

GM, Ford, FCA Participate in Science Event

Hands-on Demonstrations Highlight MCC 14th Annual Education Gathering

by Jim Stickford

Macomb Community College (MCC) and several automakers and auto suppliers put on the annual Auto STEAM Days gathering to educate local students on possible careers in Science, Technology, Engineering, Arts and Mathematics/Manufacturing (STEAM).

Sean Patrick, the manager of Media Relations at MCC, said that the school has been holding the event for more than a decade. This year it was held over two days, Dec. 5 and Dec. 6. On Dec. 5, students from Wayne, Oakland and Macomb counties came to MCC and saw demonstrations of STEAM knowledge being used.

The demonstrations were put on by the event's sponsors, Patrick said. They included GM, Ford, FCA, Continental Magna, Siemens and Kuka.

On the evening Dec. 6, students could return to the campus with their parents for a Q&A.

"The idea is to show students how studying STEAM subjects can lead to a very successful career," Patrick said. "The Q&A session helps educate the parents."

"This is an exciting event that we look forward to putting on every year," said Joe Petrosky,

dean of Engineering at MCC. "It really charges me up to see students learning and having fun at the same time. The first day is all about student interaction and hands-on demonstrations by our sponsors. The second day's evening gathering is more about students and their parents learning the pathways to STEAM careers, learning what classes to take and what companies are looking for in employees."

The demonstrations put on by Ford, FCA and GM represented a sort of "soup to nuts" showing of how automotive designs go from the imagination to an actual full-size three-dimensional clay representation of an automotive design.

Alexander Tannen, an exterior designer for Jeep, showed students how to use Photoshop software to create a sketch of an automotive design on a computer. In earlier times this sketch might be done using a pencil and paper.

"I really enjoy teaching kids how sketch electronically," Tannen said. "We now have technology that translates sketches directly into electronic representations. The students usually haven't seen this type of technology on their home computers and are very interested in how it

works. They are fascinated by the process."

Michael Smith, a Design recruiting and talent manager at Ford, showed students how to

use 3D rendering software to create three-dimensional renderings of automotive designs.

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Local students got their hands dirty at GM's design demonstration.

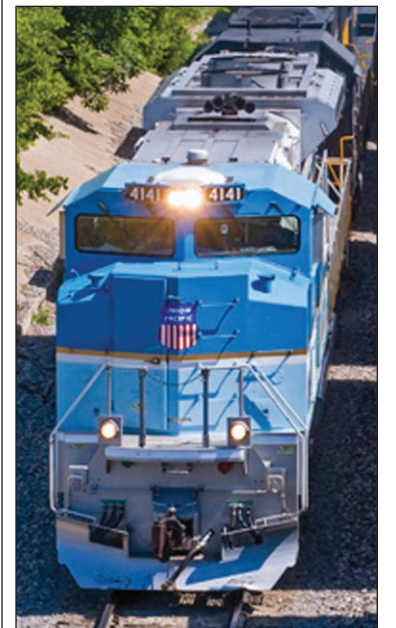
Funeral Train

Engine 4141

The locomotive that was used to transport the late President George H.W. Bush's body has a storied history that can be traced back to General Motors.

A state funeral was held for Bush in Washington, D.C. last week. After the service ended, his body was flown back to Texas,

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Special Engine 4141

FCA Sales Way Up as Ford Reduces Fleet Sales

November was a great month for FCA as the Detroit automaker reported U.S. sales of 181,310 in November, a 17 percent increase compared with sales in November 2017.

Meanwhile Ford F-Series has now recorded a record nine straight months topping 70,000 trucks sold, on sales of 72,102 pickups, said Ford spokesman Erich Merkle. The company, overall, reported a 6.9 percent sales decline over the previous November.

FCA spokesman Jeff Bennett said the company's strong November sales were driven by the Jeep and Ram brands which set a variety of records in total, retail and nameplate sales. Ram led FCA US brands with a 44 percent increase in vehicle sales.

FCA retail sales in November rose 6 percent to 136,704 vehicles. It was the highest November retail sales since 2001 when sales reached 155,706 vehicles. Fleet sales totaled 44,606 vehicles.

"Our dealers saw steady customer traffic throughout the month and especially during the Thanksgiving weekend," head of U.S. Sales Reid Bigland said. "We were also honored when Motor Trend named the Jeep Wrangler as the 2019 SUV of the Year and the Ram 1500 as the 2019 Truck of the Year. The awards underscore the hard work our dealers and employees have done to make both of these vehicles a success."

Jeep brand sales rose 12 percent to 73,784 vehicles. Jeep retail sales increased 4 percent to 65,588, marking a new record. The previous record was November 2017 when sales reached 63,206 vehicles.

This is the seventh-straight month Jeep retail sales have set a new record, Bigland said.

The Jeep Wrangler, Jeep Cherokee and Jeep Compass all delivered new total sales records for the month. Wrangler hit 15,963 vehicles while Cherokee rose 23 percent to 20,296 vehicles. The previous November records for both the Wrangler and Cherokee were in 2015 when Wrangler sales hit 13,948 vehicles and Cherokee sales reached 18,218. Compass sales increased 25 percent to 11,665, eclipsing the previous November record of 9,368 vehicles in 2017.

Ram brand sales rose 44 percent to a November record 57,970 vehicles. The previous record was 42,511 vehicles in November 2016. The Ram 1500 drove the performance as total sales climbed 59 percent to 37,637 vehicles for a new November record. The Ram 1500 and Ram brand also delivered record retail sales for November.

Dodge brand sales jumped 15 percent to 33,196. The brand was driven by Challenger sales, which rose 30 percent. Chrysler brand sales fell 21 percent to 13,094 vehicles.

Merkle said overall Ford's November U.S. sales totaled 196,303 vehicles – a 6.9 percent decline over November sales for 2017.

Merkle said that as a result of a decline in daily rental sales due to order timing, Ford fleet sales were down 7.1 percent. As a result daily rental sales were down 32.7 percent, while commercial sales were up 11.8 percent.

A stronger mix of trucks and SUVs increased Ford's overall average transaction pricing, hitting a new record of \$37,000 in No-

vember, a \$1,600 increase over last year. This compares to a \$780 increase for the overall industry, with average transaction prices of \$33,400, Merkle said.

Overall Ford Expedition sales

increased 7.9 percent last month with 4,264 SUVs sold. At retail, Expedition sales grew at a faster pace of 17.7 percent, Merkle said.

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2019 Cherokee



2019 Expedition

VW, Ford Consider Idled Plant Usage

REDFORD TOWNSHIP, Mich. (AP) – Ford and Volkswagen are in talks about building VW vehicles in some of Ford's U.S. factories.

VW CEO Herbert Diess told reporters after a meeting at the White House that the automaker in talks with Ford. The meeting was held Dec. 4 with executives from VW, BMW and Daimler to discuss trade issues.

Ford CEO Jim Hackett confirmed the VW talks Dec. 4 and Executive Chairman Bill Ford said the negotiations are going well. But both said they weren't ready to announce anything.

Hackett wouldn't say that Ford has excess factory capacity that could be used to build VWs, but said he is happy with the way his company utilizes its factories.

"We really manage that tightly," he said. "I'm really proud of where we are and our utilization right now."

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DuPont Wins a Supplier Award

DuPont Transportation and Advanced Polymers came up winners when they were selected as winners of the recently-held 55th annual R&D 100 Awards.

DuPont Transportation & Advanced Polymers (T&AP), a DowDuPont Specialty Products Division business, delivers a broad range of technology-based products and solutions to the transportation, electronics, industrial and consumer markets,

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GM, Ford and FCA Gather STEAM at MCC Annual Event

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One of the students he called up to actually use the 3D software was Peter Wojcik, a freshman at Lakeview High School in St. Clair Shores.

Wojcik put on a special 3D headset and was given a hand-held control. By using this control, Wojcik was able to “sketch” a 3D rendering of what he “drew” in the air. This sketch appeared on a screen.

Jordan Beckley, a Ford digital design instructor, showed Wojcik how to use the hand control to create the appearance of texture on what he drew and how to manipulate the control to create actual drawings on the screen by manipulating the controller in the air as if he was drawing on an invisible board.

“I have to say this is a pretty good demonstration,” Wojcik said. “This is the first time I’ve

ever used Virtual Reality (VR) 3D tech. The biggest surprise was that I was able to go into the rendering and see the thing I drew using the headset. It looked like what I drew was right in front of me. Very cool.”

GM’s demonstration showed how designers used renderings in the computer to create clay scale models and then actual full-sized sculptures made of clay.

Eric Louton works at GM’s de-

sign building in the Tech Center in Warren and has been with the company for 30 years.

Louton said that when he talks with students, the question that most comes up is where is this 3D technology going, and how it affects design work.

“I went to school here at MCC 30 years ago and got a job right away with GM and have been with the company ever since,” Louton said. “I currently work

as a group leader in the company’s Design Center doing sculpting. What we are showing students is that even in this computer age with all this wonderful 3D technology, there is still a need for literal hands-on design talent. We still need surface product engineers. It’s fun to show the students how we take computer designs and render them in clay, first in scale model, then full-size,” Louton concluded.



Students see how FCA exterior designer Alexander Tannan uses computers to create vehicle designs.



Student Peter Wojcik uses Virtual Reality gear to create a 3D drawing.

Funeral Train Engine 4141

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where Union Pacific’s special “4141” engine pulled the funeral train and transported Bush to Texas A&M University in College Station, Texas, the site of the George H.W. Bush Presidential Library and Museum, where he was laid to rest.

Union Pacific first paid tribute to President George H.W. Bush back in 2005 with a custom-painted locomotive that incorporated colors and elements of the Air Force One used during Mr. Bush’s presidency.

The Union Pacific locomotive bears the number 4141 (UP 4141), in honor of the 41st president was revealed to the former president during a ceremony near the George Bush Presidential Library and Museum on the Texas A&M University campus in College Station at a ceremony celebrating to the grand opening of “Trains: Tracks of the Iron Horse,” on Nov. 7, 2005, at the Bush Library.

According to Union Pacific, UP 4141 marks only the sixth time that Union Pacific has painted a locomotive in colors other than the traditional UP “Armour Yellow” paint. The exhibit covered the rich technological, social and economic history of the railroad industry.

Union Pacific 4141 is an EMD SD70ACe locomotive owned by Union Pacific. It is this engine that completed the last portion of the late president’s journey.

EMD, also known as Electro-Motive Diesel, is now owned by

Caterpillar Inc., but prior to that was the Electro-Motive Division of General Motors.

According to American-Rails.com, EMD originally began as the Electro-Motive Corporation, a privately owned company being based out of Cleveland, Ohio that built inexpensive motorcars.

VW, Ford Ponder Idled Plants

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The announcement comes a week after rival General Motors announced plans to close as many as five plants in the U.S. and Canada and lay off up to 14,000 white- and blue-collar workers.

Hackett said Ford has been able to avoid such announcements by running its operations mainly on three shifts.

“I’m really happy with where we are,” he said at the company’s holiday party at a manufacturing research facility in Redford Township. “We’re in great shape,” he said.

VW has said it’s considering a new U.S. factory to build electric vehicles that the company plans for the future. The company now builds SUVs and the Volkswagen Passat midsize car at a factory in Chattanooga, Tenn., but imports the rest of its vehicles.

Ford and VW also are in talks about an alliance to build com-

mercial vehicles that could lead to other ventures.

Lincoln Navigator sales rose on strong demand and tight inventory; 88 percent of retail sales were high series Reserve and Black Label Navigator models. Navigator posted gains of 27.3 percent.

Morgan Stanley analyst Adam Jonas wrote in a note to investors Dec. 3 that Ford could lay off as many as 25,000 workers as it restructures to make itself leaner and more able to compete in a changing automotive market that includes electric and autonomous vehicles.

Neither Hackett nor Ford would say if Jonas’ number was too high, but Hackett said the number did not come from Ford. Bill Ford said it bothers him that many employees are worried about losing their jobs under the \$11 billion restructuring, which is to come in several waves starting next year.

“Anytime we do anything that is negative to them or their families I feel it personally,” he said. “We’re taking great care as we go through our business plan to make sure that we engage people early, talk to them, explain to them.”

DuPont Wins Auto Supplier Award

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said T&AP spokeswoman Chris Swart.

The company’s 2018 winning materials include:

- Developed with a team at Audi, BETA FORCE 9050M composite bonding adhesive for automotive mass production and multi-material substrates. This adhesive enables significant weight reduction and improves torsional stiffness of the vehicle, resulting in better fuel efficiency and improved CO2 reduction, safety, handling and comfort. Good handling strength after short curing times offers short tack times, which significantly

improve manufacturing productivity.

- Zytel HTNLTFR52G30NH BL662 laser-transparent halogen-free nylon resin is designed for very thin parts for automotive electrical systems and consumer electronics. It offers a good flame-retardant rating (V0 at 0.4 mm) while maintaining chemical resistance and dimensional stability performance. This material may be used to make housings for lithium-ion batteries, a timely innovation as vehicle electrification is revolutionizing individual and mass mobility for both business operations and the driving public at large.

FCA Monthly Sales Up, Ford Down

Lincoln began selling its new Nautilus SUV last month; overall MKX and Nautilus sales were up 20.4 percent, with Nautilus representing approximately half of the retail mix, Merkle said.

“F-Series marked a record nine straight months topping the

70,000 truck mark, a consistent performance by a high volume, high margin product unmatched in the industry,” said Mark LaNave, vice president, U.S. Marketing Sales and Service. “Sales of our all-new Expedition and Transit Connect continue to grow.”

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Transplant Facilities are Concentrating on SUV Production

Foreign Automakers Follow the Trend Away From Building Sedans

The popularity of SUVs is not limited to American vehicles.

OEMs with production facilities have dedicated a lot of their capacity to making SUVs, CUVs and pickup trucks, said IHS analyst Stephanie Brinley.

"The trend for automakers is manufacturing close to where you sell," Brinley said. "So we see automakers like BMW, which is known for its sedans, making SUVs at its South Carolina plant."

In August, Cox Automotive reported that passenger cars accounted for less than 30 percent of vehicles sales in a single month for the first time in history. Charlie Chesbrough, senior economist for Cox, noted that it was only a few years ago that passenger cars made up more than 50 percent of vehicle sales.

He added that Toyota, Nissan and Honda, OEMs noted for their passenger car sales, all reported sharp declines. In August of this year sales of mid-size and compact cars fell 15.6 percent and

13.6 percent to 130,000 and 160,000 vehicles, respectively, according to Cox Automotive.

Given this news, it makes sense that transplant OEMs are building more SUVs, CUVs and pickups in the United States, Brinley said. So when automakers like BMW build new plants in the United States, it is only logical that they facilities are geared toward SUVs and CUVs. This change got its start back during the 2000s. The question of whether SUVs are a trend or a fad has been answered.

"We have entered into a new market for consumer preferences," Brinley said. "And this means fewer sedans. We've passed the point where this can be considered a trend. We've entered into a new normal."

An examination of what's being built in the U.S. at the transplant assembly plants bears this idea out, Brinley said. BMW's plant in Greer, S.C., has built sedans, but its main output is the X3 Series.

Brinley said that she can't predict the future but if she had to guess, in the future more SUVs, pickups and CUVs will be manufactured at the transplant production facilities.

Here is a breakdown of non-passenger car vehicles, including SUVs, CUVs, minivans and pickup trucks, made at transplant facilities in the United States.

Honda

Sold in 2017: 1.486 million vehicles for 8.62 percent of U.S. marketshare.

- Honda CR-V, a compact SUV sold 377,000. It was made at Honda Manufacturing of Indiana.
- Honda Odyssey. Made at Honda Manufacturing of Alabama. The minivan sold 100,307 in 2017.
- Honda Pilot. This mid-size SUV is made at Honda Manufacturing of Alabama. Sold 127,279.
- Honda Ridgeline. This Sport



2019 Acura MDX

Utility Truck is made in Honda Manufacturing of Alabama. It sold 34,749 in 2017.

- Acura MDX. Made in the East Liberty Plant. Sold 54,886.
- Acura RDX. Made in the East Liberty Plant. Sold 51,295.

Toyota

Toyota sold 2.129 million vehicles in 2017, accounting for a 12.35 percent of the U.S. marketshare.

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Barra Talks About GM Plans With Washington Politicians

by PADMANANDA RAMA and JULIE CARR SMYTH
Associated Press



Mary Barra

WASHINGTON (AP) — Three Ohio congressmen met with the head of General Motors Dec. 5 in Washington in their bid to keep an assembly plant from closing, urging her to give auto workers a chance at a new line of electric vehicles soon headed into production.

GM recently announced it will stop making the Chevy Cruze at its Lordstown, Ohio, plant by March and is considering closing the plant for good. It's part of a massive restructuring for the Detroit-based automaker.

Republican Sen. Rob Portman and Democratic Sen. Sherrod Brown said they urged GM chief executive Mary Barra to keep the plant open to avoid devastating consequences for Ohio's Mahoning Valley. She also met with Democratic Rep. Tim Ryan, whose district includes the plant.

"Just as the workforce has stood with General Motors over the years, we expect GM to stand with these workers — and give them a chance," Portman told reporters after the meeting.

Brown added, "This is the best GM assembly plant work force in all of North America. We know the impact this has on the Valley."

Already, 3,000 jobs have been eliminated at the plant since the beginning of 2017. GM has about 1,500 workers left at the Lordstown plant.

Brown said he's enlisted the help of Republican President Donald Trump and his labor secretary, Ohio Gov.-elect Mike DeWine, in addition to a host of local officials. Brown has also reached out to sitting Republican Gov. John Kasich, who leaves office next month.

Barra said it was an "incredibly difficult" decision to place Lordstown in an "unallocated" position because it directly affects

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Transplant Facilities are Concentrating on SUV Production

Foreign Automakers Follow the Trend Away From Building Sedans

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- Toyota Highlander. This mid-size crossover SUV is made in Toyota Manufacturing Indiana. They sold 215,775.
- The Toyota Sequoia full-size SUV sold 12,156 in 2017. It was made at Toyota Manufacturing Indiana.
- Toyota Sienna sold 111,489 in 2017. The minivan is made at Toyota Manufacturing Indiana.
- Toyota Tacoma. The mid-size pickup truck sold 8,124 in 2017. It is made at Toyota Manufacturing Texas.
- Toyota Tundra. This full-size pickup sold 116,285 in 2017. It is made at Toyota Manufacturing Texas.

- BMW**
- Overall, BMW sold 305,685 vehicles in the U.S. in 2017, for a total marketshare of 1.77 percent. The named vehicles were made at Greer, S.C.
- BMW X3. The company sold 40,691 of the compact luxury SUV.
 - BMW X4. The company sold 5,198 of the compact luxury SUV.
 - BMW X5. The company sold 50,815 of the mid-size luxury SUV.
 - BMW X6. The company sold 6,780 of the luxury crossover vehicles.

- Daimler AG**
- The company sold about 372,000 vehicles in the U.S. in 2017, for 2.16 percent of the marketshare. All vehicles made in the country were made at its Mercedes-Benz International in Alabama facility.
- The Mercedes GLE Classis sold 54,595 of the luxury SUV crossover.
 - Mercedes-Benz GLS Class. This full-size SUV sold 32,248 in the U.S.

- Volvo**
- Volvo makes the S60 SUV at its factory in South Carolina. The vehicle was new last year and Volvo only sold 16,825. Sales for 2018 are expected to be much higher.

- Volkswagen**
- VW sold about 340,000 vehicles in the U.S. in 2017, accounting for 1.97 percent of the domestic market.
- VW Atlas. This mid-size SUV was made in VW Chattanooga Assembly. The company sold 27,119.

- Hyundai**
- Hyundai sold 664,000 vehicles in the U.S. in 2017, accounting for 3.86 percent of marketshare.
- Hyundai Santa Fe. This mid-size SUV was made at Kia Manufacturing of Georgia and the company sold 133,171.

- Kia Motor Company**
- Kia sold 589,000 vehicles in the U.S. market in 2017, accounting for 3.42 percent of marketshare.
- Kia Sorento. The mid-size SUV accounted for 99,684 in sales. It was made at Kia Manufacturing of Georgia.

- Nissan Motor Company**
- Nissan sold 1.44 million vehicles in the U.S. last year, accounting for 8.35 percent of domestic marketshare.
- Nissan Frontier. The pickup truck anncounted for 74,360 in sales last year. It was made in Canton, Miss.
 - Nissan NV. The company

- sold 17,858 of this delivery van. It is made at the Canton facility.
- Nissan Pathfinder. This mid-size SUV sold 81,065 last year. It is made at the Canton facility.
 - Nissan Rogue. This compact SUV is made at the company's Smyrna facility in Tennessee. Nissan sold 403,465 in 2017.
 - Nissan Titan. The full-size pickup truck was made in Canton and Nissan sold 52,924.
 - Infinifi QX60. Sold 40,444. This luxury brand vehicle is made in the Nissan Smyrna plant.

- Suburu**
- The company sold 647,956 vehicles in the U.S. in 2017, accounting for 3.76 percent of marketshare. It just started in the last couple of months selling the Ascent mid-size SUV. In 2018 sales are 22,000 and the vehicle is made at Suburu of Indiana.
- Suburu Outback. This 5-door SUV sold 188,886 in 2017 and is made at Suburu of Indiana.
- To view pictures of the SUVs, trucks and minivans made at transplant factories, please visit DetroitAutoScene.com and click on the front page and follow instructions.



2018 Hyundai Santa Fe



2019 BMW X5



2019 Kia Sorento



2019 Mercedes GLE Class



2019 Infiniti QX60



2019 Volvo S60



2019 Nissan Rogue



2019 Volkswagen Atlas



2019 Suburu Outback

Ford Uses Latest Tech in Its Manufacturing Development

Ford is dedicated to being a great manufacturer and the company's new Advanced Manufacturing Center in Redford is proof of that.

This location is where an engineers use 3D printing machines churning out brake parts for Ford's soon-to-be-introduced Shelby Mustang GT500, said Ford spokeswoman Kelli Felker. Across the room, team members use virtual reality headsets to design and simulate production lines, while others work alongside a collaborative robot, programming a safer way to install a vehicle part.

These technologies are no longer simply a Hollywood vision of the future, Felker said. For Ford, which has been breaking new ground in auto production for more than a century, they are critical tools and technologies to improve the complex and demanding task of building cars and trucks. And this is all happening every day under one roof at the company's new \$45 million Advanced Manufacturing Center in Redford.

"More than 100 years ago, Ford created the moving assembly line, forever changing how vehicles would be mass-produced," said Joe Hinrichs, Ford's president of Global Operations. "Today, we are reinventing tomorrow's assembly line – tapping technologies once only dreamed of on the big screen – to increase our manufacturing efficiency and quality."

Approximately 100 experts work at the development hub for cutting-edge manufacturing technologies, including 3D printing, augmented and virtual reality, robotics, digital manufacturing and more, Hinrichs said.

Today, Ford is driving the future of 3D printing in the automotive industry, Felker said. The Advanced Manufacturing Center has 23 3D printing machines and is working with 10 3D manufacturing companies. This allows Ford

experts to develop applications with different materials – from sand to nylon powder to carbon. One application currently under development has the potential to save the company more than \$2 million.

There are 3D printed parts in the manufacturing and production of Ford vehicles, Hinrichs said. The soon-to-be-revealed Shelby Mustang GT500, coming at the North American International Auto Show in January, has two 3D printed brake parts, while the F-150 Raptor built for China includes a 3D printed interior part. As 3D printing becomes more affordable, 3D parts will become more prevalent.

Three-dimensional printed parts also help employees improve vehicle quality. Assembly line workers at Michigan Assembly Plant, where Ford builds the Ranger pickup, use five different 3D printed tools.

These tools played a critical role in the launch of Ranger, removing weeks from an already tight timeline and ensuring quality is built in – from the first vehicle that rolled off the line.

Ford, which purchased the third 3D printer ever made in 1988, now has 90 3D printers globally producing parts and tools, Felker said. On the shop floor, workers team with advanced manufacturing experts to identify ways to save the company time and money, including how to 3D print replacement parts to keep lines running instead of waiting for parts that can take weeks to be fabricated.

While millions of children catch fictional animals or capture portals in popular augmented reality video games, Ford is banking on augmented and virtual reality to help it simulate and design assembly lines to build millions of vehicles, Felker said.

Ford experts don specialized gaming equipment and configure



Michael Eau Claire and Dragisa Tofilovski demonstrate how VR works in designing new vehicles.

a virtual reality production line without ever leaving the Advanced Manufacturing Center, allowing them to identify potentially hazardous maneuvers and fine tune workflows long before an assembly line is constructed. Felker said.

Experts also develop specialized experiences in augmented and virtual reality to allow Ford manufacturing teams to work collaboratively in plants around the world. This enables people on different continents to work in the same virtual experience simultaneously.

For instance, if a vehicle is intended to be produced globally, teams can work together to design optimal manufacturing workstations for all continents.

This is advantageous because the technology allows teams from around the world to design a

workstation for vehicle production as if they were standing in the same physical space, Felker said.

Ford has made significant advances during the last few years with collaborative robots – also known as cobots – with more than 100 of them in 24 Ford plants globally.

These robots are smaller and can work safely alongside people, without protective cages. In Livonia Transmission Plant, a cobot performs a job that was so ergonomically difficult and stressful for employees that they could only do that job for one hour at a time.

The cobot was a welcome addition to the production line. These cobots also help Ford reduce

costs by eliminating the need for expensive safety cages that larger robots require for safety reasons, Felker said.

Utilizing cobots in the Advanced Manufacturing Center allows the company to identify and address potential production issues before the cobots are installed in plants, thus avoiding having to fix manufacturing problems on the fly.

"While we are increasing our use of collaborative robots, we strongly believe there is a need for both people and robots," said Hinrichs. "People are better at doing certain jobs, while robots are able to perform certain tasks, including those that are ergonomically taxing for people."

Dodge Starts 'Santa Sleigh' Ad Campaign

The Dodge brand is launching "Jolly Fast Man," a seven-part social series campaign across its digital and social channels that chronicles the entire process of overhauling Santa's sleigh – the Redeye Express.

The series launches on the brand's YouTube channel, with content running across the brand's Facebook, Twitter and Instagram channels throughout the month of December, said FCA spokeswoman Diane Morgan. The series features Dodge personalities Bill Goldberg (professional athlete, NFL player, pro wrestler and automobile aficionado) as Santa and "All Girls Garage" host and automotive enthusiast Cristy Lee as Mrs. Claus.

The social series takes viewers behind the scenes of the "rebuild," where Santa, Mrs. Claus and the elves take inspiration from the Dodge brand lineup to put a decidedly Dodge spin on Santa's classic sleigh, and reveal the reasoning behind many of the sleigh's new features.

The initiative is an extension of the Dodge brand's "Big Finish" 30-second campaign spot "Upgrade" in which Santa stares at his centuries-old sleigh and proclaims to his elves, "It's time for an upgrade."

Here is a list of the commercials Dodge is promoting:

- **"North Swoll:"** Why a new sleigh? After test driving his first Dodge muscle car, Santa was inspired to lose his "bowl of jelly," which meant he needed a new ride to match his "new shredded bod."
- **"Gift Horses:"** Converting the sleigh from reindeer power to horsepower meant



Santa Claus's sleigh after its received upgrades from Dodge.

reassigning Santa's reindeer in the workshop.

- **"Wish List:"** A little known fact ... Mrs. Claus is a 'gear head' and had a few suggestions for Santa's sleigh, including "a supercharged Hemi V8 with 797 horsepower, 707 lb. feet of torque, a wide body package with 3.5 inches of added width – just like the SRT Hellcat – for improved handling and braking, power bulge aluminum hood with heat extractors, 6-piston Brembo front brakes and, oh, heated seats would be nice!"
- **"Season's Beatings:"** The elves' workshop is usually a harmonious place to work, but in this spot two elves get called down to HR for name calling, including "Tinsel Toes," and the misuse of the grease gun while working on the sleigh's front-axle disconnect. Is a lump of coal in the future for these two elves?

- **"You Don't Get Jack:"** The haul in Santa's sleigh will include Dodge merchandise, including Hellcat sweaters and T-shirts, which means one elf's Jack-in-the-Box may not make it in the bag. But no matter, it looks like this particular "jack" has been "jacked" by one of his co-workers! Consumers can also get in on the reindeer action by purchasing a Hellcat Redeye Reindeer T-shirt and the Hellcat Redeye sweater shown in the spots on Dodge.com, with more holiday merchandise to follow.
- **"Fast & Furry-ous:"** In this 30-second spot, one of the reindeer expresses his point of view on Santa's new sleigh and what it will mean for him "downwind."

This latest Dodge advertising Santa sleigh campaign was created in a partnership between Dodge and the Doner ad agency.

Ghosn Remains Behind Bars

TOKYO (AP) – The former Nissan chairman Carlos Ghosn, who was arrested in Japan on suspicion of underreporting his income, seems prepared to fight out his case and has asked for thriller books, according to the Brazilian consul general.

Joao de Mendonca Lima Neto, one of the few visitors Ghosn has been allowed to see under Japan's stringent rules, said Ghosn was healthy and holding up well.

"My impression is that he is a strong man in the sense that he will fight this out properly. He doesn't look worried," Mendonca told The Associated Press on Dec. 5 at Brazil's consulate in Tokyo. "I admire him for his fortitude."

Mendonca declined comment on the specifics of the allegations against Ghosn, saying his job was about helping Brazilian citizens with their problems.

He said he has conveyed Ghosn's verbal messages to his family and has relayed the family's messages back. He declined to disclose details.

Ghosn, who headed the Renault-Nissan-Mitsubishi Motors auto alliance, was arrested last month on suspicion he underreported his income by millions of dollars for years at a time.

Born in Brazil, Ghosn holds French, Lebanese and Brazilian citizenships. Only representatives of a suspect's home country and attorneys can visit suspects in detention in Japan.

Consular officials have visited Ghosn four times in the last two weeks, Mendonca said. They brought history and philosophy books and fruit, but Ghosn asked for thriller books to pass the time.

Mendonca said he speaks with Ghosn in Portuguese through a glass barrier.

Although Japanese detention

cells are not heated and the weather can be chilly, Mendonca said Ghosn told him he was warm. He was wearing a blue zipped-up top, he recalled.

"Dr. Ghosn has always said that he is well and he is well treated, given the circumstances," he said. "He answers normally, 'I'm fine.'"

Japanese media, without identifying sources, have reported prosecutors will detain Ghosn on additional allegations beyond Dec. 10, when the period of detention allowed on the first set of allegations against him will run out. Prosecutors have refused to comment except in weekly meetings, when they confirm some basic facts. Ghosn has not been charged.

Since he was sent by Renault SA of France to turn around a near-bankrupt Nissan Motor Co. two decades ago, Ghosn's star-level pay has drawn attention since executives in Japan tend to be paid far less than their international counterparts.

At the center of the allegations, according to Japanese media reports, is Ghosn's deferred income, promised as money, stocks and other items for a later date, including after retirement.

Nissan, which makes the March subcompact, Leaf electric car and Infiniti luxury models, says an internal investigation found Ghosn hid his pay and misused company funds and assets for personal gain. The company has ousted Ghosn as chairman but has yet to pick a replacement. Brazilians are proud of Ghosn, Mendonca said.

"We also have a position of wait and see. What you read in the press is not what he is saying. We are just waiting for the result, and hopefully the best result," he said. "Given his position, he has been an icon not only here but all over the world."

Dodge and Mopar Committed to More Racing

Dodge/SRT and Mopar have announced a renewed commitment to National Muscle Car Association (NMCA) competitors for the 2019 season. For the second consecutive year, the brands will offer racers in model-year 2005 and newer FCA US LLC vehicles complimentary entry in the NMCA Dodge/Mopar Hemi Shootout category, providing performance enthusiasts a sanctioned and secure drag strip environment to race their muscle cars, said FCA spokeswoman Kristin Starnes.

In its first year, the Dodge/Mopar Hemi Shootout drew large, 75-car fields showcasing a spectrum of modern-day FCA US vehicle nameplates, including Dodge Challenger and Charger Scat Pack models, 707-horsepower Challenger and Charger SRT Hellcat models and the limited-production 840-horsepower Dodge Challenger SRT Demon.

The six-event 2019 NMCA schedule blasts off with the season-opening 17th annual NMCA Muscle Car Mayhem at Bradenton Motorsports Park in Bradenton, Florida, March 7-10, 2019.

"The NMCA Dodge/Mopar Hemi Shootout is a great opportunity for the performance lovers who support our brands to hit the drag strip in a sanctioned, controlled environment," said Steve Beahm, head of Parts and Service (Mopar) and Passenger Car Brands, FCA - North America. "These events are the perfect venue to let our vehicle owners live out their passion, and we're also proud to be able to help our new Challenger R/T Scat Pack 1320 owners experience their drag-oriented muscle cars by providing one-year NHRA and NMCA memberships."

"NMCA was thrilled with the overwhelming response to the Dodge/Mopar HEMI Shootout class this year, and we look forward to continuing this exciting program in 2019," said Steve Wolcott, President and CEO of the NMCA Muscle Car Nationals. "Passion for the Dodge Challenger and Gen III HEMI engine platforms has never been higher, and we anticipate full 75-car fields at each NMCA series national event. I personally invite anyone who's never been down the drag strip before because our team makes it easy for enthusiasts to enjoy their Gen III Hemi engine-powered vehicles."

The NMCA Dodge/Mopar HEMI Shootout offers enthusiasts an easy, fun experience, with personalized, step-by-step instruction available. Competitors are encouraged to race at their own pace, depending on each participant's comfort level.

Feds Investigating Nissan to See if Recall Needed

DETROIT (AP) — U.S. safety regulators are investigating complaints that a suspension part on Nissan Altimas can come loose from the frame due to corrosion.

The probe by the National Highway Traffic Safety Administration covers about 374,000 cars from 2013. The agency says it has four complaints that rear lower control arm assemblies failed. Control arms let the wheels and tires travel up and down over bumps. The complaints came from states that use salt to clear roads of ice and snow.

Nissan says it's examining data and cooperating with investigators. Any owner who suspects a problem should have their car checked by a dealer, the company said.

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Ford is exploring how self-driving vehicles can deliver good.

Tariffs Hurting Car Growth

COLUMBIA, S.C. (AP) – South Carolina is positioned to keep adding new jobs and increasing wages in 2019, but tariffs backed by President Donald Trump could hamper that growth, two University of South Carolina economists said.

The import taxes backed by the president against China and, to a lesser extent, Mexico create volatility, especially in the automotive market which is the backbone of South Carolina's manufacturing economy, Doug Woodward and Joseph Von Nessen said in their report presented Tuesday at the university's annual Economic Outlook Conference.

German automaker BMW and Swedish carmaker Volvo say their South Carolina plants may have to cut jobs or slow growth because of tariffs. And each job at an auto factory creates nearly three more in the state in the supply chain, so Chinese tariffs could cost the state 6,000 jobs, the economists said.

"At the end of the day, a tariff is simply a tax. And in this case, it is a tax that is likely to increase the final sales price of vehicles

produced in South Carolina," Von Nessen said. "This price increase, in turn, can have a negative impact on the demand for these vehicles."

Just minutes before Woodward and Von Nessen presented their report, Trump tweeted he is a "Tariff Man."

"When people or countries come in to raid the great wealth of our Nation, I want them to pay for the privilege of doing so. It will always be the best way to max out our economic power. We are right now taking in \$billions in Tariffs. MAKE AMERICA RICH AGAIN," Trump wrote on Twitter.

South Carolina is already seeing some effects of Trump's economic policies. I

ts international exports dropped after three years of general growth, a significant development in a state that has embraced international trade since the BMW plant near Spartanburg opened almost 25 years ago, the economists said.

But there are signs the president will change his policies toward Mexico and China enough to keep the darkest clouds away.

Ford Self-Driving Vehicles Being Created

After surviving a tough day at work or managing the kids' schedules, the thought of leaving the house again to run to the store can feel downright exhausting – especially if stores around you aren't conveniently located, and Ford knows that.

"At Ford, we believe the advent of self-driving vehicles opens up the potential to ease some of life's pain points and markedly expand affordable access to transportation and goods delivery," said Brian Wolf, director, Business Development, Ford Autonomous Vehicles LLC. "We're already collaborating with both national and local companies to understand how we can improve goods delivery through the use of self-driving vehicles, working to transport tacos, floral arrangements, dry cleaning and a number of other items. Now, it's time to explore how grocery delivery can help expand access to fresh food and other retail items for people all over the country, including in Miami-Dade County, where we're currently putting our comprehensive self-driving business operations to the test."

This is why Ford is teaming up with Walmart. Through this collaboration, the company is exploring how self-driving vehicles can deliver many everyday goods such as groceries, diapers, pet food and personal care items, Wolf said. Enabled by Postmates delivery as a service, the company is able to quickly set up a pilot program that explores how our self-driving vehicles can complement Walmart's existing delivery offerings. Since Postmates is already a partner of both Ford and Walmart, the companies are able to utilize Postmates' infrastructure to get this offering up and running quickly.

Already, Walmart has seen customers respond positively to its

grocery delivery option, which uses the company's trained personal shoppers to select fresh produce and other groceries for orders that are then fulfilled through Postmates and its other delivery networks.

By the end of this year, that option will be available in 800 stores across 100 metropolitan areas around the country, Wolf said. Next year, the number of stores offering delivery service is expected to double.

Like Ford, Walmart believes that self-driving vehicles have an important role to play in the future of delivery, and that true success comes from first learning how individuals want to use them in their daily lives, Wolf said.

Together, we'll be using research vehicles, designed to simulate an autonomous experience, to gather crucial data about consumer preferences and learn the best way we can conveniently connect people with the goods they need," Wolf said. "Over the next couple of months, we'll be working closely with Walmart to understand its operations, identify what goods we can feasibly transport, and pinpoint any is-

ues that may need to be addressed to successfully deliver orders via self-driving vehicles. Naturally, orders from a supermarket will tend to be larger and more varied than orders from a restaurant or dry cleaner.

"So we'll be exploring different vehicle configurations or modifications that we could make to meet people's needs – especially to accommodate perishable goods, or scenarios where our vehicles end up making multiple deliveries on a single trip."

Crafting an experience for people that's easy to understand and simple to use is critical to Ford's vision of making people's lives a little bit easier.

"We're committed to putting that effort in now instead of waiting for AVs to be on the road, having already completed more than 1,000 deliveries as part of the initial phases of building up our self-driving business," Wolf said. We're confident that working with Walmart will strengthen our effort to successfully deploy self-driving vehicles in a way that people actually want to experience – whether they're ordering takeout, groceries or anything else they might need."



FCA's Jefferson Assembly has been awarded Brozne WCM status.

Waymo Testing its Self-Driving Technology

by MICHAEL LIEDTKE
AP Technology Writer

SAN FRANCISCO (AP) – Google's self-driving car spinoff is finally ready to try to profit from its nearly decade-old technology.

Waymo is introducing a small-scale ride-hailing service in the Phoenix area that will include a human behind the wheel in case the robotic vehicles malfunction.

The service debuted Dec. 5 and marks a significant milestone for Waymo, a company that began as a secretive project within Google in 2009. Since then, its cars have robotically logged more 10 million miles on public roads in 25 cities in California, Arizona, Washington, Michigan and Georgia while getting into only a few accidents – mostly fender benders.

The company is initially operating the new service cautiously, underscoring the challenges still facing its autonomous vehicles as they navigate around vehicles with human drivers that don't always follow the same rules as robots.

The service, dubbed Waymo One, at first will only be available to a couple hundred riders, all of whom had already been participating in a free pilot program that began in April 2017. It will be confined to a roughly 100-square-mile area in and around Phoenix, including the neighboring cities of Chandler, Tempe, Mesa, and Gilbert.

Although Waymo has been driving passengers without any humans behind the wheel in its free pilot program, it decided to be less daring with the new commercial service.

"Self-driving technology is new to many, so we're proceeding carefully with the comfort and convenience of our riders in

mind," Waymo CEO John Krafcik wrote in a Dec. 5 blog post heralding the arrival of the new service.

The ride-hailing service is launching in the same area where a car using robotic technology from ride-hailing service Uber hit and killed a pedestrian crossing a darkened street in Tempe, Ariz. seven months ago. That fatal collision attracted worldwide attention that cast a pall over the entire self-driving car industry as more people began to publicly question the safety of the vehicles.

"I suspect the Uber fatality has caused Waymo to slow down its pace a bit" and use human safety drivers in its ride-hailing service," said Navigant Research analyst Sam Abuelsamid. "If people keep dying, there will be a bigger backlash against these vehicles."

The Uber robotic car had a human safety driver behind the wheel, but that wasn't enough to prevent its lethal accident in March.

Waymo's self-driving vehicles are still susceptible to glitches,

as an Associated Press reporter experienced during a mid-October ride in an autonomous minivan alongside Krafcik near company's Mountain View, Calif., headquarters.

The minivan performed smoothly, even stopping for a jaywalker, before abruptly pulling to the right side of the road. Ahead was a left-turning FedEx delivery truck. In a digital message to the two human backup drivers, the van said it "detected an issue" and it would connect to a rider support agent. Rider support didn't respond, so they switched to manual mode and returned to Waymo HQ.

At that time, Krafcik conceded to the AP that Waymo's self-driving vehicles were still encountering occasional problems negotiating left-hand turns at complicated intersections.

"I think the things that humans have challenges with, we're challenged with as well," Krafcik said. "So sometimes unprotected lefts are super challenging for a human, sometimes they're super challenging for us."



2017 Pacifica Hybrid equipped with Waymo's fully self-driving tech.

Jefferson North Assembly Earns Bronze Designation

An FCA Detroit assembly plant has medalled in work class manufacturing.

The Jefferson North Assembly Plant is the latest FCA U.S. facility to be recognized for its efforts in eliminating waste, increasing productivity, and improving quality and safety, said FCA spokeswoman Jodi Tinson.

It is the only auto assembly plant located completely within the city of Detroit and was awarded a bronze designation in the World Class Manufacturing (WCM) methodology on Nov. 14. It becomes FCA's 12th North American facility to currently hold bronze and the company's sixth facility to reach an award level since January of this year, Tinson said.

The designation recognizes the long-term commitment of more than 5,000 Jefferson North employees to making significant improvements in how they build the Jeep Grand Cherokee, Jeep Grand Cherokee SRT and Dodge Durango.

WCM is a structured and rigorous production methodology designed to make plants more flexible and competitive, Tinson said. Its principles are applied to all aspects of the plant, from quality to maintenance, cost control to logistics, with the goal of reaching zero accidents, zero waste, zero breakdowns and zero inventory.

Independent audits are conducted throughout the year to assess WCM know-how and competence as demonstrated during employee-conducted presentations.

Then a review by FCA's judges is done of projects that have

been executed across the plant, Tinson said.

Because the focus of World Class Manufacturing is to eliminate waste of all kinds, it is key to reducing the impact of the FCA production processes.

It means using resources wisely, making all FCA facilities more productive and creating clean, ergonomically-friendly workstations for employees. WCM recognizes that the employees are important to achieving the company's business objectives.

"Achieving bronze is a well-deserved honor for the team at Jefferson North," said Brian Harlow, FCA North America's vice president of Manufacturing.

"As we have been retooling and shifting production at other plants, Jefferson North has been running virtually non-stop to build some of our most popular vehicles.

"Our Jefferson North workforce is to be commended for its dedication to applying WCM principles to improve the plant's operations and embracing it as a way of life."

"Our Jefferson North workforce," said Zach Leroux, Jefferson North Assembly Plant manager, "is the reason why this plant is being recognized with the WCM bronze designation."

"Their drive to continuously improve our processes to build the best vehicles possible for our customers speaks to the character of our employees."

"It's a great achievement," said Wade Hills, the plant's UAW Joint Safety Pillar lead.

"It was a lot of hard work. Working together as a team, we achieved Bronze."

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*LEASES: Require a GM Discount, Incremental CCR Program and GM Lease Loyalty or Lease Conquest. Leases are for 24 months and 10,000 miles per year with \$999 down payment. All lease and finance offers on approved credit to highly qualified buyers through GM Financial. May not be compatible with other offers. Not all customers will qualify. See dealer for full details. Pictures are for illustrative purposes only and may not reflect model advertised. Offers end 12/31/2018.

475 SUMMIT DRIVE • 248-292-2502 • 5825 HIGHLAND RD. (M59) • WATERFORD

In 1966, Chevrolet and McLaren partnered in the Can-

Since Chevrolet's return to In-



The 2019 Indianapolis 500 is scheduled for Sunday, May 26, 2019, with practice beginning on Tuesday, May 14.

Still, Toyota will stay in the

Toyota made the high-performance Supra from 1978 to 2002, according to its website. The company plans to unveil the new Supra next month at the North American International Auto show in Detroit.

Preliminary reports indicate officers issued 770 speeding citations and 53 seat belt and child restraint citations during the crackdown, along with 64 felony arrests.

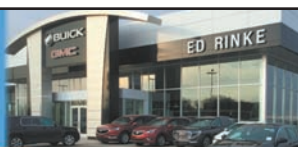
CHEVROLET

*See dealer for details. All Rebates/Incentives have been deducted from sale price/payment and are subject to change by manufacturer without notice. GM Employee discount required on Trax lease. GM Employee pricing to all on the Equinox and Silverado. The Trax and Silverado leases assume that you qualify for GM Lease Loyalty. To qualify for GM Lease Loyalty you must have a GM Lease in the household. The Equinox lease assumes that you have a Competitive Lease in the household. All lease payments are based on 10,000 miles per year. 1st payment, tax, title and plate fee due at signing on all leases unless otherwise noted. All deals expire 12/31/2018.

1153 Baldwin Rd • Pontiac • www.iimdouglasautosales.com



BUICK

GMC
WE ARE PROFESSIONAL GRADE

2017 Buick, GMC & Chevy Dealer of the Year

ED RINKE

Family Owned and Serving the Detroit Area Since 1917

100 YEARS OF BUSINESS

EXPERIENCE  THE NEW BUICK

2019 BUICK ENCORE PREFERRED
PURCHASE FOR
\$20,629*

No GM
Employee
Discount
Required

STOCK# B591965

LEASE FOR
\$149* PER MONTH | **24** MONTHS | **\$999** DOWN

2018 BUICK REGAL SPORTBACK PREFERRED
PURCHASE FOR
\$25,529*



STOCK# B480176

LEASE FOR
\$239* PER MONTH | **24** MONTHS | **\$999** DOWN

2018 REGAL TOURX PREFERRED
PURCHASE FOR
\$28,459*



STOCK# B480458

LEASE FOR
\$229* PER MONTH | **24** MONTHS | **\$999** DOWN

2019 BUICK ENVISION PREFERRED
PURCHASE FOR
\$27,209*



STOCK # B591035

LEASE FOR
\$259* PER MONTH | **36** MONTHS | **\$999** DOWN

2019 BUICK ENCLAVE PREFERRED
PURCHASE FOR
\$34,079*

No GM
Employee
Discount
Required

STOCK# B590062

LEASE FOR
\$349* PER MONTH | **24** MONTHS | **\$999** DOWN

2019 BUICK CASCADA PREMIUM
PURCHASE FOR
\$32,739*

No GM
Employee
Discount
Required

STOCK# B490075

LEASE FOR
\$469* PER MONTH | **36** MONTHS | **\$999** DOWN

GMC

WE ARE PROFESSIONAL GRADE

2019 GMC TERRAIN SLE
LEASE FOR
\$139* PER MONTH | **24** MONTHS | **\$999** DOWN



STOCK # G580417

PURCHASE FOR
\$22,439* NO GM EMPLOYEE DISCOUNT REQUIRED

2018 GMC CANYON SLE EXT CAB
LEASE FOR
\$159* PER MONTH | **24** MONTHS | **\$999** DOWN



STOCK # G582852

PURCHASE FOR
\$28,099*

2019 SIERRA LIMITED ELEVATION EDITION
LEASE FOR
\$229* PER MONTH | **24** MONTHS | **\$999** DOWN



STOCK # G581843

PURCHASE FOR
\$33,219* NO GM EMPLOYEE DISCOUNT REQUIRED

2019 GMC ACADIA SLE1
LEASE FOR
\$249* PER MONTH | **36** MONTHS | **\$999** DOWN



STOCK # G580829

PURCHASE FOR
\$26,499* NO GM EMPLOYEE DISCOUNT REQUIRED

2018 GMC YUKON XL SLT STANDARD EDITION
LEASE FOR
\$459* PER MONTH | **36** MONTHS | **\$999** DOWN



STOCK # G585078

PURCHASE FOR
\$48,839*

2018 GMC SIERRA 1500 DENALI CREW CAB
LEASE FOR
\$329* PER MONTH | **24** MONTHS | **\$999** DOWN



STOCK # G585755

PURCHASE FOR
\$41,269*

NO APPOINTMENTS NECESSARY FOR OIL CHANGES

WE'LL GIVE YOU \$3500 MINIMUM FOR YOUR 2003 OR NEWER TRADE IN

ED RINKE

Family Owned and Serving the Detroit Area Since 1917

866.452.1300

26125 Van Dyke, Center Line
www.EdRinke.com

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MON & THUR 8:30am-9pm
TUE, WED & FRI 8:30am-6pm
SAT & SUN Closed

* 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. Exp date: 12/10/2018.



2017 Buick, GMC & Chevy Dealer of the Year



ED RINKE

Family Owned and Serving the Detroit Area Since 1917

100 YEARS OF BUSINESS

2019 CHEVROLET EQUINOX LT

PURCHASE FOR
\$23,259*

LEASE FOR
\$99* PER MONTH

24 MONTHS **\$999** DOWN



GM EMPLOYEE PRICING TO ALL

STOCK# 590074

2019 CHEVROLET TRAX LS

PURCHASE FOR
\$16,119*



NO GM EMPLOYEE DISCOUNT REQUIRED STOCK# 591799

LEASE FOR
\$119* PER MONTH **24** MONTHS **\$999** DOWN

2019 CHEVROLET COLORADO WT CREW CAB

PURCHASE FOR
\$28,169*



GM EMPLOYEE PRICING TO ALL STOCK# 591715

LEASE FOR
\$159* PER MONTH **24** MONTHS **\$999** DOWN

2019 CHEVROLET SILVERADO 1500 LIMITED CUSTOM

PURCHASE FOR
\$32,449*



GM EMPLOYEE PRICING TO ALL STOCK #WKZKGH

LEASE FOR
\$169* PER MONTH **24** MONTHS **\$999** DOWN

2019 CHEVROLET MALIBU LS

PURCHASE FOR
\$19,709*



NO GM EMPLOYEE DISCOUNT REQUIRED STOCK# 490020

LEASE FOR
\$189* PER MONTH **24** MONTHS **\$999** DOWN

2019 CHEVROLET CRUZE LT

PURCHASE FOR
\$19,219*



NO GM EMPLOYEE DISCOUNT REQUIRED STOCK# 490023

LEASE FOR
\$209* PER MONTH **24** MONTHS **\$999** DOWN

2018 CHEVROLET CAMARO LT

PURCHASE FOR
\$25,059*



STOCK# 480051

LEASE FOR
\$229* PER MONTH **36** MONTHS **\$999** DOWN

2018 CHEVROLET VOLT LT

PURCHASE FOR
\$29,219*



STOCK# 480535

LEASE FOR
\$239* PER MONTH **36** MONTHS **\$999** DOWN

2019 CHEVROLET TRAVERSE LS

PURCHASE FOR
\$27,229*



GM EMPLOYEE PRICING TO ALL STOCK# WDS0TZ

LEASE FOR
\$249* PER MONTH **24** MONTHS **\$999** DOWN

FIND NEW ROADS / HURRY, OFFER ENDS 12/10/2018.

NO APPOINTMENTS NECESSARY FOR OIL CHANGES

ED RINKE

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26125 Van Dyke, Center Line (Just South of 696 on Van Dyke)

877.451.7707



CHEVROLET

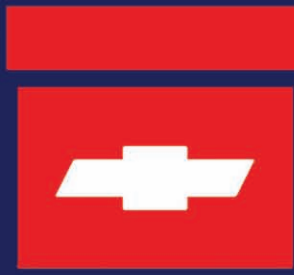


MON & THUR 8:30am-9pm;
TUE, WED & FRI 8:30am-6pm;
SAT & SUN Closed

MON & THUR 8:30am-9pm;
TUE, WED & FRI 8:30am-6pm;
SAT & SUN Closed

www.EdRinke.com

MORAN CHEVROLET



EMPLOYEE DISCOUNT FOR EVERYONE

The Price You Pay is What We Pay... Not A Cent More!

2019 EQUINOX "LT"



- Color Touch Screen Radio!
- Keyless Start and Entry!
- Rear Vision Camera!
- Heated Power Mirrors!
- Aluminum Wheels!
- Bluetooth for Phone!

Stock# K47128

24 MONTH LEASE

\$139*



EMPLOYEE DISCOUNT FOR EVERYONE!

Was \$28,370 Sale Price: **\$21,999***

\$999 Down

NQ Security Deposit required. Tax, title and plate fees extra.

0% APR Available on Select 2018 and 2019 Vehicles In Stock!*

2019 MALIBU "LT"



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

Stock# K47464

Was \$27,415 Sale Price: **\$22,999***

24 MONTH LEASE

\$199*

EMPLOYEE DISCOUNT FOR EVERYONE!



\$999 Down

NQ Security Deposit required. Tax, title and plate fees extra.

2019 SILVERADO "LT" 4X4 DOUBLE CAB

ALL STAR EDITION



- 5.3L 355HP V8 Engine!
- GM Bed Liner INCLUDED!
- Color Touch Screen Radio!
- Trailer Package!
- Remote Start and Entry!
- 18" Polished Aluminum Wheels!

Stock# K45950

Was \$45,675 Sale Price: **\$32,999***

24 MONTH LEASE

\$239*

EMPLOYEE DISCOUNT FOR EVERYONE!



\$999 Down

NQ Security Deposit required. Tax, title and plate fees extra.

2019 COLORADO 4WD CREW CAB



- 3.6L DI DOHC V6 Engine!
- Sliding Rear Window!
- Color Touch Screen Radio!
- Remote Start and Entry!
- Bluetooth for Phone!
- Aluminum Wheels!

Stock# K46657

Was \$36,595 Sale Price: **\$31,299***

24 MONTH LEASE

\$249*

EMPLOYEE DISCOUNT FOR EVERYONE!



\$999 Down

NQ Security Deposit required. Tax, title and plate fees extra.

2019 TRAVERSE "LS"



- Color Touch Screen Radio!
- Remote Keyless Entry!
- Rear Vision Camera!
- 8 Passenger Seating!
- Aluminum Wheels!
- Bluetooth for Phone!

Stock# K47290

Was \$34,070 Sale Price: **\$28,289***

24 MONTH LEASE

\$259*

EMPLOYEE DISCOUNT FOR EVERYONE!



\$999 Down

NQ Security Deposit required. Tax, title and plate fees extra.

We'll Give You a Minimum of \$2000 for YOUR Trade-In... GUARANTEED!*



RICH MILNE
rmilne@moranautomotive.com



DAVID BERCEL JR.
dberceljr@moranautomotive.com



SHOWROOM HOURS:

Monday	8:00 AM - 9:00 PM
Tuesday	8:00 AM - 6:00 PM
Wednesday	8:00 AM - 6:00 PM
Thursday	8:00 AM - 9:00 PM
Friday	8:00 AM - 6:00 PM

(586) 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, private offers, 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, CVR fees and administrative fees (when applicable) and were valid at time of printing. GM Employee discount require except where noted. Leases are 10,000 miles per year. Disposition fee may be required at lease turn in. 0% APR must finance with GM Financial. Terms and length of contract may vary. Some customers will not qualify. \$2000 minimum trade-in offer is on 2008 or newer vehicles under 160,000 miles in drivable condition. No salvage or branded titles. Certain restrictions apply, see dealer for complete details on all incentives/offers. Sale ends 12/14/2018 @ 6:00PM.

