



## Marketing Committee Pushes Forward For Technology Education

At the recent International Technology Education Association (ITEA) Conference in Baltimore the CTTE Marketing Committee, under the direction of Council for Supervisors (CS) members Mellissa Morrow and Doug Wagner who both co-chair this effort for CTTE, had an exciting program of work produced. It was agreed upon by the committee members that the program would address the shortage of certificated technology education teachers coming from the postsecondary programs around the country.

The effort this year will result in the creation of a new nationwide web marketing effort which will be a one stop shop for anyone looking to become a technology education teacher. A nationwide tagline and URL will be developed, a PowerPoint will be posted for recruitment of students, and a list of schools offering B.S., M.S., and Ph.D. for Technology Education will be posted in an easy to navigate manner. We will have pre-designed brochures, flyers, and program information that could be edited by anyone to use for marketing their own program.

Some of the current ITEA Program and Teacher Excellence winners will be used for the web site profiles. We will be soliciting ITEA member responses and photos on "Why Become a Technology Teacher?" and will identify and post career pathways, salaries and career requirements, and the advantages of becoming a technology education teacher. We are collecting video clips and profiles of undergraduate and graduate students on "Why I Decided to Become a Technology Teacher", and are working on a new competition ad in TTT for 30-second videos from our members to meet some of the above ideas with cool prizes for the winners. Our hope is to roll out this new web site at ITEA 2007.

If you are reading this and what to be a part of the excitement (and help with the work) contact the individuals listed below for more information.

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## BEST PRACTICES IN TECHNOLOGY EDUCATION

By Greg Kane, State Supervisor Connecticut

In 2004 and 2005, The Technical Foundation of America brought together technology education leaders to identify what they felt were Best Practices in Technology Education.

As a result of these meetings TFA compiled and published these best practices last year.

Many of the authors are members of the ITEA-CS and the following are just two examples of what they identified as Best Practices. The entire book, authored by G. Eugene Martin and Christopher M. Martin, is available on line at <http://teched.vt.edu/ctte/>

**Best Practice:** *Connecticut Technology Education Leadership Council*

**Best Practice Nominator:** Gregory Kane

**Description of Best Practice:** The Connecticut Technology Education Leadership Council (CTELC) is comprised of technology education teachers who come together five times a year at different sites across the state to experience firsthand the real world applications of technology. During the past 54 years, the CTELC has met, for example, onboard nuclear submarines, at science centers, and at nautical museums. Members have visited amusement parks to meet with ride engineers, factories to discover the technology behind jet engines, graphic production plants to see unique labeling design and production techniques, radio and television broadcast facilities, and schools that offer unique educational programming. The CTELC has even met at a regional mall to learn about the technology behind designing, building, and operating a multimillion dollar retail facility.

Along with gaining first-hand knowledge of the technological world, the CTELC functions as an advisory group to the State Consultant for Technology Education. The CTELC provides regular contact between the state supervisor and school district leaders of technology education throughout Connecticut. Benefits to members include the following:

- share ideas
- communicate with each other on the status of district level technology education programs
- develop cooperative solutions to mutual problems
- develop new and innovative curriculum directions
- broaden the instructional perspectives of the technology education leadership
- further the cause of technology education

Membership in the organization is open to any technology education professional in Connecticut who is or aspires to be a local, regional, or state leader. Before each meeting, members are mailed a postage-paid RSVP post card and a flyer describing the meeting's location and agenda. Members are encouraged to bring guests to the meeting including students who are enrolled in a Connecticut technology education teacher preparation program.

Following the formal program, the state supervisor provides an update of technology education related activities, grant and professional development opportunities, legislative issues, and general items of interest to the membership. During this portion of the meeting, representatives from other technology education

related associations such as the Technology Student Association and the International Technology Education Association have an opportunity to provide informational updates.

Each June CTELC members are invited to share their suggestions for future meeting sites. As part of the leadership development aspect of this council, individual members take responsibility for contacting potential sites and arranging all logistics of the meeting from onsite registration to dinner planning.

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**Best Practice:** *Certification of Technology Education Programs*

**Best Practice Nominator:** Doug Wagner

**Description of Best Practice:** The State of Georgia has established a system for certification of Technology Education Programs within the state. This certification is intended to recognize those programs that maintain the highest standards. It is also intended to serve as a guide for new programs that are being developed. By following the standards for certification, a quality program can be assured. This program certification process has been developed for high school and middle school technology education programs in Georgia. This process includes a review of instructional facilities and equipment, personnel, administration and support, curriculum, and instruction. This program has a positive track record and could be adopted locally or by each state. The program was funded by the Carl D. Perkins funds and can be utilized by others at little or no cost.

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## Now is the time to plant the seeds of innovation

By Dr. Yvonne Spicer, Associate Director K-12  
National Center for Technological Literacy  
Museum of Science Boston



In his 2006 State of the Union address, President Bush proposed new federal support to improve K-12 math, science, and technological education in order to foster innovation and prepare the United States to compete more effectively in the global marketplace. Among other things, his American Competitiveness Initiative calls for raising student achievement through testing and accountability and training more high school teachers in math and science.

While I applaud the President's initiative, we need to do more.

First, we must expand math and science education to encompass technology/engineering for both students and teachers.

Engineering—the process that creates the technologies in our human-made world—is core to educating our students to live, work, and innovate in a competitive global economy.

Second, we must plant the seeds of learning in students about the human-made world as early as elementary school and continue to foster engineering through high school, college, and beyond.

Why? Our children operate computers, iPods, and televisions, but don't know how they are created. Our students are taught many subjects, but not often able to apply these lessons in life. How valuable is knowledge that cannot be applied? Let's educate our children not just to learn about math and science, but to be technologically literate—to understand their human-made world.

Luckily, young children are already fascinated with building and discovering how things work. We need to capitalize on their curiosity. Engaging them in engineering skills—identifying a problem, designing a solution, testing and improving the design—offers a platform for applied learning in math, science, English language arts, and history & social studies. Engineering pulls together these disciplines. But, more importantly, this experience might even spark our children to imagine that being an engineer is fun.

Let's show young people how engineering skills will help them apply their math and science knowledge to solve real problems, whether it's building a dam or a robot. In the past, we have valued sequential, logical learning over kinesthetic, hands-on, sensory learning. But learning, as psychologist Howard Gardener says, involves multiple intelligences. It is time to shift the paradigm.

As educators, elected officials, and parents, we must change how we think about technology/engineering education and work together to bring the curriculum framework to life in the classroom.

In Massachusetts alone we educate nearly one million public school students. If one-tenth of them pursued a career in science and engineering, imagine the impact on our state's economy and workforce! Already, the Commonwealth is planting the seeds. Massachusetts was the first state in the nation in 2001 to

develop a curriculum framework and assessment for engineering K-12. More recently, the state Board of Education adopted a revised high school Science and Technology/Engineering Curriculum Framework. High school students graduating in 2010 must pass an MCAS exam in one of the sciences or technology/engineering.

Seeds are being planted now in central Massachusetts. In summer 2005, twelve 3<sup>rd</sup>–5<sup>th</sup> grade teachers from this area joined others in an engineering program, led by the Museum of Science, Boston and sponsored by the National Science Foundation at Worcester Polytechnic Institute, Tufts University, and the University of Massachusetts-Lowell. The teachers learned how to integrate new course materials into the curriculum to meet state and national standards. This "Engineering is Elementary" curriculum, created by the Museum's National Center for Technological Literacy, fuses engineering with science, literacy, math, and social studies in lessons, featuring children around the world who use engineering design to build their own water filters, windmills, and bridges.

Today, those 12 teachers are using "Engineering is Elementary" in their classrooms. This summer at Worcester Polytechnic Institute, they will plant seeds in another 40 teachers.

In another example, high school teachers in Worcester, Shrewsbury, and Belchertown are field-testing the Museum of Science's "Engineering the Future" curriculum. Students learn rich content in science and engineering as well as designing, building, and testing prototypes. The course focuses on solving engineering problems involving power systems, communications, manufacturing, and construction.

To ensure that the curriculum is rigorous and engaging and that teachers have the tools to foster the necessary critical thinking skills in our students, we must challenge our government officials to provide adequate federal and state funding for teacher professional development and resource materials.

It is time to plant the seeds inspiring our children to be the innovators and problem-solvers of the future. To understand, use, and create new technologies through engineering is essential knowledge. We have an opportunity in Worcester and across Massachusetts to show the rest of the country the importance of technology/engineering and the value it adds to our K-12 educational system.



cal Literacy and Advancing Excellence in Technological Literacy. The new series made its initial debut at the ITEA Conference in Baltimore with the Foundations of Technology, High School Model Course Guide. In addition,



ITEA is pleased to announce the development of the Engineering byDesign™ (EbD™) Model Program and the Engineering byDesign™ Network. The EbD™ Program series consists of ten standards-based courses, all built on the *Standards for Technological Literacy* and

K-2	1	Integrated concepts & lessons	
3-5	2	Integrated concepts & lessons	
6	MS-1	Exploring Technology	18 weeks
7	MS-2	Invention and Innovation	18 weeks
8	MS-3	Technological Systems	18 weeks
9	HS-1	Foundations of Technology	36 weeks
10-12	HS-2	Impacts of Technology	36 weeks
10-12	HS-3	Technological Issues	36 weeks
10-12	HS-4	Technological Design	36 weeks
11-12	HS-5	Advanced Design Applications/Probase*	36 weeks
11-12	HS-6	Advanced Technological Applications/Probase*	36 weeks
12-12	HS-7	Engineering Design courses	36 weeks

Technological Systems, a Middle School Model Course Guide will be released. Following conference, Technological Issues, a High School Model Course Guide will be released. All the guides are sporting a “new” cover, and the insides have been redesigned to be teacher friendly – including lesson plans, rubrics, and student worksheets for each unit. The chart below shows the articulated sequencing of courses that are designed for each grade level on the standards and benchmarks in *STL*.



As a part of the ITEA-CATTS EbD™ Model Program Series, two new advanced high school courses have added as part of the articulated sequence of courses. The two new courses are *Advanced Technological Applications* and *Advanced Design Applications*. Each is based on the NSF Funded Project called proBase. Each course is divided into four distinct units, and are available as a course,



semester package, or individually.

The Engineering byDesign™ Network teachers and state teams met in Baltimore to receive their first introduction to the courses that will be implemented this coming school year. Eleven middle schools and eleven high schools from the CATTS Consortium States (FL, GA, IL, KY, MD, MO, NC, ND, OH, TN, and TX) will be participating in the project to create model demonstration sites for the EbD™ Program. Teachers attended a full day workshop in Baltimore and is followed an online course. The eTIDEonline course participants will design and share resources and examples of student work (student exemplars) with other teachers as a community of learners. The EbD™ Network will begin implementation in September, 2006, and implement the end of course assessments that will measure technological literacy.

The International Technology Education Association’s, Center to Advance the Teaching of Technology and Science and the Valley City State University announced a new partnership to deliver ITEA-CATTS online courses. eTIDEonline made its debut at the ITEA Annual Conference as part of the EbD™ Network training for the CATTS Consortium states. eTIDEonline is an integral part of the ITEA 2006 Professional Development Plan for the *Engineering byDesign™* (EbD™) Network. The two courses will be offered for teachers in the EbD™ Network – one will be the Grade 9 - Foundations of Technology, and the second will be the Grade 7 – Invention and Innovation. Members of the EbD™ Network will enroll in the courses that are hosted and taught by Valley City State University’s James Boe.



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NEWS RELEASE  
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## **Pennsylvania High School Team Wins Third Place at International Technology Competition**

In its second appearance at the F1 in Schools™ World Championships, a student team from Bloomsburg (Pennsylvania) High School placed third in The Formula One Technology Challenge.

The competition, which was held in Birmingham, England, in January, included teams from Australia, England, Kuwait, Malaysia, Northern Ireland, Scotland, Singapore, South Africa, South Korea, the United States, and Wales. Each team designed, analyzed, built, and raced a Formula One (F1)-type, Co2-powered car. The teams also documented and were judged on their design process and oral presentation.

Bloomsburg High School's "Team Turbo" consisted of Michael Smith, Austin Mantz, Tyler Marshall, Jessica Rubenstein, Matt Archey, and the team's advisor, Kirk Marshall. The team was last year's International Champion, winning the best overall team and the fastest vehicle awards. "This year our car was faster than in the past, but it finished in second place due to the level of competition," commented Marshall. "As more and more countries get involved in this CAD/CAM design challenge, the quality of the entries is going to require teams to go beyond the basics."



*Team Turbo from Bloomsburg (Pennsylvania) High School recently won third place in the international finals of "The Formula One Technology Challenge" held in England. Team members include (front row, from left) Jessica Rubenstein, Tyler Marshall, and Team Advisor Kirk Marshall; (back row) Matt Archey, Austin Mantz, and Michael Smith.*

## Georgia Middle School Team Places 10<sup>th</sup> at International Technology Competition

In its first appearance at the F1 in Schools™ World Championships, a student team from East Cobb Middle School in Marietta, Georgia, placed 10th in The Formula One Technology Challenge.

The competition, which was held in Birmingham, England, in January, included teams from Australia, England, Kuwait, Malaysia, Northern Ireland, Scotland, Singapore, South Africa, South Korea, the United States, and Wales. Each team designed, analyzed, built, and raced a Formula One (F1)-type, CO<sub>2</sub>-powered car. The teams also documented and were judged on their design process and oral presentation.

Members of East Cobb Middle School's "Flying Cougars" include Garrett Stache, Tyler Gagat, Hunter Bobbey, Lauren Titus, and Shannon O'Shea. The team's advisor is Fred Stillwell. The Flying Cougars were the first-place middle school team at the U.S. National Finals in June 2005. "Our first visit to an international competition was quite an eye opener," commented Stillwell. "The quality of the competition was absolutely first rate. My students now understand exactly where they need to be for next year."



*Flying Cougars from East Cobb Middle School in Marietta, Georgia, recently placed 10<sup>th</sup> in the World Championships of "The Formula One Technology Challenge" held in England.*

*Team members include (from left) Hunter Bobbey, Lauren Titus, Garrett Stache, Shannon O'Shea, and Tyler Gagat.*

Garrett Stache, the team's design engineer, was pleased with the team's performance on the track. "We had a best time of 1.147 seconds, just a tick more than six hundredths of a second off of the pace. We saw the best teams in the world, and we will be much improved from the opportunity," he said. "It's been a great educational experience for all of us."

The students' experience with the F1 program has been invaluable, according to Stillwell. "Each student has gained many new skills as well as a much deeper understanding of the term teamwork," he said. "All of the students worked very hard preparing for the various parts of the competition. Each contributed in their own special way. Our driver, Hunter Bobbey, demonstrated his icy nerve when he produced a reaction time of .004 seconds on his first race. He then followed that with a

.002 time. Unbelievable!"

Also competing from the U.S. was "Team Turbo" of Bloomsburg (Pennsylvania) High School, which finished third in the competition. "Autodesk is delighted to support the F1 in Schools competition," said Jason Goetz, Education

Programs Manager for Autodesk's Manufacturing Solutions Division. "It gives students very early experience with engineering and the entire design-to-manufacture process." Founded in England in 1999, the F1 in Schools competition has exceeded all expectations, according to Andrew Denford, F1 in Schools Founder and Chairman, and has attracted more than two million students internationally.

Bernie Ecclestone, Chairman and CEO of Formula One Management, demonstrated his continued support for the challenge with an agreement to use a specially designed, trademark-protected logo throughout the world. He said, "We are delighted to be supporting F1 in Schools. It is extremely important to our sport to encourage young people to enter the world of high-performance engineering. F1 in Schools is a truly global challenge, which meets all the objectives of our business." He also donated the Bernie Ecclestone Trophy, which was awarded to the overall winning team, "The Stingers" from Australia. Among the prizes awarded to the overall winning team were full scholarships to City University in London, England, worth more than \$500,000.

Middle school and high school students can enter the F1 in Schools competition, which is supported by technical sponsors Autodesk, Denford, and Pitsco, and association sponsor, the Technology Student Association. For more information, go to [www.f1inschools.us](http://www.f1inschools.us).



Goodheart - Willcox Publisher

Mr. John Flanagan and Goodheart-Willcox Publisher have been active, long-term supporters of the International Technology Education Association and the ITEA Council for Supervisors. Contributions include sponsorship ITEA Teacher Excellence Program and the Council for Supervisors, Local, State and Supervisor of the Year Awards.

John and the employees of Goodheart-Willcox Publisher are also involved with TSA as the publishers of the Middle and High School Technology Activities - The Official TSA Competitive Events Guide and advertise in 120 state and local education newsletters to support local communications.

Mr. Flanagan received an AB degree from Wabash College with a major in Economics and an MBA degree from the University of Michigan with a concentration in Finance and Marketing. He joined Goodheart-Willcox in 1968 as an Editor and held various positions in the company including creative page layout, sales, and book production. His current title is Chairman, President, and Chief Executive Officer. In addition, Mr. Flanagan served twelve years on the Board of Education for his local high school and is proud to be a member of Epsilon Pi Tau.



## Award Winners from the 2006 ITEA Conference Baltimore, Maryland

**International Technology Education Association  
Council for Supervisors  
March 23, 2006**

**Ken Starkman**

*Supervisor of the Year*

In Appreciation of Outstanding Service

**Dennis Sobeleski**

*Outstanding Local Supervisor*

In Appreciation of Outstanding Service

**Marquita Friday**

*State Supervisor of the Year*

In Appreciation of Outstanding Service

**Melissa Morrow**

*Distinguished Service Award*

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HERE

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Bloomsburg High School Cont.

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Students experience real-life engineering, according to Marshall. “Each had a responsibility and a particular talent,” he says. “They did their best from creating a portfolio to designing and building an F1 car. If one student had not completed their work, we wouldn’t have been able to return to the podium!” Also competing from the U.S. were “The Flying Cougars,” a middle school team from East Cobb Middle School in Marietta, Georgia, that finished 10<sup>th</sup> in the competition.

“Autodesk is delighted to support the F1 in Schools competition,” said Jason Goetz, Education Programs Manager for Autodesk’s Manufacturing Solutions Division. “It gives students very early experience with engineering and the entire design-to-manufacture process.” Founded in England in 1999, the F1 in Schools competition has exceeded all expectations, according to Andrew Denford, F1 in Schools Founder and Chairman, and has attracted more than two million students internationally.

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