NETWORK

Technology Education Association of Maryland

Volume 13, Number 3, June 2001 TECHNOLOGY EDUCATION ASSOCIATION OF MARYLAND

Inside This Issue

Engineering and Technology 2

Mike Shealey Recognition 4

Leon Copeland Award 5

E. Roosevelt H.S. Excels in FIRST Robotics Competition 6

The Inventive Thinking Curriculum Project 8

Book Review White-Collar Sweatshop: The Deterioration of Work and Its Rewards in Corporate America 9

Maryland Engineering Challenges Results 10

UMES Graduate Program News 10

Science, Optics and You 11

Maryland Technology Educators Honored by the International Technology Education Association

The 63rd Annual International Technology Education Association Conference and Exposition was held in Atlanta, Georgia in March. The Teacher Excellence Award, one of the highest honors given to classroom teachers, was presented to three Marylanders during the conference General Session. The award is given in recognition of outstanding contributions made to the profession and to students. ITEA is a partner with Goodheart Willcox Company, Inc. in this recognition.

ITEA President Barry Burke Presents Roy Rosnik with Teacher Excellence Award Pin

Receiving the prestigious Teacher Excellence Award were Kevin Hardy of Walter Johnson High School in Montgomery County, Roy Rosnik of Hammond Middle School in Howard County, and Janet Manning of New Market Elementary School in Montgomery County. These outstanding individuals continue a long history of Maryland participation in the conference awards program. Maryland has sent all of its state award winners to the national conference each of the past four years. No other state has maintained that level of participation.

The theme of this year's conference was "Teaching Technology in a Virtual World." The featured speaker at the General Session was Lee Holcomb, NASA Chief Information Officer. His presentation focused on the fact that major corporations are designing all types of products using virtual thought processes that create real-world technology. Airplanes, cars, and countless other everyday products are designed and tested using virtual processes before they are manufactured.

Presiding over the session was ITEA President, Barry Burke of Montgomery County, Maryland. It has been an honor for all Marylanders to have one of our state leaders assume the presidency of the ITEA. Barry has accomplished a lot during his term. ITEA's long-term goal of providing support and resources to achieve technological literacy for all students is coming to fruition through Barry's focus on information technology. He notes that "soon all schools will be connected, and the walls in which we teach will have a global perspective that represents how we communicate with others in a world that instantly connects students and teachers from around the globe."

Maryland had a large delegation attending the conference including Clint Austin, Kevin

Continued on page 3

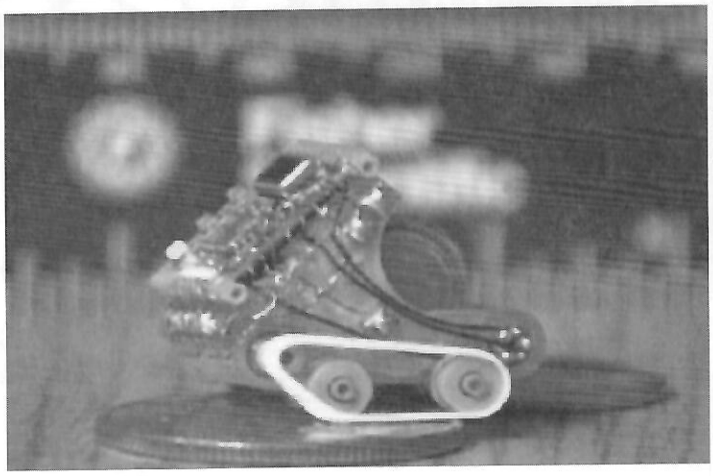
Engineering and Technology

Cool Robot of the Week
http://ranier.hq.nasa.gov/telerobotics_page/coolrobots.html

From a robotic sheepdog that can herd a flock of geese to a minibot that can literally turn on a dime, this site celebrates robotics-related projects and events and the Web sites devoted to them. Each week NASA's Space Telerobotics Program selects a noteworthy site for this distinction. The site is itself simple and straightforward, functioning mainly as a guide. Archived selections going back to 1996 are available, so enthusiasts should find a plethora of sites to inform and inspire them.

Invention Dimension
http://web.mit.edu/invent/

If you're a would-be inventor with a hot idea, you would do well to stop by this site, hosted by M.I.T. A handbook for inventors answers all those commonly asked questions—from "Is my idea patentable?" to "How do I prove the idea is mine?" — and even provides information on the commercialization process. If you don't have an invention in mind, you can always look to the featured inventor of the week for inspiration. For further reading the site includes a page of links to sites covering research and development, both at M.I.T. and beyond.



Invention Master Resource List
http://sulcus.berkeley.edu/FLM/SH/MDL/Invention/Invention.Masterlist.html

Whether it's a patent-searching service or venture capital information you seek, this site houses links to all kinds of invention-related resources. Nine categories of links point inventors to legal information, entrepreneurial resources, and invention achievement awards, among other things. And if you want to chat with other inventors, links to discussion groups are provided, too.

(From page 1)

Webster, Mike Shealey, Chris Putnam, Kim Weaver, Marquita Friday, Quinn Patterson, Wendel Matthews, Adam Sheinhorn, Kevin Hardy, Roy Rosnik, Janet Manning, Ken Smith, Leon Copeland, Gerald Day, and Bob Gray. A former Maryland technology teacher, Dan Caron, received ITEA's Distinguished Technology Educator Award. Dan taught at DuVal High School in Prince George's County before returning to his home state of New Hampshire. Another Marylander making a significant contribution at the national level is Dr. Brigitte Valesey, Director of the Center for the Teaching of Technology and Science. Brigitte, a past-president of TEAM, is leading the effort to implement standards-based curriculum throughout the nation.

The conference featured over 80 different presentations and an outstanding Commercial/Educational Exhibit. Seventy-eight vendors displayed the latest products and services in the Exhibit Hall. Mike Shealey and Chris Putnam of Baltimore County joined Bob Gray of the Maryland Center for Career and Technology Education Studies in a presentation entitled "Digital Form, Standards-Focused Curriculum Delivery Model." The presentation highlighted Baltimore County's effort to use 21st century information technology to build, format, integrate, and share curriculum and resources.

Janet Manning Receives Teacher Excellence Award from ITEA Executive Director Kendall Starkweather and ITEA President Barry Burke

Kevin Hardy of Walter Johnson High School in Montgomery County Receives Teacher Excellence Award

Barry Burke challenged attendees to become leaders in their home states. He said that leadership is needed in the recruitment of new teachers, helping academic teachers see that applied learning helps students achieve, and mentoring new teachers in the profession. He went on to say that "as a result of attending this conference, you have networked with professionals from around the world, and that when you get home, you will mentor and train others with what you have learned at this conference. This conference is about celebrating success."

Next year's ITEA conference will be held in Columbus, Ohio. Future sites include Nashville, TN in 2003, Albuquerque, NM in 2004, Kansas City, MO. in 2005 and Baltimore, MD in 2006. Start planning now to attend an ITEA Conference. Ask your supervisor and principal about financial support to attend. Better yet, apply to be a presenter at the conference. Attending one of these exciting events changes the way you view your profession. Everyone who has ever attended says that they were inspired and motivated to become better teachers.

Mike Shealey Honored for Contributions to Career and Technology Education

Harry M. (Mike) Shealey received the **Career and Technology Education Distinguished Service Award** for Secondary Education at the 2001 Awards of Excellence Program in Annapolis on May 30th. Mike has been one of Maryland's outstanding supervisors for more than twenty-five years and has made major contributions to the improvement, promotion, and implementation of Technology Education programming. He has been recognized at the state and national level on numerous occasions for his leadership in the formulation and implementation of high quality career and technology education programs in Baltimore County. The truly outstanding nature of his contributions lies in his vision for career and technology programming and his ability to forge relationships with critical partners to make significant changes in the way instruction is delivered.

In 1990, Mike was the moving force behind the founding of the Maryland Engineering Challenges, an engineering problem-solving competition sponsored by the Baltimore Museum of Industry, the Technology Education Association of Maryland, and the Engineering Society of Baltimore. He was also instrumental in the formation, in 1995, of the Maryland Center for Career and Technology Education Studies (MCCTES) at the Baltimore Museum of Industry. In 1996, Mike coordinated the formation of the Mid-Atlantic Technology Education Consortium (MATEC) to tackle issues related to Technology Education that were not being adequately addressed by individual states. Through the years, Mike Shealey has provided leadership to the state's professional organization for technology teachers, the Technology Education Association of Maryland (TEAM).

Perhaps the most important enterprise that Mr. Shealey has fostered is a close relationship with the engineering community in Maryland. Through his efforts, a number of schools have been linked with engineering firms to promote interest in technical careers as well as to provide assistance to students working on engineering projects. The Engineering Society of Baltimore (ESB), an umbrella organization for a number of professional organizations, has as its mission the development of the next generation of engineers. It has been a common sight over the last few year's to see large groups of students, parents and teachers gathered at the Engineering Society's headquarters in Baltimore for exciting events.

Mike Shealey is a visionary and an innovator. He has fostered relationships between powerful groups that benefit all students in Maryland. We all owe a great deal of thanks to Mike for his untiring efforts and commitment to Technology Education.

Maryland Technology Educators Present at China-U.S. Conference

Leon Copeland and Bob Gray delivered presentations related to the Technology Education Leadership Project at the Fifth China - U.S. Conference on Education in Beijing, China. The June 7 - 16 Conference linked schools and institutions in the United States with schools and institutions in China to develop personal and professional partnerships between students and faculty. Paired U.S. and Chinese educators made presentations on five key topics. Conference participants observed and interacted with Chinese educators and students in their school environments.

Upcoming Events

June 25-28, 2001	TELP Summer Institute (University of Maryland Eastern Shore)
October 18, 2001	TEAM Awards Banquet (Engineers Club, Baltimore)
October 19, 2001	TEAM TECH EXPO 2001 (Baltimore Museum of Industry)
February 16, 2002	Maryland Engineering Challenges Elementary School Events (Baltimore Museum of Industry)
February 18, 2002 Presidents' Day	TEAM Tractor Pull Competition (Engineers Club, Baltimore)

Leon Copeland Receives Distinguished Service Award From the NASDVTE

"A Guiding Light in the Preparation of Teachers"

Dr. Leon L. Copeland, Sr. was the recipient of the National Association of State Directors of Vocational Education's Distinguished Service Award at a ceremony at the U.S. Capitol on May 1, 2001. Dr. Copland was cited as a constant supporter of Career and Technology Education in Maryland, leader of the only approved vocational teacher education program in the State, and for providing leadership, professional development and quality instruction to local schools and teachers.

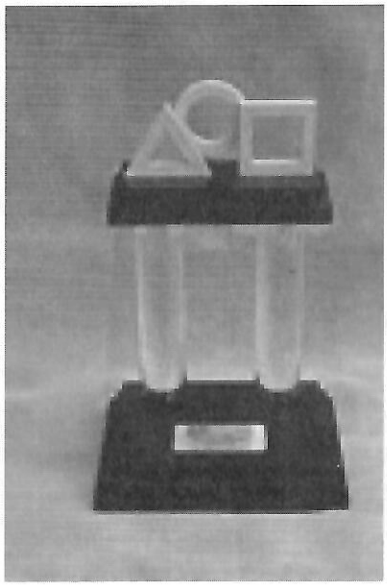
Dr. Nancy Grasmick, Maryland's State Superintendent of Schools, also received the Distinguished Service Award for leadership in providing Career and Technology Education programs that add value, rigor, and relevance to the high school program of study.

Leon Copland Receiving Distinguished Service Award from NASDVTE President June Atkinson

Dr. Grasmick Receiving Distinguished Service Award from Dr. Lynne Gilli

Eleanor Roosevelt High Scores in National Robotics Competition

Eleanor Roosevelt High School of Prince George's County won *4th Place* in this year's FIRST (For Inspiration and Recognition of Science and Technology) Robotics Competition , and Honorable Mention for Richard Watson and James Seppi's website design in the Autodesk Award for Realization.



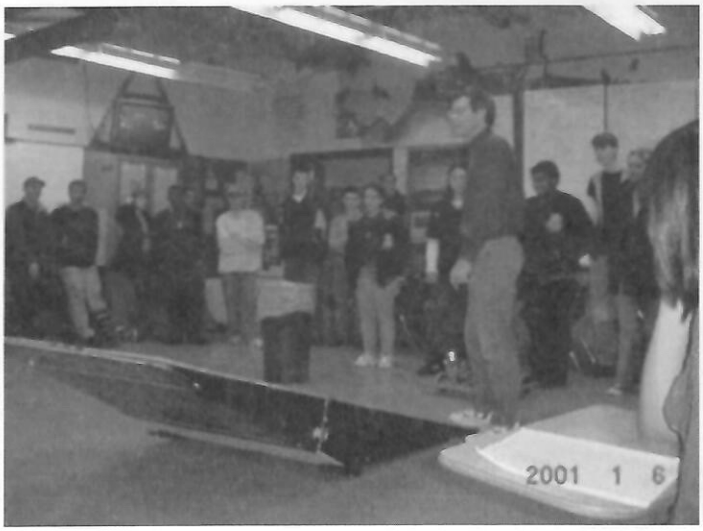
The FIRST Robotics Competition is a national engineering contest which immerses high school students in the exciting world of engineering. Teaming up with engineers from businesses and universities, students get a hands-on, inside look at the engineering profession. In six intense weeks, students and engineers work together to brainstorm, design, construct, and test their "champion robot". With only six weeks, all jobs are critical. The teams then compete in a spirited, no-holds-barred tournament complete with referees, cheerleaders and time clocks.

The partnerships developed between schools, businesses, and universities provide an exchange of resources and talent, highlighting mutual needs, building cooperation, and exposing students to new career choices. The result is a fun, exciting and stimulating environment in which all participants discover the important connection between classroom lessons and real world applications.

Each year, the competition is different, so returning teams always have a new challenge to look forward to. However, the details are kept secret until the unveiling at the Kick-Off Workshop. This provides a high level of excitement as everyone sees the new challenge for the first time and ideas immediately begin forming in people's minds.

Eleanor Roosevelt High School has been competing in the FIRST competition for four years. The FIRST team is composed mainly of juniors and seniors. Mr. Pruett, who teaches one of the Engineering Foundation classes as well as Production Systems, is the team's mentor and supervisor. Ever since its creation in the 1997-98 school year, the NASA Goddard Space Center has been the team's primary sponsor.

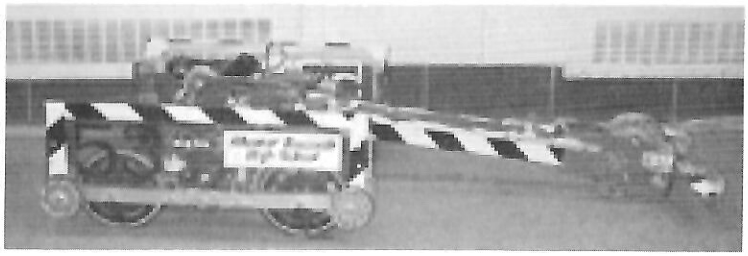
Aside from providing the essential funds necessary to



register and compete, Goddard has graciously extended the use of both their facilities and the expertise of their staff. This year, the team was fortunate to have engineering support from Mantech, a corporation based near the school. Their engineers were an invaluable source of information and experience, and the team was most grateful for their assistance.

The Roosevelt team finished in the top third of 200 plus teams at the 1998 Nationals. In 1999 they finished in the top half at Regional and Nationals, with a significant improvement in reliability and performance of the robot. The team is proud

of the fact that the 2001 robot was entirely designed and constructed by Eleanor Roosevelt High School students. Congratulations to Doug Pruett and his outstanding team.



The Inventive Thinking Curriculum Project

An Outreach Program of the United States Patent and Trademark Office

Since the early 1980s, the U.S. Patent and Trademark Office has been working in concert with other Federal agencies, corporations, and associations to bring into national focus a number of grassroots school programs promoting thinking skills instruction. As a result of that effort, Project XL was initiated in 1985 as a national partnership designed to encourage proliferation of such programs and to develop new programs and materials which will promote critical and creative thinking and problem-solving skills for all children in our nation's schools.

The INVENTIVE THINKING CURRICULUM PROJECT is one of the many projects included in this national outreach program. It should be used in conjunction with a thinking skills program as a means of applying critical and creative thinking and problem-solving skills through the activity of creating an innovation or invention.

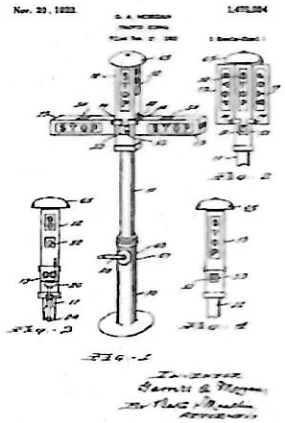
When a student is asked to "invent" a solution to a problem, the student must draw upon previous knowledge, skills, and experience. The student also recognizes areas where new learnings must be acquired in order to understand or address the problem. This information must then be applied, analyzed, synthesized, and evaluated. Through critical and creative thinking and problem-solving, ideas become reality as children create inventive solutions, illustrate their ideas, and make models of their inventions. The INVENTIVE THINKING CURRICULUM PROJECT provides children with opportunities to develop and practice higher-order thinking skills.

Table of Contents.

#1 Introducing Inventive Thinking
#2 Practicing the Creative Part of Inventive Thinking
#3 Practicing Inventive Thinking with the Class
#4 Developing an Invention Idea
#5 Brainstorming for Creative Solutions
#6 Practicing the Critical Parts of Inventive Thinking
#7 Completing the Invention
#8 Naming the Invention
#9 Optional Marketing Activities
#10 Parent Involvement
#11 Young Inventors' Day
#12 Enrichment: Stories about Great Thinkers and Inventors

The address of the U.S. Patent and Trademark Office website is:

Http://www.uspto.gov/web/offices/ac/ahrpa/opa/projl/invthink/invthink.htm



BOOK REVIEW

White-Collar Sweatshop
The Deterioration of Work and
Its Rewards in Corporate America
By
Jill Andresky Fraser
New York: Norton, 2001, 278 pp, $26.95

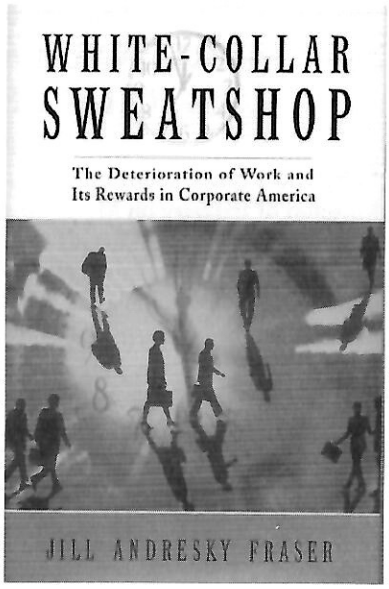
The author has assembled the results of research, both hers and others, to show that many working men and women were living in the worst of times during the 1990s. This is in contrast with the rhetoric in the media focused on the corporate bottom line. Fraser contends that life at the workplace, usually the office, has become a corporate nightmare.

It is manifested by workloads that extend to seven-day-a week schedules and decreases in salaries, pensions, and other benefits in many instances. She perceives a trend toward enslaving workers to technology and fostering ongoing fears regarding their job security.

The Introduction, 'The Best of All Possible Worlds of Work?' is a collection of comments she culled from some of the interviews she conducted for her research. She is quick to point out that the pressures applied to workers result in an unhealthy set of conditions for many of them. After reading the 14-page introduction, the reader comes away with a negative feeling regarding the role of technology in the workplace. What follows is a nine-chapter treatment of the factors that contribute to her negative viewpoint of the work environment during the 90s.

Chapter One, 'The Pace was Insane: Less Time, More Stress', is filled with references to many of the workers that Fraser interviewed over a three year period. She cites research that reveals that over 25 million Americans work more than forty-nine hours each week. Many of them are white-collar professionals. This is in contrast to the prediction made over the past several decades that the average workweek for Americans would decrease over time. In answer to the question of what keeps such workers in their office so many hours, Fraser believes it is the outcome of the many industries that train incoming recruits to accept excessive demands on their time. The description of 'job spill', where people spend commuting and home time attending to work demands is associated with this movement.

Chapter Two, 'Working Three Times Harder and Earning Less: The Shrinking Paycheck and Other Squeezes', fully addresses the issue. Fraser uses frequent citations drawn from among her interviewees to demonstrate how the 'Benefit Blanket' has become less encompassing as the 90s progressed toward 2000. Aspects of technology's impact upon the job environment are treated in the fourth chapter. Additional major negative effects that occurred during the 90s are reviewed by Fraser in chapters five through nine, including: decreasing loyalty to employers; changing roles of mothers; worsening work conditions as businesses prosper; declining payoffs for effort; and the effects of layoffs on career-change opportunities.



The final chapter is entitled: 'Conclusion: A Path Out of the White-Collar Sweatshop.' Much of the material in this part of the book merely repeats the shortcomings of the workplace recited in previous chapters. Fraser does see some hope for improvements, although her ideas don't appear to be very realistic. There are some major companies that foster growth through creating new products, services, and markets; rather than simply achieving profitability by cutting payroll and benefit costs, and increasing demands on workers who are already overloaded. She cites another approach that includes companies shortening their workweeks.

There are a few companies that allow small groups of workers to develop their own schedules, thereby giving them more control over work-flow and personal time. Fraser suggests that large corporations should take actions to restore the confidence and respect they have lost through previous actions by offering a series of suggestions for moving in that direction. She conjectures whether, in the future, white collar workers will move toward more unionization response to poor treatment.

In summary, this is a negative treatment of the work world in America during the 90s, albeit all too accurate for some workers. Unfortunately, the slowing of the economy and the declining value of investments during this past year may further reduce the prospects of any improvements in the workplace. The author was silent on this, of course, since it is an occurrence that has largely taken place since the time the book was published.

Lynne M. Gilli
Angelo C. Gilli

TEAM's newsletter is edited by Aaron Gray. Comments and suggestions are welcomed at agray@mail.howard.k12.md.us

MARYLAND ENGINEERING CHALLENGES

Maryland's finest young engineers gathered at the Baltimore Museum of Industry on March 31 to compete in the middle school and high school events of the Maryland Engineering Challenges. Teams of students from Technology Education classes from across the State brought their problem solutions, expertise and high spirits for a day of fun.

Results from the March session of the Maryland Engineering Challenges included:

Middle School Level

MagLev Challenge

1st Place	Blue Thunder	Loch Raven M. S.
2nd Place	Wake	Loch Raven M. S.
3rd Place	Shafarone	B. Franklin M. S.

Hovercraft Challenge

1st Place	AirTech Mission	Halethorp Co-op Home Sch
2nd Place	Hover Squirrels	Halethorp Co-op Home Sch
3rd Place	The Revolution	Loch Raven M. S.

Manufacturing Challenge

1st Place	Holabird M. S.	Holabird M. S.
2nd Place	Dumbarton M.S.	Dumbarton M. S.
3rd Place	B. Franklin M.S.	B. Franklin M. S.

Recycle Challenge

1st Place	Limbo	Roland Park Country School
2nd Place	Eccentric Engineers	Roland Park Country School
3rd Place	Proj for Engineering	Roland Park Country School

Bridge Challenge

1st Place	Red Barons	Franklin M. S.
2nd Place	Out & About	Roland Park Country School
3rd Place	Fiery Flames	Roland Park Country School

High School Level

Cargo Plane Challenge

1st Place	Dragon Flight	C. M. Wright H. S.
2nd Place	Wings	Wheaton High School
3rd Place	I. R. Skyline	Wheaton High School

Cargo Ship Challenge

1st Place	Cargo Chaos	Catonsville High School
2nd Place	Team Seamen	Oxon Hill High School
3rd Place	LaGracia	Greater Grace Christian Ac.

Robot Challenge (2-Leg)

1st Place	Athletes	Beth Tfiloh
2nd Place	A to Z	CHEN
3rd Place	Fuzz Balls	Home School

UMES Graduate Program News

By Gerald Day, Coordinator of Graduate Studies

Graduate Students Finish UMBC Courses

One of the features of the UMES Master of Education in Career and Technology Education is the ability of taking professional courses at other colleges and universities in Maryland. In May, five students successfully completed courses at the University of Maryland Baltimore County. **Dan Wood** completed a research course, and **Christopher Gray, Loretta Lawson, Beverly Parker,** and **Phillip Steinberg** completed a course in learning and cognitive development. Congratulations to these students for completing these rigorous courses.

Required Graduate Course Offered in Summer

The **required** cognitive development course, **EDUC 610 Learning and Instructional Design**, will be offered during the first summer session, June 4 - July 6, at the Maryland Center for Career and Technology Education Studies at the Baltimore Museum of Industry. Several teachers have registered already but there is still room in the course. This course will be offered only once a year in Baltimore. Please contact Dr. Day if you are interested in taking this course.

Teachers on the Eastern Shore can take this course next year at UMES, and Western Maryland and Southern Maryland teachers can take an equivalent course at a local college.

2000-2001 Academic Year Ends Successfully

The second complete year of the new Master of Education in Career and Technology Education Program has come to a close this month. More graduate courses were offered and an increase in admission to the graduate program marked the 2000-2001 academic year. Over 30 teachers enrolled in the program have taken graduate courses. Several teachers are on track to complete their masters next spring, 2002.

Science, Optics & You

Technology teachers will find some excellent activities related to optical technology at:

http://micro.magnet.fsu/optics/activities/index.html

They were written by educators with input from scientists, researchers, students, and teachers. Students, teachers, and parents are encouraged to work together to begin an exploration of concepts that help us learn about how we see our world.

Activity 1: Perspectives: Powers of 10.

Activity 2: K-W-L: What I Know, What I Want to Know, What I Learned.

Activity 3: Using Media to Explore Light and Optics.

Activity 4: Exploring with Lenses.

Activity 5: Looking Through Lenses.

Activity 6: Mirror, Mirror on the Wall: Angles of Reflection.

Activity 7: Mirrors and Multiple Images.

Activity 8: Light, Prisms and the Rainbow Connection.

Activity 9: Investigating the World of Colors.

Activity 10: Using Learning Centers to Investigate Special Properties of Light.

Activity 11: Investigating Shadows.

Activity 12: Shadowbox Theatre.

Activity 13: Exploring Microscopes.

Activity 14: Making Crystals.

Activity 15: What Variables Affect Crystal Growth.

Activity 16: Using Microscopes to Investigate Birefringence in Crystals.

Inquiry 1: Eyeglasses.

Inquiry 2: Animal Vision.

Inquiry 3: Telescopes.

Inquiry 4: Eclipses.

Inquiry 5: People in Optics.

Inquiry 6: Cameras and Photography.

Inquiry 7: Lighthouses.

Inquiry 8: Binoculars, Periscopes, and Kaleidoscopes.

Inquiry 9: 3D Images and Holograms.

Inquiry 10: Project Ideas for Light and Optics.

TEAM Welcomes Noah Sheinhorn

Congratulations to Adam and Aime Sheinhorn on the birth of Noah

TECHNOLOGY EDUCATION ASSOCIATION OF MARYLAND
BALTIMORE MUSEUM OF INDUSTRY
1415 KEY HIGHWAY
BALTIMORE, MARYLAND 21230

NONPROFIT ORGANIZATION
U.S. POSTAGE PAID
UPPER MARLBORO, MD
PERMIT NO. 111