

# NETWORK



Volume 13, Number 2, March 2001

TECHNOLOGY EDUCATION ASSOCIATION OF MARYLAND

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## National Engineers Week

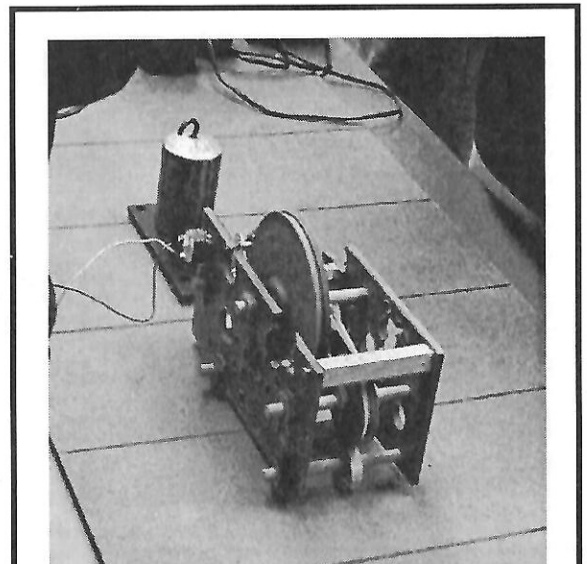
### Technology Education's Link to Business and Industry

The Technology Education Association of Maryland (TEAM) has benefited greatly from its relationship with the Engineering Society of Baltimore (ESB). 50 years ago the engineering profession launched National Engineers Week to showcase engineering's contributions to our quality of life. TEAM and ESB combined forces to make this year's event an especially stellar event for Maryland students, teachers, and engineers.

As co-sponsors of the Maryland Engineering Challenges, TEAM and the Engineering Society of Baltimore have been partners for the last ten years. Recently TEAM held several events at the ESB headquarters, the Garrett-Jacobs Mansion, in Baltimore. Our 4th Annual Awards Banquet was held there last October and will be there again this coming Fall. More recently, TEAM held its special event in the Maryland Engineering Challenges, the Tractor Pull, at the Engineers Club.

Both TEAM and ESB share the mission of preparing students to be contributors to a highly technological society. Both groups have a shared vision of how positive educational experiences can impact students' career choices. In an effort to provide action-packed, positive experiences, we have joined with the engineering community to ensure that there are a wide range of engineering-related activities available to students.

The February 19th Tractor Pull event at ESB drew over 200 student, parents, teachers, and engineers. Over 30 teams of high school students competed. The interaction between the three groups was electric. High powered engineering was taking place right on the spot as teams struggled to get a little more pulling power out of their vehicle. At the luncheon that followed the competition, students and engineers were seen redesigning vehicles on napkins. This kind of activity will be long remembered by the students involved. They will recall the excitement evident in the engineers' faces as the tractors were being tested. They will remember the way their technology education teacher interacted with the engineers in facilitating and judging the event. In all, National Engineers Week 2001 will stand out as a significant event in the memories of all involved and will stand as a reminder of what can be accomplished through our unique partnership.



**A Student-Built Tractor Struggles For a Little More Power**

## **President's Message:** Adam Sheinhorn

Greetings fellow TEAM members. I hope that everyone's school year is going well and your students are continuing to strive for technological literacy. As we approach the spring season, we are also entering the nomination season. Over the past week, Technology Education teachers, supervisors, local CTE directors, and superintendents have received information regarding our state excellence awards program. Teachers and programs from the elementary, middle, and high school levels are recognized for their achievements over the past school year. Additionally, we take the time to recognize those individuals or organizations that have gone the extra mile as advocates for Technology Education.

This is the time for you to recognize the hard work and dedication of a colleague that you feel is deserving of one of these awards. Help us to show the state of Maryland and the rest of the country the achievements of our teachers and students.

There are certainly benefits to receiving one of these excellence awards, in addition to the local recognition. Award recipients, with the assistance of TEAM, will travel to the annual ITEA conference to be recognized as a leader in Maryland. It is truly a wonderful feeling to be recognized for all of the hard work that we pour into our roles as technology educators.

Our state excellence awards program is one way that TEAM shows its appreciation to the membership. We value the participation of our members and want to make sure that you continue to grow with us. Keep your membership active and secure your opportunity to be recognized, by Maryland and the nation, as a top-notch technology educator.



**A Naval Academy Midshipman Judging the Safe Racer Competition**

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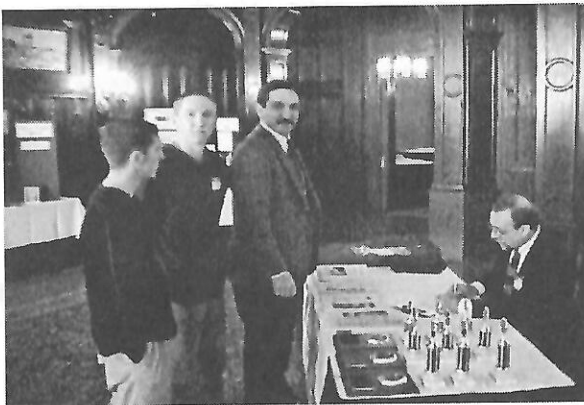
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## MARYLAND ENGINEERING CHALLENGES TEAM'S TRACTOR PULL

The Technology Education Association of Maryland, co-sponsor of the Maryland Engineering Challenges held its special event, the Tractor Pull at the Engineers Club in Baltimore on February 19<sup>th</sup>. A new venue and a unique date, Presidents' Day, seemed to suit the record number of participants who competed in our miniature version of the popular Maryland pastime.

Starting with only one common component, a 9-volt electric motor, teams of high school students from throughout the State applied their genius to the design and fabrication of an efficient pulling machine. In addition to the tiny tractor, each team developed and submitted a portfolio documenting their engineering process. Thirty-one teams completed vehicles for the competition and they, along with their coaches, families, and friends, came to the beautiful Engineers Club on Mount Vernon Square for a day of exciting competition, a delicious luncheon, and two intriguing presentations. Mr. Tony Brown of the MTA delivered an excellent presentation on the Maglev transportation system proposed for the Washington-Baltimore corridor. His talk was followed by Mr. Clarence Bishop's presentation of plans to bring the 2012 Olympics to Baltimore. Both of these endeavors will require the talents of Maryland's engineers.



Registration for TEAM Tractor Pull at Engineers Club

The top finishers in the Tractor Pull were:

### First Place

Franklin High School, Baltimore County

### Second Place

Oxon Hill High School, Prince George's County

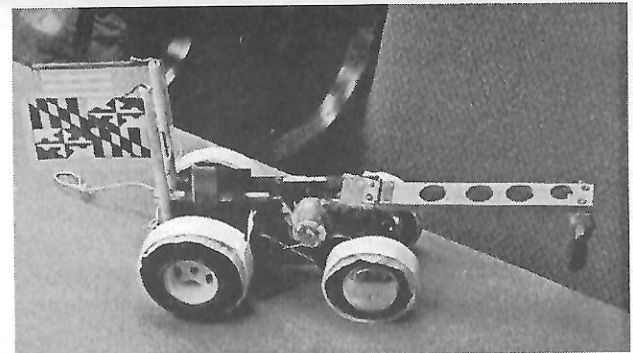
### Third Place

Kent County High School, Kent County

Congratulations are in order for all of the participants in this challenging event. As you look ahead to events for the coming school year, we encourage you to consider having your students tackle one of the Maryland Engineering Challenges. Information about the event can be obtained at the Maryland Center for Career and Technology Education Studies website [www.mcctes.org](http://www.mcctes.org) or by calling the Baltimore Museum of Industry at (410) 727-4808 extension 111.



Judges James Protzman and Richard Maganani  
Interview Tractor Pull Competitors



A Stylish Entry in the Tractor Pull Challenge



Students and Engineer, Gary Johnson, Enjoy  
a Delicious Luncheon

## UMES Graduate Program News Dr. Gerald Day, Coordinator of Graduate Studies

In each issue of Network, there will be an update of activities and news about the Master of Education in Career and Technology Education program offered by the University of Maryland Eastern Shore.

**Student Enrollment:** There are about 35 teachers taking courses in the graduate program. Most of these are Technology Education teachers.

**First Graduates:** The first graduates of this new masters program will be in the spring of 2002.

**Spring 2001 Semester:** Some 25 teachers are taking courses during the spring semester. These courses are: CTED 600 Technology Education Content, Methods, and Strategies taught by Dr. Charles Beatty at the Maryland Center for Career and Technology Education Studies; CTED 615 Administration and Leadership taught by Dr. Lloyd Tyler at the University of Maryland Eastern Shore; and EDUC 601 Human Learning and Cognition taught by Dr. Linda Oliva at the University of Maryland Baltimore County.

**New Students:** The program would like to welcome five new students who are taking graduate courses. They are: **Phillip Aylestock** from Crofton Middle School in Anne Arundel County; **Richard Cramer** and **Larry Gulick** from Aberdeen High School; **Edward Garner** from Lime Kiln Middle School in Howard County; and **Andre Weichbrod** from Oakland Mills Middle School in Howard County.

**TELPE and the Masters Program:** Teachers enrolled in the graduate program who have actively participated in the Technology Education Leadership Program for the last two years are earning six graduate credits for the Core Technology courses.

**New ITEA Membership Rate for Graduate Students:** Graduate students are now eligible to apply for membership in the International Technology Education Association at the student rate of \$30 per year. A letter of verification from the student's advisor must accompany the application form.

**New Web Page:** The masters program has a new web page linked to the UMES web page. Check out the information about the program at [www.umes.edu](http://www.umes.edu).

**Schedule of Courses:** A schedule of courses to be

offered during the summer sessions, fall, and spring semesters will be available in March. It is planned that two or more graduate-level courses will be offered each semester.

For more information: Contact Dr. Gerald Day at (410) 659-5332 , [gfday@mail.umes.edu](mailto:gfday@mail.umes.edu) or Dr. Leon Copeland at (410)651-6468, [llcopeland@mail.umes.edu](mailto:llcopeland@mail.umes.edu).

## Eastern Shore TELP Consortium Hosts Local In-Service Activities

Under the direction of TELP Teacher Leaders Patrick Lieb, Sam Ellis, Kevin Webster and Larry Ryan, Eastern Shore technology educators are receiving an excellent series of professional development activities.

### Session I

Thirty teachers attended the first session at UMES in September that focused on "Core Technologies." Dr. Leon Copeland addressed the group on the purpose and scope of TELP. Patrick and Larry introduced the group to the "Featherweight Challenge," a structural technology activity. Sam and Kevin facilitated the "Golf-Ball Float."

### Session II

Joe Depto lead a session on electrical technology and Byron Yarbrough presented a lesson on electronics. All participants successfully completed a tractor pull vehicle.

### Session III

In the third session, teachers constructed an excellent tensile strength tester for use in a variety of structural and materials technology activities.

### Session VI

Tony Johnson shared his expertise on the "Metric Glider" and distributed excellent instructional aides to the attendees. Sam Ellis presented lessons and projects that can be used as modules in the classroom and Hans Vandenbosch shared plans for a pneumatic rocket launcher.

### Session V

Kevin Webster directed the group through construction of the power-pole apparatus needed for a number of Ingenuity Challenges. He then lead the participants through the design, fabrication and testing of an airplane.

In summary, the Eastern Shore TELP Local In-Service Activities for 2000 were well-attended, well-planned, and well-delivered. The TELP Teacher Leaders are carrying out their mission of introducing innovative and interesting content.

## Technology Education Excellence Awards

Each year nominations are solicited for awards recognizing Maryland's outstanding teachers and programs in Technology Education. The awards are co-sponsored by the Technology Education Association of Maryland (TEAM) and Maryland's technology community. Nomination forms have been distributed to all local school superintendents, local directors of career and technology education, local supervisors of Technology Education, and TEAM members.

As we commence with this year's awards program, it is a pleasure to recognize last year's recipients one more time. The Program Award Winners for 2000 were:

Belmont Elementary School, Kim Vigliotta, Teacher  
Montgomery Village Middle School, Joe Panarella, Teacher  
Southwestern High School, Sharon Ball, Teacher

Teacher excellence awards were made to:

Janet Manning, New Market Elementary School  
Roy Rosnik, Hammond Middle School  
Kevin Hardy, Walter Johnson High School

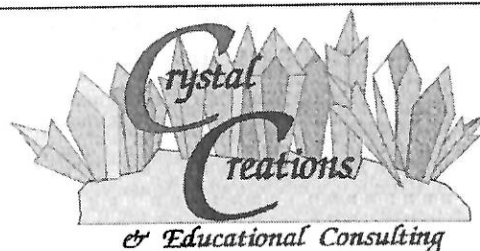
This year's awards banquet will be held on Thursday, October 18<sup>th</sup> at the Engineer's Club in Baltimore. Please consider attending this event to honor our teacher and program excellence award winners. Nomination forms and supporting documents are due to TEAM's Vice-President for Professional Relations by **April 13, 2001**. If you have questions or have not received your nomination forms, contact Bob Gray at (410) 685-1648.

## 2012 Olympic Bid

*Could the Washington-Baltimore area be the site of the Olympic Games?*

The Washington/Baltimore Regional 2012 Coalition thinks so. Its board of directors comprised of 32 members including 13 business leaders from the region, five appointments made by each of the mayor's of Washington and Baltimore, two appointments made by each of the governor's of Maryland and Virginia, six regional athletes and sports personalities, and the president and chief executive officer. The group was formally launched in Annapolis, Maryland on June 30, 1998.

The Washington - Baltimore region is one of eight cities that would like the honor of hosting the Games. The others are: Cincinnati, Dallas, Houston, Los Angeles, New York, San Francisco, and Tampa.



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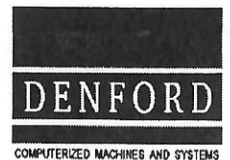
## Technology Education Association of Maryland Executive Board for 2000-2001

|  |                                     |
|--|-------------------------------------|
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| Vice President Professional<br>Relations   | Kevin Hardy<br>Montgomery County    |
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|                            |   |
|----------------------------|---|
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| District 4 Representative  | Dan Wood<br>Howard County                         |
| District 5 Representative  | Quinn Patterson<br>Prince George's Co.            |
| District 6 Representatives | Drew Evans<br>Barbara Musser<br>St. Mary's County |
| District 7 Representative  | Michael McIntyre<br>Baltimore County              |
| District 8 Representative  | Sharon Ball<br>Baltimore City                     |
| District 9 Representative  | Paul Elwood<br>Cecil County                       |
| District 10 Representative | Vacant  |
| District 11 Representative | Patrick Lieb<br>Worcester County                  |
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## Baltimore-Washington Maglev Project

Imagine replacing your rush hour commute with a 17-minute ride in a vehicle traveling 240 mile per hour – without losing a drop of your morning coffee. Although the scenario seems futuristic, the vision is taking shape along a corridor between the City of Baltimore and the District of Columbia. A high-tech transportation team – led by the Maryland Mass Transit Administration of the Maryland Department of Transportation – is studying potential alignments, Magnetic Levitation technology, and operating parameters for a revenue-producing Maglev system linking Baltimore, BWI Airport, and Washington, D.C.

Maglev is among the world's most advanced transportation technologies. It allows people to travel at very high speeds, efficiently, quietly, and in great comfort. In recent years, Maglev prototype vehicles have been developed and operated on test tracks in Germany and Japan. The success of Transrapid's Maglev Demonstration Project in Emsland, Germany, paved the way for selecting this technology for a U.S. prototype along the Eastern Seaboard.

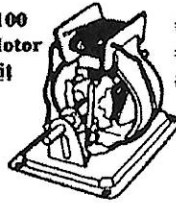
The 40-mile Baltimore-Washington Maglev Corridor is one of seven in the country to receive planning grants under the \$950 million Maglev Deployment Program, sponsored by the Federal Railroad Administration (FRA). Currently FRA is selecting one or more of the corridor study teams to complete Environmental Impact Statements and plans to name a corridor finalist in 2003.

For more information, visit [www.bwmaglev.com](http://www.bwmaglev.com)



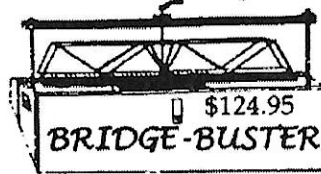
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| 3/16" x 3/16" | 50 pcs. \$11.95 | 500 pcs. \$99.00  |
| 1/4" x 1/4"   | 50 pcs. \$14.95 | 500 pcs. \$133.00 |
| 1/16" x 3"    | 10 pcs. \$8.50  | 50 pcs. \$37.50   |
| 1/8" x 3"     | 10 pcs. \$9.95  | 50 pcs. \$42.50   |
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| 1/8" x 1/8"   | 50 pcs. \$8.35  | 500 pcs. \$79.50 |
| 1/8" x 3"     | 15 pcs. \$19.95 | 50 pcs. \$59.00  |
| 1/4" x 1/4"   | 25 pcs. \$8.45  | 100 pcs. \$29.00 |

TEAM's newsletter is edited by Aaron Gray. Comments and suggestions are welcomed at [agray@mail.howard.k12.md.us](mailto:agray@mail.howard.k12.md.us)



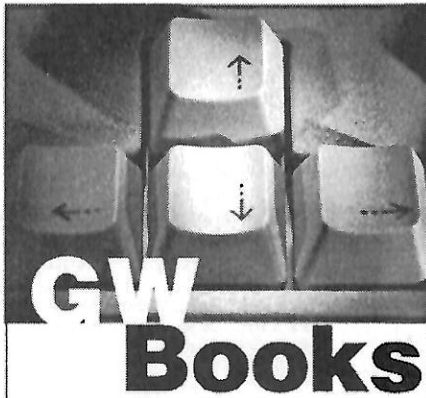
Young Engineers Prepare for the Maryland Engineering Challenges

## TECH EXPO 2001

TEAM's annual conference, TECH EXPO 2001, will be held at the Baltimore Museum of Industry on Friday, October 19, 2001. As we begin assembling the program for this exciting event, we invite all TEAM members not only to attend but also to consider presenting at the conference. We would like to highlight some of the many excellent Technology Education activities going on in Maryland. If you are interested in sharing one of your special teaching-learning strategies with your colleagues contact Patrick Lieb, TECH EXPO Coordinator, at TELP21@aol.com. Presentations should fit a 45-minute timeslot and be suitable for a group of 20-25 people.

In addition to a variety of interesting presentations on Technology Education, the TECH EXPO will feature an outstanding vendor exhibit. The leading distributors of hardware and software designed for our field will display their wares in the Decker Gallery of the Baltimore Museum of Industry. This element of the EXPO provides visitors with an opportunity to not only see the latest technology but a chance to talk one-on-one with company representatives about products and related educational issues.

As always, all attendees are invited to take part in our morning continental breakfast and our delicious luncheon. Door prizes, good company, excellent food, interesting exhibits, and a beautiful site on the Inner Harbor all combine to make TEAM's TECH EXPO 2001 the place to be on Friday, October 19, 2001.



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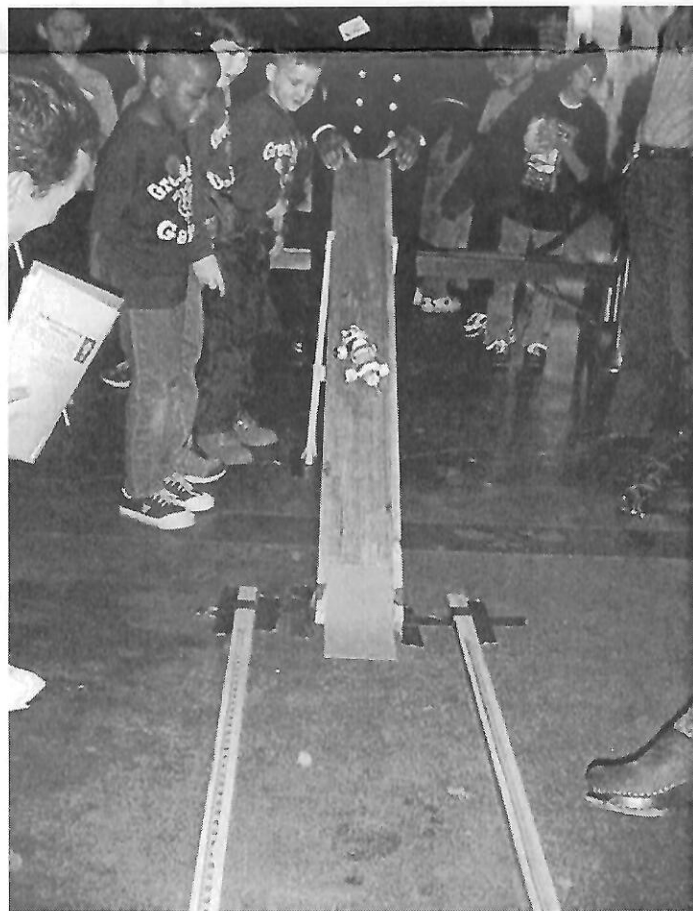
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The Safe Racer Competition in the Maryland Engineering Challenges

## BOOK REVIEW

### One Good Turn: A Natural History of the Screwdriver and the Screw

By

Witold Rybczynski

New York: Scribner, 2000, 176 pp, \$22.00

The author's in depth exploration of the technology of screwdrivers and screws is an outgrowth of a request by editors of The New York Times to compose an article identifying 'the best tool of the millennium'. Rybczynski is an architect and expounds his expertise as the Martin and Margy Myerson Professor of Urbanism at the University of Pennsylvania. Considering his background, the choice of the subject comes as no surprise. Among his achievements is having built a house using only hand tools. From this effort and other related experiences of a similar nature, he has acquired a detailed and practical knowledge of the toolbox. Therefore, his final selection of the screwdriver as the topic for this essay seems almost logical. While delving into the scholarly history of this tool, he became caught up in investigating the origins and development of the screw. Together with its mechanical companion, the screwdriver, he describes how their development changed the course of civilization.

Among the fascinating characteristics of this effort is the fact that Rybczynski is able to relate the evolution of the screwdriver and screw in a truly scholarly manner and yet succeeds in presenting it as a most interesting story. The thorough study of the subject is evidenced by the provision of 132 notes throughout the well-composed seven chapters. He provides short biographies of individuals who made advances along the way that eventually led to the their contemporary status. Like a scholar in the truest sense, he indicates the sources of his information directly in the text in some cases, and in the chapter-by-chapter notes in others.

In Chapter One: 'The Carpenter's Toolbox' he makes the statement: 'Hand tools are true extensions of the human body, for they have evolved over centuries of trial and error.' In this chapter the author tells about his search through the literature on tools to find the suitable subject for his essay. He made his decision to look further into the screwdriver when he found very little history readily available on it.

During his search for the first screwdriver, the author becomes interested in the screw. He describes his attempts in Chapter Four 'The Biggest Little Invention'. His fascination with it is evident, saying: "Take a close look at a modern screw. It is a remarkable object." In this chapter he reviews the progress made over centuries to make it more useable. The author describes how the socket-head screw, a

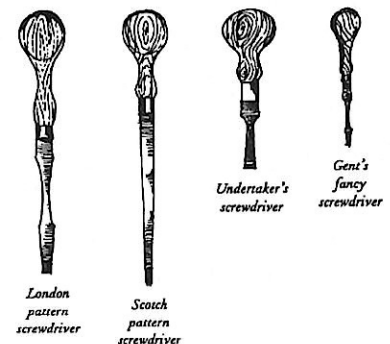
critical breakthrough in the development of the screw, was patented by Peter L. Robertson in 1907. In 1936, the Phillips screw was devised. Chances are many of the readers likely have both types of screws and screwdrivers in their possession. Interesting mini-biographies of Robertson and Phillips are also provided in this chapter.

In reviewing the inventions of many tools, Rybczynski makes the statement: 'Mechanical genius is less well understood and studied than artistic genius, yet it is surely analogous.' He quotes Bataille, a French pioneer of the steam engine: 'All great discoveries carry with them the indelible mark of poetic thought. It is necessary to be a poet to create.' Rybczynski's reaction is that while the screwdriver may not be really poetic, he feels that the screw certainly is. With that, a description of the complexities associated with the screw is provided in an understandable fashion.

'Father of the Screw' is the title of Chapter Seven. The heart of this chapter is dealing with the question: 'Who was the inventor of the endless screw?' There are several claims found in the literature. Eustathius, a Greek scholar, quotes the author: Drachmann: 'Screw is also the name of a sort of machine, which was first invented by Archimedes.' The author added that it seems to be most plausible because Archimedes is credited with the water screw, a device for lifting water. An important point made several times in this work is that (many) mechanical inventions owe their existence to human imagination rather than technological evolution. The book closes with the following: 'The discovery of the screw represents a kind of miracle. Only a mathematical genius like Archimedes could have (done it) ... we must add a small but hardly trifling honor to his many distinguished achievements: Father of the Screw.' It is an excellent way to close this work.

In conclusion, anyone interested in tools and their relationships to society will find this book of interest and also a great source of information about tools. It is written in a non-technical manner for the most part, supplemented by clear illustrations of tools and machines as they are described. A Glossary of Tools is provided. Rybczynski's notes, identified by chapter, are an excellent supplement to the background of the many topics. The index is well done, making it easier for the reader to return to the most interesting parts of the book. Overall, it's a good read.

Lynne M. Gilli  
Angelo C. Gilli



## TEAM WORKSHOP AT BMI

March 10, 2001

Technology teachers from across the state took part in TEAM's Workshop on Non-Linear Video Editing. Sean Rhodes from DEPCO presented a 20-minute introduction to the non-linear video editing system (ScreenPlay) from Applied Magic. After demonstrating the basic features of the system, Sean had the participants take video clips and put them into a storyboard on the ScreenPlay system. Some people added transitions and music.

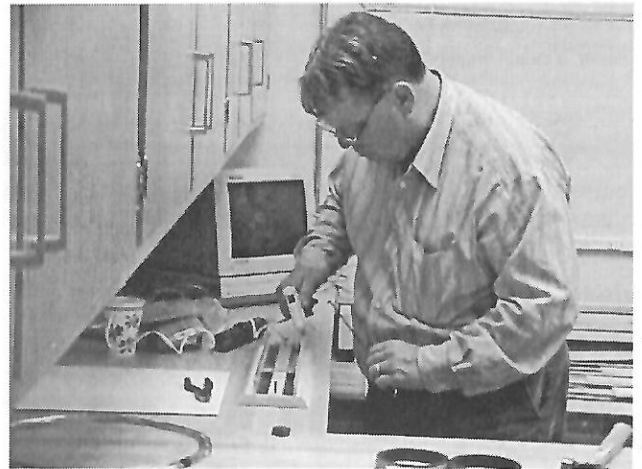


Next, participants edited ten video clips and assembled them into a final product that included music, credits, and transitions. Finally, they transferred their final results onto a videotape so they could take their work home. The workshop showed how hardware and software can free students to be more creative and produce high quality videos.

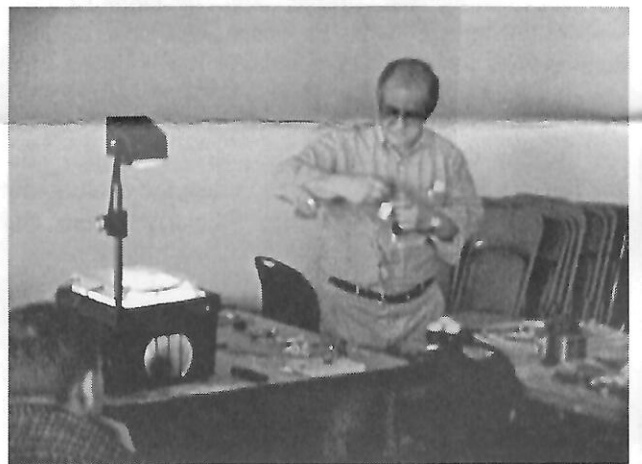


TEAM thanks Ronald A. Williams, Ltd. and Sales Representative, Jim Behne for making this workshop an enjoyable and worthwhile experience.

## Technology Education Workshops at the Baltimore Museum of Industry



Mike Shealey Puts the Finishing Touches on a MagLev Demonstration Unit



George Patrnicola Leading Data Acquisition Workshop



Bob Davis Working in BMI Laboratory

## Howard County Public School Technology Challenge 2001 March 31, 2001 at Wilde Lake High School

The Howard County Public School's Technology Challenge will be held on Saturday, March 31 at Wilde Lake High School. The activities will run from 9:00 am to 2:00 pm. Awards will be presented to the top three teams in each event. The following is a list of events the challenges by grade level:

### Elementary School

- 2nd Grade - Airplane Challenge
- 3rd Grade - Safe Racer Challenge
- 4th Grade - Crane Crazy
- 5th Grade - Adventure Kingdom

### Middle School

- CO2 Car Drag Racing
- Straw Bridge Challenge
- MAGLEV Time Trials,
- "Evil Technevil"

### High School

- House Design Challenge
- Cargo Plane Challenge
- MAGLEV Challenge
- Tractor Tug-O-War

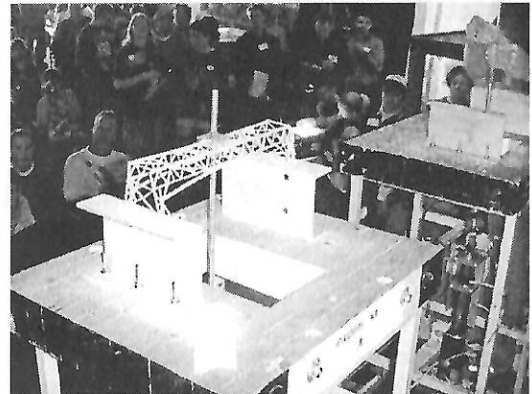
All are welcome to this exciting event.  
We have judges from the following:

Maxim Crane Works, HCPSS, Aerospace Corporation, HCPSS- Board of Education, Six Flags America, NASA Goddard, Aerospace Corporation, Lexus Racing Team, John Hopkins School of Engineering, Brudis & Associates, Howard County/Engineering, Trident Engineering, Benchmark Engineering, Signature Flight Support, Stewart & McCready Architects, Carroll County Public School System, and Montgomery County Public Schools

## Upcoming Events

|                  |   |
|------------------|---|
| April 7, 2001    | TELP Weekend Institutes<br>(Regional)                 |
| June 25-28       | TELP Summer Institute<br>(UMES)                       |
| October 18, 2001 | TEAM Awards Banquet<br>(Engineers Club, Baltimore)    |
| October 19, 2001 | TEAM TECH EXPO 2001<br>(Baltimore Museum of Industry) |

## Wood Bridge Competition Maryland Engineering Challenge



**A goal of Technology Education is to produce students with a conceptual understanding of technology and its place in society, who can grasp, evaluate and use new bits of technology that they might never have seen before. Standards for Technological Literacy, ITEA, 2000**

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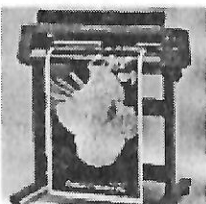
- Design
- Electricity and Electronics
- Mechanical Systems
- Automation and Material Handling
- Quality Control
- Manufacturing Processes

TECH WORLD  
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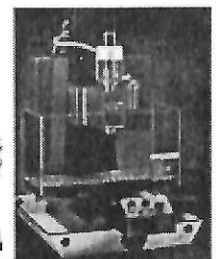
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