Tech Center News...

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Rami Debouk

GM Researcher Awarded for Defining Safety Standards

GM's Rami Debouk has re- Washington, D.C. in late July. ceived the 2014 Society of Automotive Engineers (SAE) Inter-Regs Standards & Regulations Award in recognition of his research, analysis and development of system safety processes and standards.

Debouk works in the General Motors Research and Development Center at the Tech Center in Warren.

The prestigious award was presented at this year's SAE Government/Industry Meeting in ISO 26262 – Functional Safety for

Debouk said he received the award for his work in helping establish international safety standards for the ISO (International Organization for Standardization). The group was founded in 1947 and promotes worldwide proprietary, industrial and commercial standards.

Debouk's project, ISO 26262, got its start in 2005 and was completed in 2011.

"The full name of the project is

developed ways to define safety issues for functional automobile features.'

A functional auto feature, Debouk said, is something like cruise control. While it is now a common feature in cars, before it could be introduced, safety definitions had to be created and safe ways to design, build and implement cruise control had to be created.

That's what ISO 26262 did, Debouk said, adding that interest in

Road Vehicles," Debouk said. "We functional auto features has only grown since the introduction of cruise control.

"Today's cars are much more complicated," he said. "Cars have gotten more international."

To create new safety definitions and protocols, 50 experts from about 10 countries around the world worked on 26262, Debouk said.

He was GM's representative on the committee and was one of

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Fordsell, M-TEC Work to Clean Up Plant

For Warren-based Fordsell Machine Products, getting clean meant going back to school, in this case Macomb Community College's M-TEC.

David Redfield, president and co-owner of Fordsell, said the decision to modernize the facility started with the need to meet the stringent cleanliness requirements of a specific customer who makes hydraulic control valves. That, in turn, led management to think more broadly about how the plant should look and operate.

"We're talking about not having any grease stains or particulates on the parts," said Redfield. "For our customer, clean means having us meet their specs,

which went to down to the level of particulates measurements."

He said Fordsell Machine Products Co. is a manufacturer of custom, precision-turned parts and assemblies, and they had a vision for growth. It started with transforming the company's plant on Ryan Road into a cleaner, better-lit and more modern environment.

The rehab project would turn out to be more than a facelift. It would facilitate other changes, ultimately making the entire operation more efficient, more productive and a better place to

Achieving those goals required expertise Fordsell did not have in-house, Redfield said. That's

where Macomb Community College's M-TEC expertise came in.

M-TEC is the college's headquarters for its engineering and advanced technology workforce and continuing education team. It works with businesses from small startups through large corporations, providing consulting services, and workforce training and education solutions.

M-TEC is a 40,600-square-foot facility providing education and training in advanced integrated manufacturing, automated systems and robotics. The group works across multiple industry sectors and in collaboration with employers to develop and deliv-

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David Redfield, co-owner of Fordsell Machine Products of Warren.

Baseball, Hot Dogs, Apple Pie and Chevrolet; Trout Snags 2014 Stingray as All-Star MVP

All-Star game last week, he couldn't take his eyes off the 2014 Corvette Stingray parked to his right.

The Stingray was one of two vehicles offered by Chevrolet the other being a 2014 Silverado pickup - to be chosen by the game's Most Valuable Player.

Trout chose the Stingray.

Los Angeles Angels outfielder Trout won the award after pounding out a double, a triple and two RBI in the American League's 5-3 win over the National League.

Chevrolet, the official vehicle of Major League Baseball since 2005, capped the presentation when Chevrolet Marketing's U.S. Vice President Paul Edwards announced it would provide a second Stingray for auction at ChevyBaseball.com, a website powered by MLB.com. Auction proceeds will benefit charity.

'We honor the achievements of Mike Trout, the 2014 All-Star Game Most Valuable Player, while we showcase our own MVPs, the Corvette Stingray and Chevrolet Silverado," said Edwards. "We hope many of our fellow baseball fans join us to help raise funds for a worthy cause."

The Stingray being auctioned features both an autographed display hood signed by 2014 All-Star players and coaches and a factory original hood for driving.

Bidding on the Corvette Stingray opened immediately following the MVP ceremony, and will continue until 5 p.m. EDT on

In addition to the Stingray for

When Mike Trout was an- auction on ChevyBaseball.com, nounced as the MVP of baseball's Chevrolet will provide MLB and the Major League Baseball Players Association with a commemorative Corvette Stingray hood, also signed by 2014 All-Star players and coaches, for auction with proceeds to benefit MLB Charities and the Players Trust, the charitable organization adminis-

tered by active Major Leaguers.

Nearly 1,700 Chevrolet dealers support youth leagues in communities across the country and have hosted more than 200 youth baseball clinics this year.

Currently in its ninth year, Chevy Youth Baseball has affected the lives of approximately 3.8 million youth.



Trout and Edwards with bat trophy and 2014 Corvette Stingray

Photo by Ron Vesely/MLB Photos



Ford's Raj Nair with 2015 Mustang

Mustang Marks 50 Years By Meeting 'High Targets'

by Jim Stickford

When it came to designing the 2015 Mustang, Ford set the bar high and the company cleared it, said Raj Nair, group vice president, Global Product Development at a special media briefing July 17.

As the car celebrates its 50th anniversary, Nair had some high praise for the new version.

"We knew that the end result for the 2015 Mustang had to be the best experience anyone ever had with a Mustang," Nair said. "So we set some really high targets for the 2015. And we met those targets for performance and ride.'

Nair said the 2015 Mustang is meant to be a truly international car. There are about 160,000 of them that have been sold outside the North American market, but the 2015 is meant to be an international car.

"When we spoke with our international customers, they told us the same thing that our North American buyers did - they wanted everything that people associated with a Mustang, but they wanted it to be modern.

"So we kept the long hood and short rear deck. Even the exhaust system was designed to give you feeling of being on an instant vacation, the feeling of instant freedom on four wheels.

"Our Mustang drivers want exceptional performance while still being able to use it as their everyday car."

So all the efforts to meet the new performance targets, Nair said, has resulted in an all-new platform. Getting everything to line up wasn't easy, he said.

"Me as head of product devel-

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Contact us:

Info@TechCenterNews.com

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Mary Barra Again Testifies Before U.S. Congress

WASHINGTON (AP) – Lawmakers Thursday demanded General Motors fire its chief lawyer and open its compensation plan to more potential victims as a Senate subcommittee delved deeper into GM's mishandling of the recall of small cars with defective ignition switches.

Sen. Claire McCaskill, D-Mo., chairwoman of the subcommittee, praised GM CEO Mary Barra, saying she "has stepped up, and with courage and conviction has confronted the problem head on and the corporate culture that caused it."

But McCaskill also put Barra on the spot, telling the CEO she should have fired GM's corporate counsel, Michael Millikin, based on the conclusions of an internal report by outside attorney Anton Valukas. Millikin sat next to Barra as she defended him as a man of "tremendously high integrity."

The Valukas report found GM's legal staff acted too slowly to share details of settlements it was making in cases involving Chevrolet Cobalts and Saturn lons where the front air bag hadn't deployed in a crash, possibly due to a defect in the ignition switch. The lawyers didn't alert engineers or top executives to a potential safety issue.

She also questioned why Millikin didn't inform GM's board or the U.S. Securities and Exchange Commission of the potential for punitive damages as GM settled the cases, saying, "this is a either gross negligence or gross incompetence on the part of a lawyer."

Barra said Millikin had a system in place but it failed. Some lawyers were among the 15 people the company let go based on Valukas' report.

Millikin said he only learned about the ignition switch problems in February and acted quickly once he did. He said any potential settlement, no matter how small, must now be brought to him before any action is taken

But Sen. Richard Blumenthal, D-Conn., also called for Millikin to be fired, saying that an ongoing Justice Department investigation will likely find evidence of "cover-up, concealment, deceit and even fraud" within GM's legal team.

GM has admitted it knew about the faulty switches for more than a decade before recalling the cars. It took years for GM engineers to connect the switch problem to the failure of front air bags to deploy in certain crashes.

GM recalled 2.6 million small cars beginning in February. That recall prompted an unprecedented safety review within the company, which has since issued 54 separate recalls for 29 million vehicles. Corporate counsel Michael Millikin also acknowledged that the attorneys dismissed from GM received a retirement package based on the salary they would have made if they hadn't been terminated.

GM Researcher Awarded for Defining Safety Standards

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five representing the United States.

There were about 18 face-toface meetings of committee members over the six-year period that they worked on 26262, Debouk said.

"Of course, not everyone went to every meeting," Debouk said. "Then we also had separate subcommittee meetings. We were in constant contact with each other, thanks to things like email and conference calls."

There were a lot of changes in the auto industry during those years, Debouk said. But they had a deadline, which was good because, without one, those industry changes would have kept them at the table forever.

"Eventually, you just have to turn something in," Debouk said. "Now that the industry has had the standards for a few years, we will reexaminie them again in 2015."

Fine-tuning of standards isn't unusual, Debouk said. Especially since there are now years of real-world data to look at. OEMs and suppliers have now accumulated information that can become the basis for revised and improved standards.

United Kingdom-based Inter-Regs has been promoting vehicle safety for a number of years by recognizing the work of engineers in the global automotive industry, Debouk said. They have worked closely with the SAE to honor the engineers who have made strides in issues of safety.

The award isn't always given to automotive engineers, he said. In the past, they've honored people in the aerospace industry and the government.

Among the presenters was In-

terRegs CEO Rebecca Rubio. SAE President Daniel Hancock presented the engraved award trophy to Debouk.

"Each year, it's such a privilege to meet and present this award to an engineer whose work takes the plain words on a page of vehicle regulations or standards and uses them in real-life applications that will either help to protect people or the planet," said Rubio

"Mr. Debouk's work in the safety field is no exception and he is a worthy winner. I am delighted to recognize his contributions and celebrate his achievement in an area that does not always get the attention it deserves."

Debouk, as a researcher for GM, has had several papers published by the SAE and said he is working on how technical systems that consist of a whole variety of systems can safely inter-

act.

That's important, he said, because people often assume that because all the component systems of something like a powertrain and steering system work, the whole system will work. That's not true, he said, because getting a variety of different systems to work together isn't as easy as it looks.

But the development of these technologies can make autonomous driving a distinct possibility in the near future Debouk said.

"I was nominated for this award by my manager and it's a great honor to win it because it's an individual award," Debouk said.

"But the work done on 26262 was done by a lot of people who worked hard. My colleagues who worked with me also deserve some praise."

Volkswagen to Produce Midsize SUV in Chattanooga

Volkswagen Group is expanding its industrial footprint in the United States as part of its Strategy 2018 plan.

The Board of Directors of Volkswagen Group of America has decided to award the production of the new midsize SUV to the Chattanooga plant in Tennessee, said company spokesperson Carsten

The company invested about \$900 million in the production of a newly developed, seven-passenger SUV, and created 2,000 additional jobs in the U.S. About \$600 million will be invested in Tennessee.

"The United States of America is and will remain one of the most important markets for Volkswagen," said Dr. Martin Winterkorn, chairman of the board of Management of Volkswagen Aktiengesellschaft, in Germany.

"Over the past few years, we have achieved a lot there (in America). We are now launching the second phase of the Volkswagen campaign in the U.S. With the midsize SUV, the expansion of the Chattanooga plant and the new development center, the focus is on the wishes of the U.S. customer. This is also a strong signal for the U.S. as an industrial and automobile production location. The Volkswagen brand is going on the attack again in America."

Michael Horn, president and CEO of Volkswagen Group of America, said, "The Chattanoogabuilt midsize SUV will allow us to fulfill the wishes of our dealer network, bringing new customers to our showrooms and

additional growth for the brand. We are eager to be entering this growing vehicle segment with a world-class, seven-passenger SUV from Volkswagen."

Apart from investing in the production of a new vehicle, the Chattanooga location is to receive a new, independent National Research & Development and Planning Center of the Volkswagen Group of America for project coordination in the North American market.

The objective is to identify customers' feedback in the market and to integrate them more expeditiously into existing and planned vehicle models, Krebs said. This will lead to the creation of approximately 200 qualified engineers working in Chattanooga.

This decision, said Krebs, is another element in the investment program that the Volkswagen Group has launched in the region. From 2014 to 2018, the Volkswagen Group will be investing more than \$7 billion in the U.S. and Mexico. It is Volkswagen's goal to deliver 800,000 vehi-



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Volkswagen plans to build this mid-size SUV in Tennesse in 2016.

cles in the U.S. by 2018.

At Chattanooga, the new SUV production will be integrated into existing plant structures.

A total floor space of approximately 538,000 square feet will be added to the existing production facility.



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Hands-free connectivity will come standard in every 2015 Buick model.

Buick Says Drivers Can Stay in Touch Safely

Being able to stay connected – even while in the car - is a high priority for many drivers and passengers on the road

That's why every 2015 Buick model, says GM, will come standard with Apple Siri Eyes Free and Text Message Alerts.

Most 2015 Buick models will also come standard with a built-in Wi-Fi hotspot, powered by OnStar with 4G LTE, said spokesperson Katie Bjoerk.

"People have become accustomed to having their mobile devices with them wherever they go, and that includes their vehicle," said Roger McCormack, Buick product director.

"With standard technologies like Siri Eyes Free and Text Message Alerts, Buick provides drivers with a convenient and safe way to stay in touch while on the road.'

According to a recent Kelley Blue Book survey, Bjoerk said, 39 percent of consumers choose a vehicle to buy based on its available in-vehicle technology, including infotainment and naviga-

"Today's shoppers are more influenced by technology and infotainment systems than ever before," said Arthur Henry, analyst for Kelley Blue Book's KBB.com.

"With Buick's IntelliLink now including these standard convenience features, the brand will further be in the forefront of consumers' minds when shopping for their next vehicle.

Buick IntelliLink's connectivity for 2015 includes a new Text Messaging Alerts feature for smartphone users with Bluetooth profile (M.A.P.), which reads incoming texts through the vehicle's speakers.

It also includes Siri Eyes Free for iPhone 4s or later, with iOS 6 or later

With Siri Eyes Free, customers can ask Siri to call people, select and play music, hear and compose text messages, get directions and more.

Each enables voice-controlled connectivity to help keep phones safely stored and hands on the wheel.

In addition to icons covering everything from navigation to phone to a Pandora internet radio interface, IntelliLink is designed to accommodate new features and enhancements and be highly customizable.

It also incorporates natural language voice recognition that allows customers to safely place calls, enter destinations, browse media, play music and control other functions simply by telling the vehicle what to do.

Fordsell, M-TEC Work to Clean Up Plant

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er customized solutions addressing the technical talent pipeline at every level of an organization or industry sector.

In less than a year, Fordsell's plant was updated to meet the company's current needs and take advantage of modern lean manufacturing concepts.

"It was their project," said Holger Ekanger, Macomb's director of Workforce and Continuing Education, Engineering and Advanced Technology.

"Fordsell knew what its goals were. What we did was bring in the right resources to help them figure out how to get from where they were to where they needed to be."

"Our challenge began as a need to supply clean parts to our customer that builds hydraulic valves," Redfield said. "Their technical requirements became the building block and guiding principle.

"However, we envisioned a much larger company initiative: To provide a clean, modern, welllit environment for our customers' parts, our current and future employees and our electronic equipment. We wanted our physical environment to be more

supportive of the level of complexity of our work."

M-TEC brought in two consultants to help analyze Fordsell's requirements and make recommendations for a new plant layout, said MCC spokesman James Melton. The first consultant helped Fordsell implement lean manufacturing principles, which included a SWOT (strengths, weaknesses, opportunities and threats) analysis of the current and future layout of the facility.

"They came in, looked around, made suggestions and they got it right," Redfield said. "We realized we didn't have the expertise to do the lean work. The person who came in to do the work, Brian Saylor, had a lot of expert-

"When he first came in, I was on my way out of town. He worked with our team. So it was a real team effort and not a topdown outcome.

Redfield said the team developed what became the company's pathway for the next year.

"My team owned it, got it and worked on it," Redfield said. "I didn't have to tell them what to do every step of the way. My leadership was one of encouragement and removal of barriers and getting the funding.'

That work also involved valuestream mapping, which analyzes the flows of materials and information, and a "spaghetti diagram," a tool used by engineers to help them visualize the flow of material and information and propose possible improvements.

The second consultant, Chris Christianson, then used the recommendations of the lean consultant and Fordsell's management team to create the new plant layout in a computer-aided design drawing.

Redfield said M-TEC's help was "critical" to Fordsell's project.

"It was clearly an enabling set of services," Redfield said. "We could not have accomplished our objective without the expertise of Macomb Community Col-

That process of remaking Fordsell's facility started in March 2013, was completed in January 2014 and involved four staff members from Macomb.

Once the plan was made with M-TEC's help, the rehab of the plant included investments by Fordsell in new parts-cleaning equipment and a complete reconfiguration of all production and support equipment in the plant.

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Mustang Marks 50 Years by Meeting 'High Targets'

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opment said yes to all the improvements," Nair said.

"But me as head of production said, 'Why does everything hav e to cost so much to develop?'

We're really proud of what the 2015 Mustang developed into. We made the decision to go with independent rear suspension (IRS). We also went with an all-new front suspension system, so the car handles better than ever and gives you better ride quality than ever. It has better braking than

The vehicle is expected to have its public debut with the next two or three months, said Paul Seredynski, manager of Global Powertrain Communications for Ford.

'We've taken the first preorders for the 2015. But we're still tweaking it so that it's the best possible car we can make,' Seredynski said.

Tom Barnes, the vehicle engineering manager for Mustang, said the key to the 2015's success was actually setting the goals

"If you have a goal to aim for, you really go for it," Barnes said. "A Mustang is supposed to be fun, fast, balanced and emotional. To make such a car, we realized that adding IRS was great, but that alone couldn't cut it. That's why we added things like double ball joints.

New to the Mustang lineup is Ford's new 2.3-liter EcoBoost en-

The EcoBoost engine delivers the healthy output Mustang drivers expect, regardless of the car's speed," said Scott Makowski, EcoBoost powertrain engineering manager. "It delivers where a Mustang driver expects it to with broad, flat torque and great driveability under any condi-

"In order to develop precise and predictable handling characteristics, a car needs a solid platform where the suspension mounts don't move relative to one another," Barnes said. "The structure of the new Mustang is much more resistant to twisting, with 28 percent more torsional stiffness for the fastback, and a 15 percent improvement for the convertible.'

Despite being much so stronger, the new Mustang is actually lighter than the previous version. Barnes said. This was achieved through extensive use of advance technologies and materials including hydroforming, laser welding and high-strength steels. Lightweight aluminum is used for the hood and front fenders to help reduce body mass and improve weight balance, Barnes said.

"Attention to detail throughout the design process yielded significant weight savings that help to offset increases from adding performance-enhancing features such as larger, more powerful brakes and independent rear suspension," Barnes said. "The result is a vehicle that is more capable than before while remaining significantly lighter overall than key competitors.

All these improvements matter, said Pat Barber, 6R80 Automatic Transmission program manager, because "people are demanding better performance and a better ride. The muscle cars of old really wore a driver out, so after being in one for a couple hours, that driver was ready to call it a day. "Now it takes 12 or 14 hours to get a driver to that point," Barber said.

Ultimately, the new Mustang builds on its muscle car heritage, but its performance much more closely matches that of a highperformance sports car. And that's something new to say for the e Mustang.

Charles Poon, design manager for Drive Line and Manual Transmissions, said that Ford expects about a third of the 2015 Mustangs sold to have a manual transmission.

When we talk with our customers, they tell us, to put it simply, that the difference between stick and automatic transmissions is the difference being a driver and being driven.

"Many Mustang customers want to have complete control of when and where they shift gears. They want to have control of speed and torque generated from the engine so they're always driving in the sweet spot."

Nair said the 2015 model is already the best-handling, best-



The 2015 Mustang comes in both hard top and convertible.

braking standard Mustang ever tors; right out of the box.

But, he said, drivers looking to take their cars to even higher levels of capability can add a performance pack to the Mustang EcoBoost fastback or convertible or Mustang GT fastback.

- Both performance packs get: • Retuned springs, bushings
- and monotube rear dampers;
- Additional cooling capability for track-day durability;
- Thicker rear sway bar; • K-brace connecting strut towers to bulkhead;
- Unique tuning for ABS, electronic stability control and electric power-assisted steering;
- Center gauge pack.

Nair said the 2015 Mustang EcoBoost performance package also includes:

- Front brakes: Four-piston, 46-millimeter fixed aluminum 352-millimeter with calipers rotors:
- Rear brakes: Single-piston, floating 45-millimeter calipers with 330-millimeter ro-
- Unique 19x9-inch alloy wheels painted Ebony Black with Pirelli 255/40R19 Y-speed-rated tires front and rear;
- 3.55:1 final drive ratio.

The 2015 Mustang GT performance package includes:

- Front brakes: Brembo sixpiston, 36-millimeter fixed aluminum calipers with 380-millimeter rotors;
- Rear brakes: Single-piston, 45-millimeter floating calipers with 330-millimeter ro-

- Unique 19x9-inch Ebony Black painted alloy wheels with Pirelli 255/40R19 Y-speed-rated tires, front; 19x9.5-inch alloy wheels with Pirelli 275/40R19 Yspeed-rated tires, rear;
 - Strut tower brace;
- 3.73:1 final drive ratio with Torsen differential;
- Unique front splitter to channel cooling air to the front

The result of all this work, Nair said, is the best Mustang ever that delivers on the car's heritage, and is a truly world-beating automobile.

Ford's Mulally **Becomes Google Board Member**

NEW YORK (AP) - Google has appointed Alan Mulally, the former CEO of Ford Motor Co., to its board.

Mulally, 68, retired from Ford at the end of June after heding the company for several years. Over the winter, he was rumored to be in the running for the top job at Microsoft Corp., but it went to an internal candidate.

Google said July 15 that Mulally's appointment was effective July 9. He will serve on the company's audit committee.

Google has developed car prototypes that drive themselves, but hasn't revealed what it plans to do with the technology in the long term.

In announcing Mulally's appointment, it didn't mention its

Mulally, who also worked for Boeing, is the only director with a background in traditional manufacturing on Google's board.

Mulally returned Ford to profitability, in part, by shedding brands like Volvo and Jaguar so the company could focus on its core Ford and Lincoln brands. Mulally also drove Ford to innovate, championing new features like touch-screen dashboards before others had them.





Warren Buffett Buys New Caddy Thanks to Barra

OMAHA, Neb. (AP) - Billionaire Warren Buffett decided it was time to upgrade his 2006 Cadillac DTS after General Motors CEO Mary Barra pointed out how many improvements had been made since then.

Buffett wrote a letter to Barra praising his car-buying experience at Huber Cadillac in Omaha. GM posted the letter and a story from the saleswoman who handed the deal online at its blog, http://fastlane.gm.com , last week.

Buffett sent his daughter, Susie Buffett, to the dealership to make the purchase.

Warren Buffett says the saleswoman did a great job, including recommending that Buffett buy the XTS sedan he picked, not the CTS coupe that Barra had originall recommended to him to purchase.

Buffett joked that the reason the saleswoman recommended the sedan is that his daughter described the 83-year-old investor who runs Berkshire Hathaway as "hopelessly over-the-

Buffet praised dealership owner Brett Huber for being "extremely accomodating.'

Buffett received nonthing trade because he donated his old Cadillac to Girls Inc., a charitiable organization for girls.



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than 2,000 bats could have a new home at Consumers Energy hydro power plants thanks to collaboration between the utility. General Motors and a Boy Scout from Clarkston.

Using scrap Chevrolet Volt battery covers donated by GM, 16year-old Matthew Netherland from Clarkston, (about 40 miles northwest of Detroit) and some helpers built 30 bat boxes in a few months, according to the Jackson Citizen Patriot.

Consumers Energy, which operates 13 hydroelectric plants along the Au Sable, Grand, Kalamazoo, Manistee and Muskegon rivers, will install 22 of those bat houses at select properties.

"I thought it would be nice to give them a place to stay," said Netherland, who will enter his junior year at Clarkston High School this fall. "They have a place to stay for the winter."

Netherland created the bat houses for his project to earn Eagle Scout, the highest achievement in Boy Scouts of America.

The houses are about 2 to 3 feet long and 1 foot wide and will give the bats a place to live, other than people's attics, he said. Each house can fit more than 100 bats, if not 200, Netherland said.

Consumers Energy and GM have both been recognized for their dedication to preserve natural resources, and properties for each company have received certification by the Wildlife Habitat Council.

"Hydro dams generate clean electricity, and cars that run on electricity are a cleaner form of transportation," said Rich Castle, Consumers Energy's natural resource manager for hydro generation. "The battery covers from

JACKSON, Mich. (AP) - More the electric-powered vehicles are being kept out of landfills, and by being utilized as bat homes they allow biodiversity to thrive along the river habitats that produce renewable energy.'

Emily McDonald, environmental engineer for GM, coordinated with Netherland on his project and was impressed by his energy and dedication.

GM has built more than 520 wood duck, bat and bluebird nesting boxes from Volt battery covers, with many spread out among its facilities' grounds.

"We've worked with renowned bat experts on our bat house design and are grateful that we can partner with others who share our passion for conservation and will help us make a lasting impact," McDonald said. "The Volt covers are made with durable material and will result in wildlife nesting opportunities for a long

GM Supports Bill Affecting Rentals Of Recalled Cars

WASHINGTON (AP) – GM has become the first big automaker to support legislation barring rental-car companies from renting or selling vehicles subject to a recall.

GM's support was announced July 16 by bill author Sen. Charles Schumer, D-N.Y. GM endorsed the bill after language was inserted clarifying that automakers wouldn't face liability when they repaired rental cars, Schumer said in a news release.

GM sent Schumer a letter June 26 expressing its support for his

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FIND NEW ROADS

Students Dig in to Learn **Environment Conservation**

Detroit-area students are working this summer toward a greener future for the city, thanks to Johnson Controls' Conservation Leadership Corps (CLC).

Last week, 33 high school students kicked off the summer jobs program created and sponsored by Johnson Controls in partnership with the Student Conservation Association.

The CLC, in its seventh year in Detroit, provides students with the development and leadership skills to help them gain environmental conservation experience, while completing fundamental projects in local community parks, said Johnson Controls spokesperson Mary Kay Dodero.

Throughout the course of the six-week program, students will work with seven crew leaders and seven crew leader apprentices, and focus their efforts in Detroit's Belle Isle Park, River Rouge Park and the Brightmoor neighborhood.

Student crews work on a variety of projects, including outdoor classroom construction, new trail development, green space acreage expansion, planting of native trees, grasses and flowers, invasive plant species removal and general operations management.

Students also will cultivate vital professional development skills, including help with resume writing and interview skills, Dodero said.

"The Conservation Leadership Corps program is important to us as it has a positive impact on the city of Detroit and the area's high school students," said Karen Sommer, Johnson Controls' director of global public affairs.

"The students have a unique

opportunity to gain hands-on work experience while developing professional skills and learning about the importance of environmental conservation."

New this year, a crew of returning students will work on environmental conservation projects in Michigan's Upper Peninsula in partnership with the National Parks Service and U.S. Forest Service.

Over the course of two weeks, the students will camp and work at the Pictured Rocks National Lakeshore and the Hiawatha National Forest. The students will learn about camping, risk management and explore a variety of conservation careers while working with conservation professionals.

According to Sommer, CLC participants were selected for this highly competitive program from more than 150 applicants based on their interviews. Student candidates were assessed on leadership, work ethic, civic engagement, and interest and commitment to the environment.

On July 21, Johnson Controls employees worked alongside the students as they volunteer with CLC teams at several Detroit locations for an environmental learning experience. Activities will include planting, developing and maintaining trails, and removing invasive plant species.

On Aug. 14, the students will participate in a professional development day - hosted by Johnson Controls' Automotive Experience t the company's headquarters in Plymouth – where they will learn the importance of sustainability, energy efficiency, hybrid battery technology, and expectations of today and tomorrow's leaders, Dodero said.





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Buick Achievers to Award \$2.5 Million In STEM Scholarships to 100 Students

The Buick Achievers program last week announced new scholarships totaling up to \$2.5 mil-

Funded by the General Motors Foundation, the scholarships will be awarded to 100 recipients pursuing careers in the areas of STEM, information technology and other fields related to the automotive industry.

Of these funds, more than half will be awarded to female students, said Buick spokesperson Amy Grundman.

In four years since the program's inception, Buick Achievers has awarded more than \$28 million in scholarships to 3,400 high school seniors and undergraduate students, including this year's recipients and those currently receiving renewal funds through the program.

Buick Achievers annually grants 100 students with up to \$25,000 renewable for four years, and one additional year for those entering a qualified, five-year engineering program.

Thanks to this scholarship, I can focus on my studies without having to worry about financial constraints," said Meri Mullins, 2014 Buick Achievers recipient and University of Toledo chemical engineering student.

"I've always been interested in understanding how the world works. It's my goal to instill this passion in future generations so they too can gain an interest and appreciation for STEM fields."

According to the U.S. Department of Education, only 16 percent of American high school seniors are proficient in mathematics and interested in a STEM career.

Among those who pursue a college major in the STEM fields, approximately half choose to work in a related career, the DOE said. The United States is falling behind internationally, ranking 25th in mathematics and 17th in science among industrialized nations.

"Our Buick Achievers are evolving the face of STEM in that half are the first in their family to attend college, more than half are female, and minorities make up the majority," said GM Foundation President Vivian Pickard.

"These milestones are a positive indication that we're making great strides to pave the way for our industry's future leaders and innovators.'

As one of the largest programs in the country, Buick Achievers focuses scholarship awards on students who excel in the classroom and give back to their communities. Special consideration is given to students who are female, minorities, first-generation college students, military veterans and military dependents.

Among the 100 students being recognized this year, 61 percent are female. This milestone suggests forward momentum for women who have historically been underrepresented in STEM fields, Grundman said.

Concours Show Set for July 27

The 36th annual Concours d'Elegance of America exhibition is scheduled to be held at St. John's in Plymouth on July 27.

Each year, the exhibition is the site of classic and unique vehicles from different eras.

Some of the vehicles set for this year's show are a 1913 Peerless 48 Roadster, a 1964 Shelby 427 Cobra "Flip-Top" Roadster, a 1960 Plymouth XNR concept car, and a 1955 Alfa Romeo 1900 SS.

Numerous associated events will be held on Friday and Saturday leading up to the Concours on Sunday.

Half of the recipients are the first in their families to pursue a secondary education, and more than half are of ethnic backgrounds, underscoring diversity. Additionally, 78 percent are pursuing STEM-related majors, with degree programs in computer science and chemical engineering topping the list.

"It's imperative that young women who wish to pursue STEM-related careers are given every opportunity to make their dreams happen," said Greg Dehn, general manager and senior vice president, Scholarship America.

"By awarding more than half of their scholarships to female students, the GM Foundation encourages women to pursue career in a traditionally

male-dominated field.

"Buick Achievers' multi-year, renewable awards will not only make postsecondary education possible for these deserving students, they will also propel them through to graduation and a promising career in STEM.

General Motors and the GM Foundation have a long history of investing in education initiatives. Since 2007, the GM Foundation has invested \$70 million in educational programs and institutions to help nurture tomorrow's innovators and leaders.

In addition to Buick Achievers, the GM Foundation provides approximately \$3 million annually to key university partners and professional organizations to advance STEM curricula.



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GM Global Sales In First Half Were Up 1.4 Percent

General Motors Co. sold 2,505,889 vehicles around the world in the second quarter of

Year-over-year sales in the United States and China were up 7 percent and 8 percent, respectively, for the quarter.

Total sales were up one-half percent in the second quarter.

In the first half, GM sold 4,921,928 vehicles, up 1.4 percent.

"GM did well in the world's two largest and most profitable vehicle markets and that helped us grow despite very challenging market conditions in parts of South America, Asia and Eastern Europe," said GM CEO Mary Barra.

"We are investing in our brands around the world to keep our momentum going, and that includes growing Cadillac in China, launching a total of 27 new Opel models between 2014 and 2018 and entering new segments in North America with vehicles like the Chevrolet Colorado and GMC Canyon."

Chevrolet had record sales in China in the first half of 2014 and the strong performance of the brand's new full-size pickups and large SUVs in North America helped GM achieve record average transaction prices in both the second quarter and first half, said GM spokesperson Jim Cain.

Buick, which celebrated the best sales year in the brand's 110-year history in 2013, posted an 11 percent increase in the quarter and it is up 12 percent year to date.

Buick global sales in the first six months of 2014 are 152 percent higher than they were just six years ago, growth that has outpaced all major American, European, Japanese and Korean

Cadillac's global sales were up 14 percent in the quarter, including a 51 percent increase in China. Calendar year to date, deliveries were up 12 percent, driven by a 72 percent increase in China

Opel/Vauxhall sales increased 3 percent in the second quarter.

Sales were up 4 percent in the first half and Opel gained market share in 11 European mar-

In addition, the Mokka was the best-selling SUV in the first six months of the year in Ger-

GM Scheduling \$27M Investment **In Casting Plant**

BEDFORD, Ind. (AP) - General Motors has proposed investing \$27 million at a southern Indiana casting plant for machinery, equipment and tooling needed to produce aluminum engine blocks.

The automaker filed a tax abatement request for the Bedford factory project, saying it would add about 40 jobs and raise the plant's employment to some 650 workers.

Bedford Economic Development Commission chairman Patrick Robbins says the tax abatement would save GM \$1.9 million over 10 years.

The Times-Mail reports the commission recommended approval of the request July 14. It now goes before the Bedford City Council.

GM plans to start installing the new equipment in November and finishing in March 2016.

GM announced last December it planned to invest \$29 million in the Bedford plant to make parts for six- and 10-speed transmissions.





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