

Oakland Educators Work to Capture Girls' STEM Interest

By Cherie W. Rolfe

STEM education – the study of science, technology, engineering and mathematics – can open a world of career opportunities and increased earning potential for young women. But, their interest must be captured early, encouraged and sustained.

In addition, it's important to provide them with real-life role models and address differences in learning styles.

Advocates and educators in Oakland County are working to make that happen and the results could have long-term economic effects.

Michigan alone will need to fill 274,000 STEM-related jobs by 2018, according to "Michigan's K-12 STEM Ed Report Card for 2011," published by stemconnector.org

And yet, if national trends are an indicator, women will hold less than 25 percent of those STEM-related jobs, according to "Women In STEM: A Gender Gap to Innovation," a report published by Economics and Statistics Administration in 2011. That percentage has remained steady throughout the last decade.

STEM-related jobs could go a long way toward closing the gender wage gap. Women in STEM fields earn 33 percent more than comparable women in non-STEM jobs.

The same report cites lack of female role models and gender stereotyping as being some of the reasons girls and women might steer away from the STEM path.

The Birmingham branch of the American Association of University Women – an organization dedicated to advancing equity for women and girls through advocacy and education – aims to dispel both issues by hosting an annual symposium called Explorathon. This year's event, held this past

April at Detroit Country Day School, attracted 550 girls, mostly eighth graders, from both public and private schools in Oakland, Wayne and Macomb counties.

The event featured 35 presenters, all women, who represent different areas of STEM.

"These are typically not areas girls go into," said Pamela Hoffman, branch president. "(Girls) need women mentors who will boost (their) confidence. That's why we have all women presenters."

Explorathon was born in 1995 out of a national AAUW initiative called, "Yes You Can," that encouraged the branches to expose girls to STEM studies and careers.

"Many young women do not have the encouragement they need," Hoffman said, adding that middle school is a pivotal age, because career planning begins there. Sometimes counselors don't know how to guide young women.

She recalls an example from her own past.

"The smartest girl in my class wanted to be a doctor and was told by a male counselor, 'You'll never make it in medical school, be a nurse.'"

Other roadblocks are attitudinal and internal.

"They (girls) are smart, but they don't want to be known as smart," Hoffman said.

Karen Boyk, a retired educator and AAUW member, agrees.

Middle school is a critical time when girls "start dropping off (academically) because they worry about their personal image."

Boyk also believes biology plays a role in the learning process.

"Women use more parts of the brain and have more verbal centers than men," Boyk explained. "Women are better at talking and reasoning... girls are missing out on opportunities because we are

not addressing the differences."

In the early 1990s, when the AAUW released data about how girls are often overlooked and shortchanged in the classroom, Boyk took a look at her own teaching style. She found that "I was ignoring girls due to boys' overt behavior."

Boyk got permission to teach an all-girls language arts and math combination class.

There, she employed the techniques based in part on the books, "The Wonder of Girls" and "Boys and Girls Learn Differently" by Michael Gurian.

In her class, students did "lots of group work (and) talked things through," Boyk said.

In the single-sex environment, the girls "asked questions (and) were not afraid to make mistakes. Their grades improved."

Boyk also says it's important for educators to bring STEM subjects alive for students using real-life applications. With this approach, she says, "I saw my students as better problem solvers."

Michael Gallagher, a former educator and science consultant at the Oakland Schools Science, Mathematics and Technology Center is working with school districts throughout the county to design and implement progressive curriculums that bring STEM subjects alive for all students.

The center offers professional development for teachers, along with consulting services. But the heart of the center's efforts is curriculum design.

Although progress has been made in the last 15 years to identify effective and engaging practices, "too much teaching is in response to the accountability system," Gallagher said.

"Teachers take an anxious stance to cover a lot of topics

and that's exactly how you turn kids off to science... and it's the same with math."

He believes students should be invited to "practice" science, and see themselves in the role of a scientist, in the same way they practice an instrument and see themselves as musicians.

His goal is to help people in schools "interpret the accountability system in a way that's consistent with best practice. It's not inconsistent to (take time) to engage students in the 'practice' of science and math."

Beyond the classroom, community and family support can go a long way to keeping girls on the STEM track.

Connie Duncan, of the Michigan STEM Partnership says women are lost at critical points of transition. College STEM majors don't always stay on track for graduation, or accept jobs out of the STEM arena.

To avoid this, she says, we "need more STEM-capable kids, along with "STEM-literate communities" of parents and others who understand its importance.

Chicago Show's Dates Are Firm

The public portion of the 2013 Chicago Auto Show will run Sat., Feb. 9 through Monday, Feb. 18. This marks the first time since 1998 that the show will be open to the public on a Saturday. Show organizers decided to shift the dates for 2013 to take advantage of the Presidents Holiday that weekend.

The annual Show charity night fundraiser moves from Thursday to Friday, Feb. 8.

Finally, the Media Preview dates move to Feb. 7 and 8.



Dan Griffin

IAC Names Griffin V.P., Asia Sales

SOUTHFIELD – International Automotive Components (IAC) Group announced last week that Dan Griffin has been promoted to vice president of sales and program management in support of IAC's business in Asia.

Griffin brings more than 17 years of international sales, business development and program management experience to his new role.

Prior to his new position, he led IAC commercial group's global Asian business.

In his new role, Griffin will have responsibility for existing business and new business development with IAC's Asian OEM customers in India, China, Japan, Korea and the ASEAN region. He also will partner with IAC's engineering and operations teams to ensure consistent implementation of company commercial and sales processes.

The organization's rapid growth in the past five years has been a priority as it continues to support its growing global customer base in the region.

'13 Buick Verano Turbo's Price Tag Will Be \$29,990

DETROIT – The 2013 Buick Verano Turbo luxury sedan will be priced at \$29,990, including a destination charge of \$885.

The turbocharged Verano uses an Ecotec 2.0L four-cylinder engine with direct injection and continuously variable valve timing to produce an SAE-certified 250 horsepower at 5300 rpm and 260 lb.-ft. of torque at 2000 rpm.

When the Verano Turbo arrives at dealerships this fall, buyers will get both performance and fuel efficiency with 0-60 mph acceleration in an estimated 6.2 seconds and EPA-estimated 20/31 mpg ratings with a six-speed manual transmission available as a no-cost option. Fuel economy ratings for the standard six-speed automatic will be announced closer to production.

Verano Turbo will offer more power and better fuel efficiency than the competition. A 2012 Lexus IS250 is rated at 204 horsepower, with fuel efficiency estimates of 19/28 mpg with a manual transmission.

In addition to its 2.0L engine, dual exhaust, sport pedals and rear spoiler, standard equipment for the Verano Turbo includes IntelliLink connectivity, a Bose 9-speaker audio system, leather-appointed upholstery, push-button start, rear park assist and rearview camera, radar-based side blind zone alert and rear cross-traffic alert, heated front seats and a heated steering wheel. A power sunroof and navigation are optional.

"Buick Verano continues to build momentum in the marketplace with eight straight months of sales increases since launch," said Tony DiSalle, vice president of Buick marketing.

The Buick Verano is exclusively assembled at the GM Orion plant in Orion Twp.



Alicia Boler-Davis

Former Orion Plant Mgr: Sale 'Part of Relationship'

TRAVERSE CITY, Mich. – General Motors' definition of customer experience is expanding to include what happens before, during and after the sale – instead of just what happens in the dealership, U.S. Vice President of Customer Experience and Vice President of Global Quality Alicia Boler-Davis said last week.

"We're no longer thinking about a vehicle sale as a transaction or a singular event," Boler-Davis said during a presentation to the Center for Automotive Research Management Briefings. "We're thinking about it as part of a relationship between the customer, the dealer, and GM."

"Put another way, the customer experience begins long be-

fore our products make it to the dealer showroom. It begins with our very decision to build a vehicle... and involves every customer touch point after that. It involves the entire enterprise."

Boler-Davis is the former plant manager at GM Orion and she lately has been climbing the corporate ladder at General Motors at the RenCen. Among her current titles is the aforementioned vice president of Global Quality.

Meanwhile, every function and every GM employee – from Product Development and Manufacturing to Sales and Service and Customer Engagement Centers – impacts the customer experience and influences the customer, she further said.

Ford Rolling Out a Single Global Production System

TRAVERSE CITY – Ford Motor Co. is supporting its biggest global expansion in 50 years by rolling out a single manufacturing operating system that will drive improved efficiencies, increase capacity utilization and make the company an industry leader in lowest total cost production.

"The global One Ford plan is making it possible for us to deploy One Manufacturing, a single Ford production system that will pay tremendous dividends through standard processes, greater flexibility and improved investment efficiency," said John Fleming, Ford executive vice president, Global Manufacturing, at the Center for Automotive Research Management Briefing Seminars last week.

Ford is adding capacity around the world, including a broad expansion in Asia Pacific Africa (APA), where the company is adding nine new plants. The facilities will increase APA's capacity to produce 2.9 million vehicles a year, part of a global plan to meet Ford's goal of selling 8 million vehicles a year by mid-decade.

As Ford brings on new facilities, it is expanding the use of common manufacturing processes and standard systems for tracking material, delivery, maintenance and environmental costs so that new and existing plants are aligned in how they operate.

Ford is also making broader use of virtual tools that reduce the cost of new plants and improve the efficiencies of new model changeovers.

"It is critical that all of our assembly operations, wherever they are located, speak the same language when it comes to producing high-quality vehicles in a safe and efficient way," said Fleming.

Ford's One Manufacturing system includes:

- Improved flexibility: Last year,

55 percent of Ford's operations had flexible body shops, a figure that will increase to 65 percent in 2012.

As the company launches new plants, each one will have a flexible body shop. Also, the number of vehicle derivatives that can be assembled at a single factory is increasing. By 2015, Ford will be able to produce 25 percent more derivatives per plant from 2011.

Some new plants in APA will be capable of producing six and seven vehicles from a single facility.

- Process/quality improvement: Ford is expanding the use of virtual tools that simulate how cars are assembled. By studying the best way for operators to install a seat, for example, Ford can design assembly lines that reduce injuries and accidents while improving quality.

Since 2006, Ford has reduced the number of manufacturing build issues when a vehicle is first produced by more than 90 percent.

- Investment efficiency: Virtual tools have already reduced the investment it takes to assemble a vehicle by more than 20 percent since 2009. In addition, the company has reduced the investment to produce a vehicle derivative by 60 percent.

Going forward, expanding the use of virtual tools and standard processes will reduce total vehicle investment by 8 percent a year.

- Capacity utilization: As Ford launches new plants, it is also reducing the number of platforms that vehicles are developed from.

When combined with improved flexibility and more efficiencies, Ford will be able to take advantage of global economies of scale and significantly improve capacity utilization. By 2016, Ford's global capacity utilization on a two-shift basis will increase 27 percent compared with 2011.