Tech Center News

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Camaro, Volt Engines in Ward's '10 Best'

The new 3.6L V6 powering the 2016 Chevrolet Camaro and Voltec propulsion system for the 2016 Chevrolet Volt are among the winners of Ward's 10 Best Engines.

WardsAuto reviewed 31 engines from 11 automakers in this year's competition, which looked at power, fuel efficiency, new technology and refinement, and compared it with data for similar engines and propulsion systems.

This recognition is a win for our customers with improved efficiency and performance and a credit to our engineering teams and supplier partners," said Dan Nicholson, vice president, Global Powertrain.

"It isn't enough to just be good. Many of our competitors are good. At GM, we are committed to consistently delivering great propulsion systems."

"The 3.6," said Drew Winter, director, Content at *WardsAuto*, "delivers the kind of power and lusty exhaust note you associate with a V8 for the price of a V6. Plus, it's loaded with advanced technology, including fuel-saving cylinder deactivation.'

The 3.6L V6 available in the Camaro LT, produces an SAE-certified 335 horsepower and 284 lb.-ft. of torque, for the highest specific output of any naturally aspirated V6 in the segment, said Nicholson.

man Tom Read, incorporates technologies for uncompromised efficiency and performance, including direct injection, continuously variable valve timing and, for the first time, Active Fuel Management (cylinder deactivation), which disables two cylinders under light throttle applications to enhance efficiency.

Environmental Protection Agency-estimated fuel economy for the V6 with the 8-speed automatic transmission is 23 city and 28 highway mpg, Read said.

GM's Active Fuel Management system temporarily deactivates two of the 3.6L's cylinders in light-load driving conditions to enhance fuel efficiency and seamlessly reactivates them when the driver demands full power, said Read.

Noise-reducing features, including a new cam drive system, contribute to the new 3.6L being up to 4 dB quieter under lowload driving conditions than the benchmark Infiniti 3.7L V6, Read said. The 3.6L V6 is manufactured in Romulus.

And that engine system wasn't the only one receiving an award from WardsAuto, Read said. The magazine also had good things to say about GM's Voltec propulsion system, second generation. "General Motors has taken

what already is the most innova-

The engine, said GM spokes- tive and disruptive propulsion system in the auto industry and made it lighter, stronger and a lot more fun to drive. In fact, the new Voltec system delivers the impossible: an exciting electric car with zero range anxiety," Winter said.

The new 2016 Voltec system includes the drive unit, range-extending engine, power electronics and battery, Read said.

The system is capable of 53 miles of EV range, and a total driving range of more than 420 miles, said Read.

With regular charging, he said, Volt customers are expected to drive more than 1,000 miles between fill-ups. The two-motor drive unit is up to 12 percent more efficient and 100 pounds

CONTINUED ON PAGE 3



2016 Chevrolet Malibu - most digitially searched-for car, says Google.

Chevrolet Product a Big Hit With Online Car Shoppers

actually good news for the Chevrolet brand.

It's been a banner year for Chevrolet, said GM Social Media Director Craig Daitch, bringing five new vehicles to market for 2015, and consumer interest in those vehicles is reflected digital-

Google on Dec. 17 released its annual Year in Search 2015 report and four of the Top 10 trends in vehicle searches were for Chevrolet models. The 2016 Chevrolet Malibu

It's a digital world, and that's was the most searched-for car and the 2016 Chevrolet Silverado was the most searched-for truck. Daitch said.

The 2016 Chevrolet Camaro and 2016 Chevrolet Colorado were fourth and eighth respectively in overall vehicle searches by consumers.

"Search plays a tremendous role in educating customers about our products," said Paul Edwards, vice president, Chevrolet Marketing.

CONTINUED ON PAGE 2

Ford to Invest \$4.5 Billion In 13 Electrified Vehicles

Henry Ford II once told his top management team, "If you're doing something the same way you did it five years ago, you're doing it wrong.'

That philosophy seems to carry over to today in the automotive business.

Ford is making more changes now by adding 13 new electrified vehicles to its portfolio by 2020.

The Dearborn automaker is investing an additional \$4.5 billion in electrified vehicle solutions by 2020, as well as changing how the company develops vehicle experiences for customers.

This plan is all to make people's lives better by changing the way the world moves," said Raj Nair, Ford executive vice president, Product Development.

Christian Madsbjerg

usage to help maximize vehicle efficiency.

• Brake Coach, another smart

Feds Penalize BMW for Slow Move on Fix

by TOM KRISHER AP Auto Writer

DETROIT (AP) – U.S. safety regulators have slapped German automaker BMW AG with a \$40 million penalty for moving too slowly to fix Mini brand cars that failed federal crash tests.

The National Highway Traffic Safety Administration also said Dec. 21 BMW failed to send the agency accurate recall information.

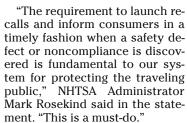
According to a consent order signed by the company, BMW must pay \$10 million in cash and

spend \$10 million on steps to get into compliance. Another \$20 million in fines must be paid if BMW doesn't comply or commits other safety violations.

BMW agreed to take steps to make sure that the violations don't happen again, the agency said in a statement.

The company said the consent order is for two years, with NHTSA having the right to extend it for a third.

It's the second fine against BMW in three years for similar problems. The agency fined BMW \$3 million in 2012.



The order resolves an investigation that began in September into whether BMW notified NHTSA within the legally required five days of finding out that 2014 and 2015 Mini Cooper

CONTINUED ON PAGE 5

Spartan Football **Fever Spreads Across Region**

The "Spirit of Detroit," an iconic monument located in the heart of downtown Detroit at the Coleman A. Young Center on Woodward Avenue, donned an oversized Michigan State football jersey, beginning on Dec. 21 to celebrate the Big Ten Champion Spartans making their first appearance in the College Football Playoff. The third-seeded Spartans (12-1, 7-1 Big Ten) will play SEC Champion and second-seeded Alabama (12-1, 7-1) on Thursday, Dec. 31, in the College Football Playoff Semifinal at the Goodyear Cotton Bowl Classic in Arlington, Texas. The game, which is slated to begin at 8:10 p.m. ET, will be televised on ESPN. Michigan State spokesman John Lewandowski said that, according to the Detroit Historical





By 2020, said Ford spokesman feature that coaches the driver Said Deep, more than 40 percent of the company's global nameplates will come in electrified versions.

This represents Ford's largestever electrified vehicle investment in a five-year period.

On the way next year is a new Focus Electric, which features a new DC fast-charge capability delivering an 80 percent charge in an estimated 30 minutes and projected 100-mile range - an estimated two hours faster than today's Focus Electric, Deep said.

The new Focus Electric, which starts production late next year, also will provide North American and European customers these features, said Deep:

• SmartGauge with EcoGuide LCD Instrument Cluster, which offers a multitude of customizable displays that can help the driver see real-time EV power

on how to use smooth braking to maximize the energy captured through the Regenerative Braking System. The more energy a driver captures through braking, the more energy is returned to the vehicle's battery.

• Fun-to-drive character, with agile steering and handling engineered into the vehicle to give drivers a more connected feel to the road.

Ford's shift to add electrified vehicle solutions answers increasing global trends calling for cleaner, more efficient vehicles, said Deep.

The Dearborn automaker is also reimagining how to set itself apart in the marketplace by focusing on the customer experience and not just the vehicle itself. The company is changing

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Spartan spirit has become the Spirit of Detroit this December.

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GM's Landfill-Free Efforts Take Another Step Forward Tech Center News

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Ford is Recalling 313,000 Models **To Fix Headlights**

DEARBORN, Michigan (AP) -Ford is recalling about 313,000 older large cars in North America because the headlights can go dark and cause a crash.

The recall covers some 2003-05 Ford Crown Victoria and Mercury Grand Marquis models.

The recall came after U.S. safety regulators opened an investigation into the problem that found 15 crashes and one injury.

The company says solder joints in the lighting control module can crack and cut off power to the headlights.

The cars were built from Oct. 3, 2001, through Aug. 2, 2005. Dealers will replace the lighting control module at no cost to owners

Owners will be notified about the recall starting the week of Jan. 18. Those with headlight problems should contact their dealer.

The National Highway Traffic Safety Administration began investigating in August after receiving a petition seeking a probe from the North Carolina Consumers Council. Investigators found 3,609 complaints to NHTSA and Ford.

Most of those complaining said their headlights failed suddenly. One driver ran off the road due to a lack of headlights, while another reported hitting a deer.

Ford said it reviewed the problem with NHTSA on Dec. 7 and decided a recall was needed.

2016 Chevy Malibu A Big Hit with **Online Shoppers** CONTINUED FROM PAGE 1

"To see Chevrolet on top of trending car and truck model searches for 2015 further emphasizes that the product, design and technologies that make up our vehicles are resonating with consumers.³

GM's plans are not to compete with Florsheim - but the automaker is making shoe soles.

Making shoe soles and washing solvent-drenched rags instead of discarding disposables are two ways General Motors is approaching its aspirational goal of becoming a zero-waste manufacturer, said GM spokeswoman Sharon Basel.

For General Motors, Basel said, going green is not just a local or American effort. GM is a worldwide company

and its environmental concerns are global as well, she said.

With the addition of six landfillfree sites in Mexico and England, the company's industry-leading landfill-free count totals 131 facilities, Basel said.

Luton Assembly and Ellesmere Port Assembly achieved landfillfree status, making all 18 Opel/Vauxhall manufacturing plants in Europe landfill-free, which means daily waste is recycled, reused or converted to energy.

The addition of two engine plants, a warehouse, and technical center at General Motor's Toluca, Mexico, complex means all of GM de Mexico assembly, engine and transmission plants plus various non-manufacturing operations - a total of 16 facilities in all - send no waste to landfills

"Our global progress in waste reduction is possible because of employee participation, creative ideas, and a strong supplier network," said Jim DeLuca, GM executive vice president of Global Manufacturing.

"Our teams understand the positive impact of this initiative and they drive it in their facilities every day."

The Toluca facilities work closely with resource management suppliers to find higher

· Spacious one & two bedroom

built-in microwave, dishwasher

Short & long term leases

& frost free refrigerators

Central air and heating.

11x15 foot storage unit

Kitchens including:

Washers & dryers

in each building.

uses for their byproducts, such as turning polystyrene foam packaging into footwear, DeLuca said.

GM takes the material to a warehouse where it is baled and sent to be crushed and densified into pellets. Those pellets are combined with other polymers to create shoe soles.

Getting all employees in a plant to sort their waste in the appropriate bins can be a challenge.

These new landfill-free sites used a variety of tools and methods to educate and inspire, from recycling courses to training videos that help employees understand the environmental benefits and business case, DeLuca said.

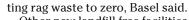
The teams conduct audits to identify improvement opportunities, and recognize employees who drive progress. Some plants designate a green champion in each part of the plant to drive participation.

Since the first General Motors plant achieved landfill-free status 10 years ago, the automaker has been continuing its efforts to improve its environmental impact by using evolving and cost-effective technologies to chip away at reducing tough waste streams, Basel said.

Hiring a waste management company specializing in challenging versus byproducts waste was key to general Ellesmere Port Assembly's success.

The partnership gave the team a better understanding of options for different material uses such as paint residue and sealants used in the car assembly process.

Ellesmere Port is also in a trial project to wash rags used to wipe up solvent instead of using disposable rags, potentially cut-



Canada

United States

lexico 16

Colombia

Argentina

Other new landfill-free facilities include the Uzbekistan Engine plant: a Chevrolet sales office in India; an IT Innovation center building (Georgia); a Howell spare parts operation; and customer care and aftersales facilities in Cincinnati, Willow Run, Rancho Cucamonga (California), Woodstock (Ontario, Canada) and Langley (Vancouver, Canada).

General Motors has teams around the world that are working toward achieving the company's goal of having 150 landfillfree sites globally by 2020, Basel said.

The company received a Top Project of the Year Award from Environmental Leader for driving a global movement for zero waste and outlines its best practices in its blueprint in "The Business Case for Zero Waste.'



GM's 131 LANDFILL-FREE FACILITIES

Italy 1

North America

South America

GM recycles, reuses or converts to energy all waste from daily operations.

Asia Pacific

Europe

Poland 3 Hungary 1 Austria 1

Uzbekistan

65

35

23

Germany United Kingdom 9

France 1

Spain 2

Macomb Community College is offering the following courses free of charge through March 2016:

3D Printing Applications

- Introduction of Additive Manufacturing 1/21/16 thru 1/22/16
- Applications of Additive Manufacturing Using Bio-based Materials - 1/28/16 thru 1/29/16

Bio Based Materials Exploration

- · Introduction of Bio-based Materials, Specifications, and Industry Applications - 1/19/16 thru 1/20/16
- Overview of Bio-based Material Productions 1/25/16 thru 1/26/16

Please contact Charles Cammarata at (586)445-7425 or cammaratac00@macomb.edu for more information or to register.

Courses customized by Wayne State University to support the initiatives of the Make It in America Challenge grant. Required paperwork must be completed prior to attending.





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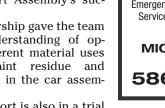


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Google's "Year in Search" is a list comprising its top trending search queries that had the highest share of web traffic over a sustained period throughout 2015 as compared to 2014, Daitch said.

Car shoppers use multiple devices, including mobile to research models, find offers and get real-time advice.

According to Google, 69 percent of people who search YouTube while buying a car were influenced by the site - more than TV, newspapers or magazines.

Google's records show that interest for the Malibu peaked in April of 2015, but stayed strong from July through December, with searches reaching their autumn peak in the week of Dec. 13-19.

Comparing the Malbu with the 2016 Silverado, the truck searches began rising in July of 2015, hitting their peak in the week of Oct. 25 through Oct. 31.



Tech Center News

DECEMBER 28, 2015

COVERS THE TECH CENTER AND THE IMMEDIATE AREA

Detroit Entrepreneur Builds On 'vs. Everybody' Market

Chevrolet Camaro is a matter of the style of the original Detroit style. And now that style can extend to the way the driver dresses

That sentiment is expressed in a line of "Camaro vs. Everybody" apparel by Detroit-based designer and entrepreneur Tommey Walker. Jr.

team set out to transcend the traditional 'pony car' and deliver a world-class performance car, regardless of segment," said Steve Majoros, marketing director for Chevrolet cars.

'The Camaro is a worthy contender for any performance car, which is perfectly summed up by Tommey Walker's trademark design.'

Available through detroitvseverybody.com, the official Camaro

It can be said that driving a vs. Everybody apparel echoes vs. Everybody clothing line, Maioros said.

Walker, 29, launched his business three years ago and prints the T-shirts, sweatshirts and other clothing items in a warehouse in Detroit.

The "Vs. Everybody" theme, "With the all-new Camaro, the Majoros said, has become both a cultural phenomenon and an iconic representation of Detroit's reinvention. "Camaro vs. Everybody" is the first automotive license of Walker's trademark design.

"Detroit vs. Everybody started as a way to express pride in my hometown," said Walker. "Camaro vs. Everybody serves the same purpose for Camaro fans. who know their favorite sports car is second to none."

Charity Preview is more than

the elegant gowns, tuxedos and

parties, Sabatini said, it's about

giving back and supporting chil-

dren's charities in Southeast

Michigan. Since 1976, the Charity

Preview has raised more than

\$100 million for Southeastern

Michigan children's charities -



Detroit entrepreneur Tommey Walker brings attitude to Chevy clothes.

Art Van Holds Blood Drive

During this season of giving, there is still time to give one of the most important and priceless presents of all - the donation of lifesaving blood.

Art Van Furniture, FOX 2 TV and the American Red Cross are hosting their sixth annual community blood drive on Monday, Dec. 28, from 8 a.m. to 2 p.m. at Art Van Furniture's Corporate Training Center at 6500 E. 14 Mile Road in Warren, said Art Van spokeswoman Diane Charles.

"Donating blood is such a simple process, and a single, selfless donation can save multiple lives," said Gary Van Elslander, president of Art Van Furniture. "Over the past five years, Art Van employees, our guests, FOX 2 viewers and metro Detroiters have donated blood during this important event to support the efforts of the American Red Cross.'

Donors must be at least 17 years old (or 16 years old with parental consent), weigh a minimum of 110 pounds, and must present a valid picture ID. Those interested in donating can call (800-RED-CROSS), 800-733-2767 Charles said.

Camaro and Volt Engines Listed in Ward's '10 Best'

CONTINUED FROM PAGE 1

lighter than the first-generation, Read added

The ability to use both motors helps deliver a 19 percent improvement in electric acceleration from zero to 30 mph (2.6 seconds) and a 7 percent improvement from zero to 60 mph (8.4 seconds), said Read.

The all-new 1.5L range extending engine with direct injection is designed to use regular unleaded fuel and offers a combined EPA-estimated 42 mpg, Read said.

The Volt uses an 18.4 kWh battery system featuring revised cell chemistry developed in conjunction with LG Chem.

While overall system storage capacity has increased, the number of cells has decreased from 288 to 192 as the result of the revised chemistry, Read said.

The cells are positioned lower in the pack for an improved (lower) center of gravity and the overall mass of the pack is 21 pounds lighter.

The Voltec drive unit is manufactured at GM's Warren transmission plant.

The 1.5L range extender is manufactured at GM's Toluca, Mexico, engine plant and will transfer to the Flint engine plant in the second half of 2016. The battery pack is assembled in Brownstown.

Axalta Hosting Charity Ball

Axalta Coating Systems, a Mt. add to our charity celebration." Clemens global supplier of coatings to the automotive industry. has signed on to be the Presenting Sponsor of the 2016 NAIAS Charity Preview.

The event is recognized as the largest single-night fundraiser in the nation and will occur on Jan. 15 at Cobo Center in Detroit, said Axalta spokesman John Wray.

"The Charity Preview is truly a remarkable experience and we're thrilled to have Axalta involved as our Presenting Sponsor," said Paul Sabatini, 2016 NAIAS chairman

"Axalta is world-renowned for its color expertise and we look forward to seeing what flare they

more than \$43 million of which was raised in the last 10 years alone. More than 13,000 people attended the 2015 NAIAS Charity Preview and helped to raise just over \$5.3 million, Sabatini said. Proceeds directly benefit a wide

range of children's charities in

southeastern Michigan.





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The Side by Side Ranch and Loft Duplex Condos located at 12 Mile & Mound in the Heritage Village Subdivision include 2-3 bedrooms, 2-3 Baths, 2 Car Garage and Optional Finished Basements. Features include First Floor Master, Full Basement, Cathedral Ceilings, Granite Counters at Kitchen, Ceramic Tile at Bath & Laundry, GE Electric Range, Dishwasher & Microwave, Oak Flooring at Foyer, Kitchen & Nook, Gas Fireplace at Great Room, Walk In Closets, Central Air, Walking Trails, Snow Removal & Lawn Care.



have



"This is a watershed moment. said Democratic state Sen. Pat Spearman, whose district encompasses part of recession-battered North Las Vegas, where the plant will be built. "I will be happy to go back to my constituents and say the darkness that has overshadowed us has lifted." The deal comes a little more than a year after state lawmakers approved a \$1.3 billion incentive package to land a massive Tesla battery factory outside of Reno. Nevada officials said the deals are reshaping and diversifying the state's economy after decades of tying its fate to casi-"We're proud of our mining, we're proud of our gaming, we're proud of all those anchor tenants that we've had in our state," the Republican governor said before signing the bills. "But the world's changing. And I know that you agree with me that we're not going to let it pass us by.

Ford Investing Billions of Dollars in Green Technology

CONTINUED FROM PAGE 1

its product development process to support the shift.

"The challenge going forward isn't who provides the most technology in a vehicle," said Nair, "but who best organizes that technology in a way that most excites and delights people.

'By observing consumers, we can better understand which features and strengths users truly use and value and create even better experiences for them going forward.

In addition to traditional market research, Nair said Ford is investing in social science-based research globally, observing how consumers interact with vehicles and gaining new insights into the cognitive, social, cultural, technological and economic nuances that affect product design.

This new way of working brings together marketing, research, engineering and design in a new way to create meaningful user experiences, rather than individually developing technologies and features that need to be integrated into a final product,' Nair said.

We are using new insights from anthropologists, sociologists, economists, journalists and designers, along with traditional

business techniques, to reimagine our product development process, create new experiences and make life better for millions of people."

Next year, Ford is doubling the number of projects that use ethnographic research, Nair said.

The team of social scientists already has spent months exploring topics such as the future of luxury transport, how people form relationships with their cars and the role of trucks in the American heartland.

ReD, a social science-based strategy consultancy, has been innovating with consumer goods and pharmaceutical companies for a decade. ReD started working with Ford - its sole automotive client - in 2012, Nair said.

During the past three years, the team has invested more than 4,000 hours with thousands of vehicle users in more than 25 cities worldwide, taking 80,000 photos, nearly 3,000 hours of video and more than 8,000 pages of field notes, feeding countless insights to improve the product creation process.

"For 70 years, market research has been done by asking people for their opinion. But Ford has always been fundamentally skeptical about that," said Christian Madsbjerg, founder of ReD Associates and author of the book, "The Moment of Clarity."

"(Company founder) Henry Ford used to say, 'If I asked people what they wanted, they would have asked for a faster horse.

"I chose to work with Ford because this approach is in their DNA and is setting the company at the forefront of this advanced and bold process, which is redefining market research and silo-busting the way the company operates.'

Another new twist to the product development process is that designers no longer sketch just products but also full customer experience illustrations that visualize the experience each product is meant to deliver, Nair said.

The series of vignettes, he

said, define a unique user journey that seamlessly integrates both hardware and software experiences.

This user experience design technique, said Nair, also plays an important role in developing the Ford Smart Mobility plan, which is designed to take the company to the next level in connectivity, mobility, autonomous vehicles, the customer experience and data and analytics.

"As both an auto and a mobility company, we at Ford are going further than just designing the product to move people from point A to point B," Nair said.

"We are considering the way customers interact with our vehicles as a unified experience, looking for ways to excite and delight customers and make their lives better.'

streets intersect at strange an-

gles that prevent the driver from

friends and family can be notified

of the driver's location so that a

While the future of truly auto-

mated driving is a long-term de-

velopment, Fosgard said, Delphi

currently engineers and manu-

factures advanced systems that

integrate cameras, radars, sen-

sors and software to increase

first original-equipment V2V

technology will appear on the

Super Cruise system on the 2017

Cadillac CTS. At CES, Delphi will

unveil another industry-first with

an aftermarket V2V unit that will

enable all equipped vehicles to

talk with one another - not just

those built with the technology

Delphi will also use CES to

demonstrate several of its latest

advanced technologies including

a touch-free cockpit and 3D in-

strument cluster, Fosgard said.

Delphi's touch-free cockpit uses

hidden infrared cameras to track

eye movement to detect what a

driver is looking at and infers

what action should be carried

out by the infotainment system.

Next year, Delphi's industry-

• Ride Sharing: The driver's

seeing opposing traffic.

ride can be requested.

road safety.

in the factory.

NHTSA Hits BMW Hard with Penalty **Over Safety**

CONTINUED FROM PAGE 1

models failed to meet side-impact crash standards.

According to NHTSA, a Mini two-door Hardtop Cooper failed an agency crash test in October 2014, and BMW responded by saying that the car was listed with an incorrect weight rating and would pass at the proper weight. Lighter cars face lessstringent crash tests.

BMW agreed to a recall to fix the weight rating label on the cars, and to do a service campaign, which is short of a recall. to add side-impact protection.

But in July of this year, NHTSA did a second crash test at the corrected weight rating, and the Mini failed again. Then the agency found out that BMW never did the service campaign to bolster side-impact protection.

In the consent order with the agency, BMW acknowledged that it didn't do the recall quickly enough, according to NHTSA. The company also acknowledged moving too slowly to notify owners and dealers of other recalls since it was fined in 2012, NHTSA said.

The BMW penalty caps the first year in office for Rosekind, who has made the agency more aggressive in enforcing auto safety laws since taking over last December in the midst of the General Motors ignition switch scandal

Earlier in the year, the agency fined Fiat Chrysler twice for failing to report safety violations and for failing to tell the agency about deaths and injuries involving its vehicles. The total penalty against the company is \$175 million, although Fiat Chrysler can avoid much of it by complying with the agency's demands.

NHTSA also fined air bag maker Takata Corp. \$70 million, with the potential to grow to \$200 million, for concealing evidence that air bag inflators can explode with too much force and hit people with shrapnel.

Last year, General Motors was fined \$35 million by the government for concealing the problem ignition switches.

Ford Stepping in to Help **Close Gender Gap in STEM**

taking for women who are interested

Because of that, said Ford spokesman Todd Nissen, Ford Research and Innovation Center Palo Alto is joining with Girls Who Code to help close the gender gap in technology and engineering fields.

As part of the collaboration, Ford Motor Company Fund, the philanthropic arm of Ford, will support the education and professional growth of Girls Who Code club members in Northern California, serving more than 180 young women in grades six to 12 in the Bay Area, Nissen said.

The Ford Palo Alto team will provide mentorship and instruction to club members, and help them engage in hands-on experience at the company's Silicon Valley research lab.

"The use of technology is growing exponentially among young people, yet it is becoming increasingly difficult to attract them to technology-related educational programs," said Marcy Klevorn, Ford chief information officer.

"Ford is working with Girls Who Code to educate them on the many exciting career opportunities available in the fields of science, technology, engineering and

STEM jobs are there for the ties connecting the company and employees directly its with youth and the community.

Ford's national STEM efforts include working with colleges, high schools, founding academies for high school-age students, a high school science and technology program, sponsorship of FIRST Robotics teams and scholarship funding, Nissen said

The number of technology-related degrees awarded in the United States is rising, but men alone cannot meet the demand. U.S. Bureau of Labor Statistics predicts jobs in tech fields will grow to more than 9 million by 2022 – an increase of about 1 million jobs since 2012. Women must close the gap, said Klevorn.

Yet with only 0.4 percent of high school girls selecting computer science as a college major, it is essential to inspire young women to pursue higher education and careers in technology, Nissen said.

"We are especially excited at this expanded collaboration because Ford is an institution with longevity in STEM careers for women," said Reshma Saujani, founder and CEO, Girls Who Code

"The support will enable us to further our mission of providing young women with the resources necessary to one day work for Ford or any number of other technology companies."

• Vehicle-to-traffic light: With

nications (DSRC), Delphi's vehicle knows the status of traffic lights around Vegas and will anticipate yellow and red lights.

Fever Spreads Across Region



Delphi Plans Big CES Show Three months after its introcle manages for situations when

duction at CES 2015, Delphi's automated vehicle completed the longest automated drive in North America - traveling from San Francisco to New York. For its CES 2016 encore, Delphi is taking active safety and automated driving to the next level incorporating vehicle-to-everything – V2E - capabilities, said Delphi spokesman Scott Fosgard.

Using new software and hardware, Delphi's vehicle can communicate with streets, signs, traffic lights, other cars and even pedestrians, Fosgard said.

'We imagine a world with zero traffic accidents," said Jeff Owens, Delphi chief technology officer. "To get there we will need a convergence of active safety, sensor fusion, connectivity platforms and advanced software. Delphi has proven we are the only company that has the right mix of all of these.'

During CES, Delphi's automated vehicle demonstration V2E tech includes:

• Vehicle-to-vehicle: Delphi's car can see all the cars in the immediate vicinity and can detect when an adjacent car abruptly decides to get into the same lane as the Delphi car.

• Vehicle-to-pedestrian: Leveraging a special chip in a smart phone, the vehicle is alerted to pedestrians who are not paying attention to traffic as they use their phone.

Dedicated Short Range Commu-• Blind Corners: Delphi's vehi-

Spartan Football

math. This kind of outreach grows more important each year."

Women are especially underrepresented in the tech industry, making up just 18 percent of computer science graduates in the United States. That is down from 27 percent in 2001 and from 37 percent in 1984. Nissen said.

Ford's work with Girls Who Code is part of its expanding community commitment in Northern California. Earlier this year, Ford and Ford Fund announced an investment of more than \$1 million in education, safety and disaster relief in a new initiative with Northern California Ford dealers.

Ford's national commitment to science, engineering, technology and math education began more than 30 years ago. Its ultimate goal is to inspire interest in technology and innovation, which is not only critical to Ford, but to the world's future development. By supporting education in these areas, Ford can create opportuni-

Through its summer immersion program and club programs throughout the country, Girls Who Code is leading the movement to inspire, educate and equip young women with the skills and resources to pursue academic and career opportunities in computing, Nissen said.

By pairing instruction in robotics, Web design and mobile development with mentorship and access to top engineers, Girls Who Code aims to close the gender gap in technology and expose students to real-life role models, said Saujani.

"We are pleased to support an organization that mirrors our developing commitment to young minds and inspiring them to work in STEM-related careers," said Dragos Maciuca, Ford technical director, Research and Innovation Center Palo Alto.

CONTINUED FROM PAGE 1

Society, the "Spirit of Detroit," which was dedicated in 1958, was the largest cast bronze statue (26-foot sculpture) since the Renaissance at the time it was built. The statue often features jerseys of Detroit's professional teams during the playoffs. It marks the first time the "Spirit of Detroit" statue has worn a Spartan jersey.

"It's truly exciting to know the Spartan jersey will be worn by the 'Spirit of Detroit' statue," MSU Athletic Director Mark Hollis said.

"It's a public symbol of support for our football program as it prepares for the College Football Playoff Semifinal against Alabama, and I'm positive many MSU alums will stop by the statue to pose for photos. The sustained success of our football program has energized the entire university and our fan base."

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GM Foundation Grants \$2.8M to Universities

The General Motors Foundation has issued grants totaling more than \$2.8 million in 2015 to support 31 universities and organizations across the country through its University/Organization Partner Program.

The initiative provides funding to advance post-secondary education in science, technology, engineering and mathematics (STEM) to help more students graduate with STEM-related degrees, said GM Foundation spokeswoman Genna Young. The funds also support design and manufacturing degree programs, diversity initiatives, student organizations and career development resources.

"Technology and innovation are our future," said Jackie Parker, president of the GM Foundation and director of GM Global Philanthropy and Corporate Giving. "Through this program, we're fostering skills and education that the next generation of leaders and innovators will need

to succeed and compete globally."

The GM Foundation has awarded \$16.6 million in grants through the University/Organization Partner Program since 2011, Parker said.

This year's list of GM Foundation grant recipients include these Michigan schools: Lawrence Technological University, Michigan State University, Michigan Technological University and University of Michigan.

Since its inception in 1976, the GM Foundation has donated hundreds of millions of dollars to American charities, educational organizations and to disaster relief efforts worldwide, Young said.

The GM Foundation focuses on supporting Education, Health and Human Services, the Environment and Community Development initiatives, mainly in the communities where GM operates. Funding of the GM Foundation comes solely from GM.

\$52M OK'd for Events Center

The Downtown Development Authority has approved nearly \$52 million in new contracts for work on the new Detroit Events Center.

The approval raises the total dollars of contracts awarded for the massive catalyst development project to more than \$257 million.

The Olympia Development of Michigan (ODM) released the information, stating that ODM had recommended the move.

As part of the contracts awarded Dec. 22, Detroit-based Motor City Electric earned a \$16 million contract for electrical work for the new arena, and Detroit-based Ideal Contracting earned an \$11 million contract for additional foundation and steel work.

MSL/Limbach JV was awarded a \$24 million contract for mechanical and plumbing work and also earned smaller contracts for \$338,000 for pre-construction mechanical, electrical and plumbing services, and \$493,000 for mechanical and HVAC services.

In other news, the *Associated Press* reported that Meijer and Saint Joseph Mercy Health System will be sponsors of the Detroit Events Center.





Experts Will Discuss Issues Of Modeling, Lightweighting

The Modeling Simulation & senior technical specialist of Crash Safety 2016 Congress is meeting Jan. 26-27 at the Detroit Marriott Troy Hotel.

The conference will deliver more than 20 OEM-led presentations and panels from the likes of Ford, Honda, Toyota, GM and more with the focus on modeling and simulation of lightweight materials, economizing lightweight manufacturing & design processes and optimizing virtual testing, said event spokesman Jon Shepherd.

It's the only OEM-led congress encompassing cost-effective modeling, crash simulation and lifecycle prediction for lightweight materials and composites, Shepherd said.

Among the topics of discussion will be:

• Composite failure prediction. Dr. Venkat Aitharaju, Senior Researcher, Polymer Composites, General Motors, will talk about predicting crash performance and failure states in composite materials to minimize the costs of physical testing.

• Modeling anisotropic extruded aluminum. Anthony Smith, Computer Aided Engineer (CAE) for automotive safety at Honda R&D will explain and illustrate changes to anisoptropic extruded aluminum models to improve simulative accuracy and robustness.

• Magnesium alloy fracture prediction. Steven Sheng, a formability engineer at GM, will talk about predicting fracture in warm-forming magnesium alloy sheet material by using FEM forming limit to surface to facilitate magnesium alloy usage in lightweighting.

• Composite joining failure simulation. Dr. Mingchao Guo, body durability at Fiat Chrysler, will talk about fatigue property tests and durability CAE modeling activities for Ultra High Strength Steel (UHSS) and aluminum to facilitate reliable simulated testing.

• Material joining simulation. Eric DeHoff, principal engineer at Safety CAE for Honda R&D, will discuss evaluating connection properties across the entire lightweight material spectrum to optimize joint efficiency in multimaterial applications.

To learn more about the event, go to www.modeling-simulationlightweight-materials.com.

2015 Expected to Set Record for **Light Vehicles**

New light-vehicle sales in December are expected to be the strongest of any month since 2005, with 2015 on track to set an annual record with 17.5 million sales, according to a monthly sales forecast developed by J.D. Power and LMC Automotive.

New-vehicle retail sales in December are projected to reach 1,400,100 units, while total lightvehicle sales are expected to reach 1,712,200, both a 6 percent increase on a selling-day adjusted basis, compared with December 2014, said JD Power spokesman John Tews. Both sales volumes are also the highest since July 2005.

With a strong close, 2015 is expected to set a total light-vehicle sales record of 17.5 million units, topping the previous high of 17.4 million in 2000.







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Chevrolet completed another successful year in motorsports in 2015, earning six manufacturer and five driver championships in NASCAR, IndyCar, NHRA, United SportsCar Championship and Pirelli World Challenge series.

In addition, Chevrolet drivers won several noteworthy races in 2015, including the Indianapolis 500, IndyCar Dual in Detroit, NHRA U.S. Nationals, the 24 Hours of Le Mans, Rolex 24 Hours at Daytona, and the manufacturer's first overall victory in 50 years at the 12 Hours of Sebring, said Chevy spokesman Randy Fox.

"Winning championships and key races are two goals we have every season," said Jim Campbell, Chevrolet U.S. vice president of Performance Vehicles and Motorsports. "What we learn on the racetrack helps us build better vehicles and powertrains for the showroom. Winning races and championships helps elevate brand opinion and image. Consumers are more likely to place our cars and trucks on their shopping list."

Chevrolet's wins in 2015 came on road courses, ovals and drag strips. Season highlights include:

• IndyCar – The Chevrolet 2.2 liter, direct-injected, twin-turbo V6 IndyCar engine combined with the new-for-2015 Chevrolet aero kit to produce 16 poles and 10 wins in 16 races en route to Chevrolet winning the Manufacturers' Championship for the fourth consecutive year. Scott Dixon won the Driver Championship, and Juan Pablo Montoya won the 99th running of the Indianapolis 500.

• NASCAR Sprint Cup – Chevrolet won the Manufacturers' Championship for a recordextending 13th consecutive year and 39th time overall, more than any other manufacturer. Team Chevy drivers scored 15 race wins. Chevrolet became the first manufacturer to reach 750 alltime wins in the series when Kevin Harvick reached victory lane at Dover (Del.) in October.

Mazda Names Moro as CEO And President

Mazda North American Operations (MNAO) appointed Masahiro Moro to the position of president and CEO. Moro, a Managing Executive Officer of Mazda Motor Corporation, will take over from Jim O'Sullivan, the company's long-serving outgoing president, who will be retiring from the company.

The changes were announced Dec. 21 to company employees,





and will be effective Jan. 1, 2016. Moro will be responsible for overseeing all aspects of the company's operations in the U.S., Mexico, Puerto Rico, and the Virgin Islands, including sales, marketing, parts and service, logistics, communications, customer support and regional operations, said Mazda spokesman Jeremy Barnes.

O'Sullivan joined MNAO as president and CEO in 2003, and also held the title of Managing Executive Officer of Mazda Motor Corporation. During his 13year tenure with MNAO, Barnes said. O'Sullivan cemented his reputation as a trusted and widely respected industry expert, with a particular eye toward the importance of the dealer body in supporting the sales and customer satisfaction requirements of the auto industry in the U.S. O'Sullivan was the longest-serving senior executive of any car company in the U.S. at the time of his retirement.