mileage as much as it has in the United States without the government intervention in the marketplace.

"I can't see that consumers here would have demanded that kind of efficiency," he said.



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Toyota Profit Jumps to \$5.9B

TOKYO (AP) - Toyota Motor Corp. logged a better than expected performance in the last quarter, reporting Aug. 3 that its quarterly profit jumped 7.2 percent to a record 657.3 billion yen (\$5.9 billion), thanks to strong sales in the U.S. and other overseas markets.

The automaker said sales rose 4.5 percent, also to a record, of 7.4 trillion yen (\$66 billion).

Toyota's profit in the same quarter a year earlier was 613.0 billion yen.

The results were better than expected given recent trends in the U.S. market and Japan, where Toyota's sales did fall in the April-June quarter, by almost 34,000 units.

Cost cutting also helped trim 60 billion yen (\$537 million) from expenses, the company said in a statement.

With uncertainties over possible U.S. tariff increases clouding the horizon, the company kept its profit forecast for the full year unchanged at 2.12 trillion ven (\$66 billion) and trimmed its global sales forecast further, to 8.9 million vehicles from the earlier estimated 8.95 million units.

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Study Shows AV Tech Won't **Displace Drivers Just Yet**

Despite concerns that a rise in automated vehicles (AVs) will displace significant numbers of truck drivers in the United States, only a modest number of truck driver jobs, if any, will be affected, according to a new report commissioned by the American Center for Mobility (ACM), led by Michigan State University (MSU) and supported by Texas A&M Transportation Institute (TTI).

However, while significant numbers of AVs will not be deployed until the latter half of the 2020s, at that point, some displacement of passenger carbased driving jobs could occur, mainly among taxicab drivers, according to researchers whp worked on the study for MS and ACM, said ACM spokesman Tracey Shavers, Jr.

Due to existing truck driver worker shortages, and the belief that automated technology will largely support truck drivers instead of replacing them, truck drivers are not likely to be displaced in large numbers during the next 10 years that the study covered, Shavers said.

Also, limousine and bus/transit drivers who are executing services that necessitate face-toface interaction or passenger assistance, such as luxury services. and paratransit, are less likely to be displaced by automated vehicles in the foreseeable future, at least according to the ACM re-

These drivers will most likely in the future undergo training to learn how to use the new supportive driving technology, Shavers said.

"Automated vehicle technology could incorrectly be viewed as a change that will eliminate

driving jobs; however, the more nuanced assessment is that over the next decade the innovation will foster broader societal changes resulting in shifts in the workplace and workforce demands," said Shelia Cotten, MSU Foundation professor at Michigan State University, who led the research.

"Additionally, this level of advanced technology has the potential to lead to the creation of thousands of new jobs in the engineering, data analysis, cybersecurity and vehicle 'monitoring' areas. Based on data collected from industry experts during the study, there is already a significant demand in several of these areas related to AVs."

Shavers said the ACM report indicates that AV technology just won't happen overnight. Adoption of AV systems will take time and training as people and companies get used to the tech and how it can best be used.

"The results of the report indicate substantial and multifaceted education and training efforts will be needed to transition the workforce and public for automated vehicles," said Soraya Kim, Chief Innovation officer for ACM. "We are working with academic and industry partners to facilitate the adoption of new skillsets that the workforce will need in the future.'

"In the near-term," Christopher Poe, assistant director for Connected and Automated Transportation Strategy, TTI, "there is great potential for these technologies to assist commercial drivers in safely operating trucks. Longer-term, it will be important to define, develop, and deliver targeted training for the workforce.'

Catch the Tech Center News

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Ford recently celebrated the making of 10 million Mustangs at the company's Flat Rock assembly plant.

10 Million Mustang Fans Can't Be Wrong

Ten million strong and count-

Ford is celebrating the production of its 10 millionth Mustang -America's best-selling sports car of the last 50 years and the world's best-selling sports car three years straight, said Ford spokesman Jiyan Cadiz.

The 10 millionth Ford Mustang is a high-tech, 460-horsepower 2019 Wimbledon White GT V8 six-speed manual convertible equipped with the latest driver assist technology and built at Ford's Flat Rock Assembly Plant in Michigan on Aug. 8. The first serialized Mustang (VIN 001) produced in 1964 was the same color and model with a threespeed manual transmission and 164 horsepower V8, Cadiz said.

"Mustang is the heart and soul of this company and a favorite around the world," said Jim Farley, Ford's president of Global Markets.

"I get the same thrill seeing a Mustang roll down a street in Detroit, London or Beijing that I felt when I bought my first car - a 1966 Mustang coupe that I drove across the country as a teenager. Mustang is a smile-maker in any language.'

Ford celebrated the milestone with employee celebrations at its Dearborn headquarters and its Flat Rock Assembly Plant, including flyovers from three WWII-era P-51 Mustang fighter planes and Mustangs produced for more than five decades parading from Dearborn to Flat Rock, where the Mustang currently is manufactured.

During its 54-year production history, Mustang also was built in San Jose, Calif., Metuchen, N.J., and the original Mustang production facility in Dearborn, Cadiz said.

Mustang is America's best-selling sports car over the last 50 years, based on Ford analysis of 1966-2018 total U.S. new vehicle cumulative registrations for all sports car segments supplied by IHS Markit, Cadiz said.

And Ford hasn't forgotten what has always made the Mustang great.

The latest Ford Mustang offers more technology, exhilarating performance and more personalization than ever, he said.

All 5.0-liter V8 2019 Mustangs with manual transmissions offer rev-matching downshifts to the six-speed Mustang GT, while EcoBoost gets an optional quadtip fully active exhaust, Cadiz said.

The Ford Mustang is now in its sixth generation. In addition to its sales leadership, the Mustang page has more likes on Facebook than any other vehicle nameplate, Cadiz said.

Important Mustang Launches (by model year):

- 2019 Limited-edition Mustang Bullitt with 480 horse power.
- 2018 Updated style, new 5.0liter V8 engine with 460 horsepower and Performance Pack II.
- 2015 New sixth-generation Mustang, first with independent rear suspension and Shelby GT350 / GT350R with flat-plane crank 5.2-liter.
- 2012 First Boss 302 since 1971 returns with 444 horse power V8
- 2011 New 412-horsepower 5.0-liter V8 Mustang GT debuts
- 2008 Iconic Bullitt Mustang returns.
- California • 2007 Special edition returns.
- 2004 Dearborn Assembly Plant ends 40 years of Mustang production as output moves to Flat Rock Assembly Plant in Flat Rock.
- 2003 Mustang Mach 1 model returns with Ram-Air "Shaker" hood scoop.
- 2001 Debut of Mustang Bullitt limited-edition salute to movie car.
- 2000 SVT Mustang Cobra "R" race version returns.
- 1993 Limited production SVT Mustang Cobra debuts.
- 1984 Mustang SVO debuts.
- 1982 Mustang GT returns after 12-year absence.
- 1979 Euro-styled "Fox" platform Mustang debuts. 1976 Cobra II joins the lineup.
- 1974 Mustang II debuts amid gas crisis; no V8 engine offered until 1975.
- 1970 Ram-Air "Shaker" hood offered.
- High-performance 1969 Boss 302 and Boss 429 introduced.
- 1968 Mustang 390 GT stars with Steve McOueen in "Bullitt"; 428 Cobra Jet engine debuts.
- 1965 Shelby GT350 intro-Mustang duced. 2+2 with full fastback roof de-

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DECEMBER 8, 2014

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contact News Dept

Our classic tabloid format fits most of today's mobile device screen resolutions. The scrollable pdf is viewable on tablet or smartphone.

TechCenterNews.com

Lear to Pay Out Quarterly Dividend

plier of automotive seating and electrical systems, will be paying out a quarterly dividend.

The company's Board of Directors on Aug. 8 declared a quarterly cash dividend of \$0.70 per share on the company's common stock.

The dividend is payable on Sept. 18, to shareholders of record at the close of business on Aug. 30, said Lear spokesman Joel Elsesser.

Lear Corporation was founded in Detroit in 1917 as American Metal Products, Elsesser said. Today, Lear is one of the world's

Lear Corporation, a global sup- leading suppliers of automotive seating systems and electrical systems (E-Systems).

> Lear serves every major automaker in the world, and Lear content can be found on more than 400 vehicle nameplates, Elsesser said.

> Lear's products are designed, engineered and manufactured by a diverse team of approximately 165,000 employees located in 39 countries. Elsesser said.

Lear currently ranks number 148 on the Fortune 500.

The company's world headquarters are in Southfield, Elsesser said.



SUMMER Won't Last Forever... and Neither Will These **DEALS!**

2018 EQUINOX "LT"



Sale Price: \$23,599* Was \$27,860

- Color Touch Screen Radio!
- Keyless Entry and Start!
- Rear Vision Camera!
- Aluminum Wheels!
- Power Driver's Seat!
- Bluetooth for Phone! Stock# 2J3952

24 MONTH LEASE

NO Employee Discount REOUIRED!

\$999 Down

NO Security Deposit required. Tax, title and plate fees extra

2018 CRUZE "LT"



- Color Touch Screen Radio!
- Remote Keyless Entry and Start!
- Rear Vision Camera!
- Power Driver's Seat!
- Aluminum Wheels!
- Bluetooth for Phone! Stock#J42582

24 MONTH LEASE

Was \$23,475 Sale Price: \$17,299*

\$999 Down equired. Tax, title and plate fees extra NO Security Deposit red



2018 MALIBU "LT"



- Color Touch Screen Radio!
- Remote Keyless Entry and Start!
 Rear Vision Camera!
- USB Charging Port! Aluminum Wheels!
- Bluetooth for Phone! Stock# J43556

24 MONTH LEASE

Was \$27,150

Sale Price: \$20,799*

\$999 Down equired. Tax, title and plate fees extra

The Best Price...

2018 SILVERADO "LT" 4x4 DOUBLE CAB



Sale Price: \$31,999* Was \$42,170

- 285HP V6 Engine!
- GM Bed Liner INCLUDED!
- Color Touch Screen Radio!
- Steering Wheel Radio Controls!
- Remote Keyless Entry!

Aluminum Wheels! Stock# J45835

24 MONTH LEASE

\$999 Down

NO Security Deposit required. Tax, title and plate fees extra

2018 COLORADO "CUSTOM" 4x4 CREW CAB



- 308HP V6 Engine!
- Color Touch Screen Radio!
- Remote Keyless Entry!
- Trailering Package! - 18" Dark Argent Aluminum Wheels!
- Monochromatic Appearance! Stock# 2J3952

Was \$35,130 Sale Price: \$29,189*

\$999 Down NO Security Deposit required. Tax, title and plate fees extr

2018 TAHOE "LT" 4x4



- Leather Seats!
 - Color Touch Screen Radio! Remote Keyless Entry and Start!
 - Rear Vision Camera!
 - Aluminum Wheels!
 - Trailering Package! Stock# J43283

Was \$57,760 Sale Price:

\$47,750*

\$999 Down

We NEED Your Trade... We'll Give You \$1000 OVER Kelley Blue Book... GUARANTEED!*





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Tuesday Wednesday **Thursday Friday**

8:00 AM - 6:00 PM 8:00 AM - 9:00 PM 8:00 AM - 6:00 PM

791-1010

35500 S. Gratiot Avenue... North of 15 Mile Clinton Township FIND NEW ROADS

*Pictures may not represent actual sale vehicle. All applicable incentives including bonus cash, bonus tags, competitive brand, lease conquest and/or lease loyalty offers have been deducted from Sale Prices/Payments and are subject to change by the manufacturer without notice and are plus title, tax, plate and CVR fees and were valid at time of printing. 6M Employee discount require except where noted. Leases are 10,000 miles per year. Disposition fee may be required at lease turn in. \$1000 over Kelley Blue Book trade-in offer on 2005-2015 vehicles in drivable condition. No salvage or branded titles. Certain restrictions apply, see dealer for complete details on all incentives/offers. Sale ends 8/17/2018 @ 6:00PM.









WE ARE PROFESSIONAL GRADE 2017 DEALER OF THE YEAR AWARDED BY GENERAL MOTORS CORPORATION

2018 GMC SIERRA 1500 SLE 2018 GMC CANYON SLE



\$28,947°

\$137* 24_{MINTH} \$999

2018 GMC ACADIA SLE1 \$**26,557**

\$217* 36,

2018 GMC YUKON SLE



2018 GMC TERRAIN SLE \$**24,477**

BUICK 2016 BUICK DEALER OF THE YEAR • 2016 BUICK DEALER OF THE YEAR • 2016 BUICK DEALER OF THE YEAR



\$29,497 \$97* | 24_{MONTH} | \$999

2019 BUICK ENVISION

2018 BUICK CASCADA \$30,497

\$35,579

2018 BUICK ENCLAVE

\$217* PER MONTH | 24 MONTHS | \$999 DOWN

2018 BUICK REGAL \$21,817

\$237* PER MONTH | 36 MONTHS | \$999 DOWN

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We'll give you a \$3,500 minimum for your 2003 or newer trade in. See us for your GM Employee purchases.

26125 VAN DYKE AT 10 1/2 MILE ROAD

Now looking for experienced salespeople to join our team!

All prices and payments include GM rebates. Pictures may not represent actual vehicle. Pricing subject to change per GM incentives. Prices and payments are inclusive of active GM employee discount (unless otherwise stated). Must have GM Employee discount and lease loyalty. All leases are 10,000 miles per year with approved S Tier credit. All Vehicles shown are \$999 down unless otherwise stated. Disposition Fee may be required at vehicle turn in. Must have lease loyalty or lease conquest vehicle in household on certain models. Prices and payments are plus tax, title, plate, doc fee, refundable security deposit required on certain vehicles—to be determined by lender. 2019 model year vehicles are priced and discounted at supplier discount. Pricing includes Ed Rinke bonus cash, while supplies last.**\$3,500 trade in is valid on 2003 or newer vehicles w/ under 115k miles in drivable condition, no branded titles, reconditioning determined by appraiser. Certain restrictions may apply, see dealer for complete details. Volt is a former countesy vehicle* Exp date: 2/20/2018.





GIVE YOU A \$3,500 MINIMUM FOR YOUR 2003 OR NEWER TRADE IN



2018 CHEVY SILVERADO 1500 LT DBL CAB \$127* PER MONTH OR \$31,607* **PURCHASE FOR** 24_{MONTHS} \$999_{DO}



\$127* PER MONTH OR \$19,607 24_{MONTHS} \$999_{DO}



2018 CHEVY CAMARO LT PURCHASE FOR \$267* PER MONTH OR \$24,737 \$999₀₀



\$327* PER MONTH OR \$28,997* 36_{MONTHS} \$999_{DO}



\$107* OR \$16,377



\$117* PER MONTH OR \$14,777 \$999_{DOWN}



\$127* PER MONTH OR \$24,197 _{тнз}\$999₀₀



COURTESY VEHICLE 227* PER MONTH OR \$29,947* 36_{MONTHS} \$999_{DOWN}

GM CARD TOP OFF UP TO \$3,000 • NO APPOINTMENTS NECESSARY FOR OIL CHANGES

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26125 Van Dyke @ 101/2 Mile • Center Line, MI 48015 SERVICE HOURS: Monday & Thursday 6:30am-9:00pm; Tuesday, Wednesday & Friday 6:30am-6:00pm • Shuttle at 6:30am - Pick-up Both Ways • All Day starting at 6:30am.

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We use Genuine GM Oil & Filter No additional or hidden charges. Out the door pricing. Open Mondays & Thursdays until 8:30pm

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Must present coupon with order. Plus tax. Expires 8-31-18.

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See us for your GM Employee purchases. Now looking for experienced salespeople to join our team!

26125 VAN DYKE AT 10 1/2 MILE ROAD











/ FIND NEW ROADS SHOWROOM HOURS: MON. & THURS. 8:30AM-9PM / TUES., WED. & FRI. 8:30AM-6PM

All prices and payments include GM rebates. Pictures may not represent actual vehicle. Pricing subject to change per GM incentives. Prices and payments are inclusive of active GM employee discount (unless otherwise stated). Must have GAM Employee dis lease loyalty. All leases are 10,000 miles per year with approved S Tier credit. All Vehicles shown are \$999 down unless otherwise stated. Disposition Fee may be required at vehicle turn in. Must have lease loyalty or lease conquest vehicle in household or models. Prices and payments are plus tax, title, plate, doe tee, refundable security deposit required or to be determined by lender. Pricing includes Ed Rinke bonus cash, while supplies last.***135,500 trade in is valid on 2003 or newer v w/ under 115k miles in drivable condition, no branded titles, reconditioning determined by appraiser. Certain restrictions may apply, see dealer for complete details. Volt is a former courtesy vehicle** Exp date: 8/20/2018.

CHEVROLET

