



By the time this final 2011 Foundation News reaches your mailbox, another year will be coming to an end. Who would have thought that it was just about this time – 25 years ago – that a group of SAE members took it upon themselves to investigate, formulate, and generate the form and structure of the SAE Foundation as we know it today.

This small group of “philanthropy pioneers” recognized the need of SAE International to have a source of funding for non-dues supported projects. In particular, they were concerned that the conditions for the perfect storm were gathering and forming as a crisis in our country’s science, technology, engineering, and math (STEM) education system. They formed a committee, who established the SAE Foundation as an integral part of SAE. To get the Foundation started, funds were transferred from SAE’s Net Worth and the founding members made individual contributions.

As our founders predicted, the crisis in STEM education has grown - and with it, so has the importance and relevance of the SAE Foundation. Since its’ beginning, the SAE Foundation has been setting the standards for STEM education. This is no surprise coming from an organization whose members have set the standards for the industries that SAE serves since its inception.

For many years, the SAE Foundation focused on engaging kids early on and then again in college, with a gap in high school programming. Now – after 25 years - the SAE Foundation has completed its curriculum continuum with the addition of the F1 In Schools program and the launch of the K-3 activities – a true milestone. We may be the only STEM education provider who can make the claim to be a complete continuum curriculum provider. As these students move into postgraduate degrees and into professional careers, we continue our

support through the scholarships and awards we fund and distribute.

Your generous support has helped us to reach this landmark in our organization’s history. We will rely upon your continued and increased support as we market and distribute our newest programs, improve and enhance our current *A World In Motion* (AWIM) challenges and Collegiate Design Series (CDS) events, and continue to set and exceed our own standards.

We will ask you to support us with your annual gifts and your lifetime support as a member of the Sustainers Club, and ask you to consider leaving a legacy through a major or planned gift. We will also ask you to help us open doors to companies and foundations in new areas and new industries. If you are unable to support us financially, we will ask you to introduce AWIM or CDS to a classroom or a school in your neighborhood.

As we celebrate our 25th anniversary throughout the coming year and enter into this new era of our organization’s history, we look forward to working together to move our mission and vision forward and to reaching even greater heights of success.

Matt Miller  
Director, SAE Foundation

- Only 32% of fourth-graders, 31% of eight-graders, and 21% of twelfth-graders scored “proficient” in science<sup>1</sup>
- One-third of US students, who intend to major in engineering, switch majors before graduating.<sup>2</sup>
- Overall, the United States ranks 27th among developed nations in the proportion of college students receiving undergraduate degrees in science or engineering.<sup>3</sup>

<sup>1</sup>2009 Nation’s Report Card, National Assessment of Education Progress

<sup>2</sup>Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future, page 16

<sup>3</sup>Organization for Economic Cooperation and Development, Education at a Glance 2009: OECD Indicators; Table A-3.5.

# Partners and Programs



## GM Finishes Another Exciting Year

The 2010-2011 school year was another success for General Motor's AWIM program. GM recruited over 1,300 volunteers to help deliver the curriculum to local students in several GM communities. In addition to helping to bring the AWIM programs to life, GM volunteers shared their stories and helped to show that learning about science, math and engineering can be fun! The teachers, many of whom have been involved since GM began its AWIM outreach program in 2004,

appreciate the volunteers' presence in their classrooms.

Tony Argote, GM's AWIM Coordinator, shared his thoughts on the program's status.

"This was another exciting year for AWIM and General Motors. We are adding more energy to the program all the way around. It was great to see the Fuel Cell Olympics get started with such energy and enthusiasm; I think both the Fuel Cell and JetToy Olympics were a success. Bringing back our volunteer recognition breakfast was another success and a small way to give a big

thanks to our volunteers for their continued contributions and impact. Looking forward into this school year, we are excited to continue to sustain the growth of the program, and very eager to get started with the new primary curriculum."

Tony is currently busy visiting some of GM's most active communities to thank them for their involvement. GM's Arizona retiree community holds one of the company's most thriving AWIM programs led by Don Robins. GM hopes to continue the excitement into the 2011-2012 school year.

## F1 in Schools Completes "Curriculum Continuum"

SAE has long been a leader in providing elementary and middle school students with hands-on, design engineering experiences through its *A World In Motion* (AWIM) program. For a while too, the *A World In Motion* program included a high school activity - The Electricity & Electronics High School Challenge. As it became increasingly difficult to support the production and distribution of the E&E challenge, a strategic decision was made to replace the E&E challenge – but with what?

Knowing the cost to develop new high school curriculum is prohibitive, and that many good high school programs already exist, the SAE Foundation set out to find the perfect program partner. In October 2011, the SAE Foundation acquired the US right to F1 in Schools, a UK-based program that has been inspiring students around the globe through an engineering design challenge centered around the Formula One experience.

F1 in Schools challenges students to use CAD/CAM software to design, test, and manufacture and race a miniature CO<sub>2</sub> powered balsa wood Formula car of the future. A purpose-built 20 meter track is used to test the speed of the



model cars. In addition, participants are judged on their final car design, engineering development, team work and project presentation.

"By partnering with F1 in Schools, SAE International expands its educational offerings and has a definitive engineering project for high school students." "The F1 in Schools program enables high school students to participate in a sophisticated program that significantly elevates the degree of competition," explains Matt Miller, director of the SAE Foundation and Pre-Professional Programs.

SAE International will build on the success of the USA F1 in Schools program which has been established for over eight years, producing two F1 in Schools World Champions along the

way. SAE International will undertake all elements of the program, promoting it to schools throughout the USA, administering the registration process for competing schools, staging regional final events across the country and hosting the USA F1 in Schools National Finals, which will select the National Champions, who will then compete on the world stage at the F1 in Schools World Finals.

Andrew Denford, Founder and Chairman, F1 in Schools, praises SAE International for their involvement saying, "We are delighted that SAE International has come on board to run the F1 in Schools USA and we look forward to a successful future ahead. SAE International is an ideal organization to nurture the program and realize the potential for it, as there is so much scope for growth across the United States."

The move follows a successful trial earlier this year, when SAE International hosted the USA F1 in Schools National Finals alongside Formula SAE at Michigan International Speedway. It is the perfect curriculum offering to complement SAE International's current programming and completes its STEM continuum that now spans K-16.

# A World In Motion (AWIM)

## The Making of *A World In Motion* Primary Curriculum

With pre-orders beginning in December 2011 and the official launch taking place at the 2012 Detroit Auto Show, *A World In Motion* primary activities are finally here. It is hard to believe that it has been more than four years since Nissan North America announced its \$1.5 million pledge to the SAE Foundation to fund the development of these literacy-based additions to AWIM's proven lineup of programs.

Of course, the idea for the primary curriculum began way before its



development was “officially” unveiled at the SAE Foundation Banquet in 2007. SAE's decision to develop new curriculum was based on research conducted by the AWIM program staff, all former educators, which demonstrated the need for literacy-based STEM learning at the primary level.

Once the funding was in place, the AWIM program staff worked to find a company to implement its ideas in a pedagogically sound and artistically intriguing manner. Taking into consideration that the normal attention span is 3 to 5 minutes per year of a child's age, the activities and accompanying literary materials were designed to increase that span long enough to interest and engage students in real learning around science, technology, engineering, and mathematics concepts and practices. But would they really work?

Rigorous field testing was the next step in the development process. Students and teachers across the country, in public, charter and private schools, in both rural and urban settings tested the activities for nearly three years. And the results - from teachers, students and even parents - were overwhelmingly positive.



*“... they [students] loved it. They were very engaged and having a wonderful time.”*

*“My kindergarten students thoroughly enjoyed the “A World in Motion Rolling Things” unit. The unit was high interest with both girls and boys eager to race the cars down the wooden ramp. My students, most of whom are English Language Learners, easily grasped the scientific concepts. The accompanying literature selection provided an age appropriate and meaningful connection...”*

*“I even had a parent come in, his son was so thrilled with it that the dad came in to look at it so he could build him his own set at home.”*

“Developing curriculum of this nature is a very resource intensive endeavor. We are very grateful for the funding received from Nissan North America, that made the vision a reality,” said Chris Ciuca, AWIM Program Manager. The AWIM program staff is now evaluating the feasibility and cost of creating a literacy component for each of it's current elementary activities and possible funding sources.

Pre-orders are being accepted in December for teachers interested in the primary activities and can be placed at: [www.sae.org/curriculum/primary](http://www.sae.org/curriculum/primary).

## SAE Foundation Named Finalist in National Innovation Competition

The SAE Foundation won a spot as a top ten finalist, out of 265 entries submitted, in the “Partnering for Excellence: Innovations in Science, Technology, Engineering, and Math Education” competition. Hosted by Carnegie Corporation of New York, The Opportunity Equation, and Ashoka Changemakers, the goal of the competition is to find innovative solutions for bringing science, technology, engineering and math (STEM) professionals into public

schools to offer their talent, knowledge and real-world skills to students.

The SAE Foundation's innovation idea submission, the “Classroom to College STEM Connection”, aims to connect local college students in and around the Detroit area to students in the Detroit Public School System who currently participate in SAE International's *A World In Motion*® JetToy activity. It was built around the model of the Learn Twice Initiative, a two year program sponsored by John Deere, which was

implemented earlier this year, and paired CDS students with AWIM classrooms in exchange for their competition registration fee.

“To be selected as a finalist in the Partnering for Excellence competition is an honor and a privilege,” Matthew Miller, director of the SAE Foundation and Pre-Professional Programs, said. “We look forward to being part of a larger, national discussion and to additional collaboration and funding opportunities that may result from our involvement.”

# Collegiate Design Series (CDS)

## CDS Looks to Enhancements in 2012 and Beyond

### Electric Class Formula SAE

The increasing emphasis on electric vehicles has created a need for engineers trained in their design and development. As leaders in the newly developed Formula SAE World Council, the SAE Collegiate Design Series is working on coordinating the electric classes offered globally.

In order to remain competitive with international events and foster the exchange of teams, CDS will introduce a second class – the Formula SAE Electric Class - to run in conjunction with the Internal Combustion class in 2013. By offering a battery electric class at the Formula SAE Lincoln competition, teams will have greater opportunity to demonstrate their vehicle, which will in turn encourage more universities to accept this engineering challenge.

The FSAE Rules Committee is developing requirements and restrictions for electrical power storage, distribution, control and application. These rules will be based on the

2012 Formula Student (UK) & FS Electric (Germany) Rules which are currently being consolidated. The Rules Committee will conduct a critical review and publish a unified version in early 2012, which will be effective for the new 2013 Formula SAE Electric Class. This new class will be introduced as part of the competition located in Lincoln, Nebraska.

### CDS Website Development

CDS has embarked on a multi-phase project to develop a new CDS website that will move the majority of the vehicle documentation and evaluation activities online. Presently, teams entering the CDS competitions are required to submit a variety of reports documenting their vehicle prior to arriving at the competition. Volunteers, who provide feedback as needed, evaluate these documents. Using email to accomplish this important task currently causes significant duplication of effort and raises issues about document receipt and review status. The new website

will simplify submission by students, eliminate tracking and status issues and encourage more volunteer involvement by making the documents easily accessible through the web. It is our hope that by making it easier to volunteer, we can attract new volunteers to support our events.

CDS has contracted with a vendor who is designing and building a web-based system (CdsWeb) to support the complex communication and data management that many Collegiate Design Series competitions require. The system is being created in modules, many of which will be "shared" among multiple competitions. The first two modules for use in the Formula SAE and Baja SAE competitions are being developed in 3 phases. Phase one has been developed and beta tested and is now available for online access to all 2012 CDS registered teams. Phase two and Phase three are on target for use in 2013 CDS competitions.

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## CDS Events Selling Out in Record Time!

Baja SAE Wisconsin set a new record in Collegiate Design Series competition registration by selling out all 100 positions in less than 18 minutes. Formula SAE still holds the record for selling out in less than 12 minutes however this is a new record for the Baja SAE series which usually sells out in a span of hours.

The 2012 Collegiate Design Series Competitions opened registration starting with the Formula SAE Series on Monday, October 3, 2011. Formula SAE Michigan sold out the first day in just over two and half hours; a few hours shorter than in 2010. The newest location in Lincoln finished the

day with 51 of the 80 spots reserved.

Tuesday, October 4th saw the opening of registration for the Aero Design Series, Baja SAE Series, Clean Snowmobile, Formula Hybrid, and Supermileage competitions. As mentioned, Baja SAE Wisconsin sold out within 18 minutes, while Baja SAE Auburn and Baja SAE Oregon sold a half to a third of the way out. Teams were allowed to register a second car on October 18th; by end of day, Baja SAE Oregon reached 85 and Baja SAE Auburn reached 99.

With Formula SAE and Baja SAE competitions being the fastest reserved,



other competitions are approaching the half fill mark.

Registration for all competitions closes Wednesday, December 19, 2011 at 11:59PM EST.

# Donor Developments



## Inquiring Minds Want to Know!

On the morning of October 31st, the anticipation and excitement in our offices reached an all-new level when the **Bid for Education** car auction kicked-off on eBay Motors. The 2012 Hyundai Genesis R-Spec caught the instant attention of bidders, and we watched closely as the bids came rolling in. In the end, this beautiful vehicle was sold for **\$38,600 to Chad Sandstedt from San Marcos, California!**

*"I'm thrilled that the auction proceeds will be used by the SAE Foundation to develop the next generation of scientists and engineers in the transportation industry,*

*an industry that will play a critical role in our country's future prosperity. Without skilled professionals to design the next generation of aircraft and vehicles we will not meet our economic potential. The SAE Foundation is literally helping build the transportation workforce of the future and I applaud them for that. On top of that I get to drive a beautiful Hyundai Genesis R-Spec so it's a definitely a win-win situation. Thank you SAE Foundation and keep up the great work."*

Thanks to Chad for making our auction a huge success and a special thanks to Hyundai for making it all possible. For more information about how to donate an item for auction or resale to the SAE Foundation, please call Renée Hayes at 724-772-8508 or rhayes@sae.org.

## We're Almost There!

Thanks to the continued generosity of our donors we have achieved 86% of our goal to raise \$100,000 through the 2011 annual fund. You can help carry us to the finish line!

Please use the enclosed envelope and send your gift in today! THANK YOU!

## Leaving a Legacy for Future Engineers: Dan Hancock

Daniel M. Hancock, Vice President of Global Strategic Product Alliances, has retired after 43 years of service at General Motors. In addition to leaving his mark on GM through a distinguished professional career, Dan has made an indelible and impactful contribution to the SAE Foundation.

As a long time, steadfast advocate for STEM (science, technology, engineering and math) education, Dan helped to facilitate GM's and the GM Foundation's corporate and philanthropic support of the SAE Foundation.

As chairman of the SAE Foundation Board of Trustees from 1999 through 2008, Dan gave tirelessly of his time and counsel, led the Foundation's \$25 million capital campaign, and personally established the Dan and Vicky Hancock Scholarship Fund with a \$100,000 pledge.

Hancock is an SAE Fellow and a recipient of the organizations most prestigious award, the SAE Medal of Honor. Pictured below, second on the right, Dan was honored at the 2010 SAE Foundation Banquet with The Donald W. Ableson Award for Visionary Leadership.



On behalf of the SAE Foundation and the millions of students who have in some way been nurtured through Dan's dedication to our mission - Thank You and Congratulations!



## Make a List and Check it Twice!

With this year's challenges and accomplishments still fresh in your mind, now is a good time to review and update your estate plans. To help you in this process, we have constructed the following checklist of estate planning actions for you to go over as the end of the year rolls closer.

- ✓ Review your current will and trusts. These may need to be updated because of major changes in your life, such as births or deaths, a move to another state, etc.
- ✓ Take inventory and make a written record of the contents of any safe-deposit box. Give a copy to a trusted family member and note any items that you are holding for someone else that don't belong to you.
- ✓ Review the beneficiary designations for your life insurance and retirement plans to make sure your beneficiary isn't someone who is now deceased.
- ✓ Make sure your durable power of attorney for health care and living will are current.
- ✓ Be sure you are comfortable with the guardian named in your will for those

under your care, such as minor children or a loved one who is disabled.

- ✓ Finish charitable contributions by Dec. 31. As you think about special holiday gifts for family and friends, remember that making charitable gifts to organizations such as the SAE Foundation in their honor can be a heartwarming experience that also offers you tax benefits.
- ✓ If you're still in the early stages of planning a gift, ask Mary Kaczorowski for help. She can assist you in determining the best way to remember us this year or in your estate. Just call 724.772.8507 or e-mail maryk@sae.org.

**For more tips on Planned Giving and the ways in which you can leave a Legacy to the SAE Foundation, please visit: [www.saefoundation.org/](http://www.saefoundation.org/) [siegelociety/](http://siegelociety/). Scroll down and look for the Planned Giving Tools link. While you are there, check out our feature articles which change monthly!**

P111696

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Winter 2011

**SAE**  
**FOUNDATION**  
*for Science and Technology Education*

# Newsletter

**Mission Statement:**

The SAE Foundation is the charitable arm of SAE International, which strives to encourage and increase student participation and achievement in science, technology, engineering and math (STEM). The SAE Foundation focuses its funding on educational programs, which provide hands-on, project-based, collaborative learning with exposure to STEM professionals. These programs include the *A World In Motion*® program and the SAE Collegiate Design Series. In addition, the SAE Foundation supports numerous scholarships and awards that serve to advance the engineering profession.

The internal revenue service has granted SAE tax-exempt status under Section 501 (c)(3) of the Internal Revenue Code and SAE is not a private foundation under section 509 (a)(1). All contributions made to the SAE Foundation/SAE Foundation Canada are tax deductible.

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