



TRANSPORTATION

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Transportation

FOCUS

Summer 2005

News and Information from the Rahall Transportation Institute



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Partner Schools:



K-12 Outreach Activities Expand along Nick J. Rahall, II High Tech Corridors Area



Activities Include:

- LEGO Robotics
- Environmental Studies
- ATV Safety

by Errin Jewell, Frank Adkins and Ashlee Gibson

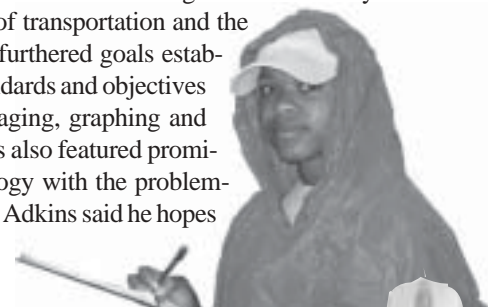
Left: Students from Greenbrier West High School participate in a six-week summer program in which they conduct an environmental assessment of the Little Clear Creek Watershed guided by research associate Frank Adkins. Below: A Greenbrier County high school student records preliminary findings from an environmental assessment.

RTI is enriching the economic, environmental and educational possibilities along the Nick J. Rahall, II High Technology Corridors, an 11-county region located along I-64 from Beckley to Lewisburg and I-77 from Beckley to Bluefield in southern West Virginia, through its Adopt-a-School program.

Frank Adkins, senior research associate, has established several programs that enhance the content standards and objectives established by the West Virginia Department of Education and instill youth interest in the economic and environmentally safe future of the region.

During the 2004-2005 academic year, fifth graders at Crichton Elementary progressed through basic LEGO construction exercises. The students were introduced to LEGO robotics through computer exercises, icon identification usage, parts nomenclature and information technology such as computer control and communication processing to the robotic unit. "We're trying to popularize robotics from a transportation theme," Adkins said.

After the class was introduced to LEGO Robotics, members participated in multi-day exercises that involved a cities and transportation theme. Students enacted hands-on learning exercises as they discovered the intricacies of traffic systems, the history and evolution of transportation and the information technology used in urban centers. The system furthered goals established by the West Virginia Board of Education's content standards and objectives by helping students hone mathematical skills such as averaging, graphing and calculating. Lessons on history, geography and social studies also featured prominently in the exercises. By pairing LEGO robotics technology with the problem-solving opportunities presented by the field of transportation, Adkins said he hopes the program was not only fun for the students, but the



CONTINUED: PAGE 3 OUTREACH

Summer 2005

Visit us on the web at www.marshall.edu/rti





Plymale's Perspective

The Director's Report

Growth of technology transfer activities allows for more learning opportunities

In every neighborhood, all across our country, there are good people insisting on a good start for the young and doing something about it. -Fred Rogers

For many years, Fred Rogers hosted his PBS television show, *Mister Rogers' Neighborhood*, in order to educate and encourage children to reach their maximum potential as citizens of the world. Individuals such as Mr. Rogers are vital in the development of our nation's youth and serve as an excellent example as to what others can do to help.

Even though students look forward to their summer breaks from traditional school, we realize learning never stops. Therefore, upon the advice of Mr. Rogers, we are "doing something about it by hosting or supporting many K-12 Outreach workshops, camps and activities as part of our Technology Transfer program.

Some of these activities take place at RTI headquarters, and others are conducted at libraries, college campuses, community centers, schools or other locations throughout West Virginia. In June alone, more than 200 student contacts have already attended LEGO Robotics Workshops, Operation Lifesaver Presentations, the Exploring Engineering Academy of Excellence and a Summer Engineering Design Academy. Often, attendees have so much fun they don't even realize they are learning math, science, computer technology or safety concepts.

Pre-professional teachers, who are learning at the graduate or undergraduate level, work side by side with professional teachers from public and private schools in our outreach programs. This cooperation not only pre-

pares the pre-professional teachers to develop and execute lesson plans that are in accordance with West Virginia's IGOs (Instructional Goals and Objectives), but also helps them learn to manage a classroom full of students. The activities also help the working teachers maintain their skills during the summer break and to brush up on new technologies and innovations that they may use in the classroom during the regular academic year.

Many of these activities, such as the Design a Future Vehicle (DAFV) Summer Camp and DAFV Teacher's Corner Web site, began as pilot projects at RTI. Professional educators worked with doctoral, graduate and undergraduate students from RTI to create from scratch multi-subject lesson plans for a variety of grade levels. After testing these plans during summer workshops, the plans have been made available on RTI's website to be used in real classrooms.

During the remainder of the summer, RTI is pleased to be involved in several other technology transfer activities, including PASS training for adults, an Operation Lifesaver Rail Camps for students and a Summer Institute Series for professional teacher training with Marshall University's Early Education Center. We look forward to reporting on these exciting new activities in our fall newsletter.

Sincerely,

Robert H. Plymale
Robert H. Plymale



CONTINUED: FROM PAGE 1 OUTREACH

start of a lifelong interest in science, math and technology.

After the program was solidly established at Crichton, Adkins and local teacher volunteers conducted one-day activities at Rupert Elementary, Rainelle Elementary and Greenbrier West High School (GWHS). "We would love to expand to other areas as time and resources allow," he said. By fall, he hopes to have regularly scheduled activities in those schools as well as visits to fourth and fifth grade classes at Lewisburg Elementary, Smoot Elementary and Williamsburg Elementary that will develop WV students' educational opportunities and instill interest in West Virginia's transportation infrastructure.

A "Robotics in the Classroom," which consists of one-day workshops conducted by Adkins and local teacher volunteers, is scheduled to take during the next school year. He traveled to RTI headquarters to receive basic LEGO robotics training from K-12 instructor Linda Hamilton, whom Adkins says "possesses a wealth of information." This program has sparked the interest of not only students and teachers in southern West Virginia's school systems, but also community organizations such as the local YMCA and Carnegie Hall West Virginia.

In Charmco, W.Va., RTI has also collaborated with the Western Greenbrier Co-Generation Power Plant's project manager, Wayne Brown, to develop a summer program with GWHS that helps students master advanced mathematics and science skills while introducing them to environmental, transportation and economic issues in southern West Virginia. Currently, Adkins and Katie Donovan, a senior environmental science major at Davis and Elkins College, are helping the students complete an environmental assessment of the Little Clear Creek Watershed in western Greenbrier County. The plant provides student funding for the 6-week summer environmental program, and is assisted by RTI research associates. RTI helped locate the site for the \$215 million eco plant through a Cooperative Research and Development Agreement (CRADA) with the U.S. Department of Energy.

During summer 2004, Brown guided 15 high school students in completing an environmental studies project on the Big Clear Creek Watershed. "Last year we did an initial environmental assessment of the treatment of runoff from different parts of a former mining site, but this year we are making it more in depth." The current six-week program aims to increase student awareness of nature, their communities and the effects of the transporting gob [coal waster] on the environment.

"By integrating scholarship in the environmental sciences with local, real-world issues, this will hopefully inspire students to take higher math and science courses in high school and college, and also motivate students to look for future jobs associated with the environment that are available in southern West Virginia.

"We want to teach them to be good stewards of the environment. Initially they are measuring Free Acidity, Total Acidity, Alkalinity, Iron and pH. Additionally, we are looking at turbidity measurements and silt run-off. We're also working with mining and forest industries, the Department of Environmental Protection and the Department of Natural Resources to help students understand how educational outreach programs can collaborate with government agencies and private industries to better serve a community."

Adkins and Brown, with the help of RTI, plan to continue the program throughout the year and study both Little Clear Creek and Big Clear Creek Watersheds to explore the safest, most economical and environmentally friendly means for removing the mine waste. Adkins is currently working with the administration of GWHS and local community colleges to create year-round environmental, transportation and educational-related opportunities that would assign the students college credit for their participation in this and similar projects.

"It's a work in progress," Adkins said. He thinks the project is an important one that will benefit "students and the state in the short and long run" by encouraging them to further their education in the environmental sciences and introduce them to important career opportunities in the region.

Adkins was recently certified by the Safety Vehicle Institute of America to instruct training courses in all terrain vehicle safety. "Because ATV recreation is a quickly growing industry in Southern West Virginia and ours is among the highest rates of accident and death from ATVs, it is important we teach our children how to safely ride ATVs," he said. This recent certification qualifies him to deliver a safety course that would fulfill recent legislation that requires ATV training for drivers 16 and under.

"As ATV sports gain in popularity, southern West Virginia appears as an increasingly viable tourist destination for recreational riders and corporate investors. RTI is exploring ways to not only ensure the safety of West Virginia's young ATV riders, but also to capitalize on the growing educational and collaborative economic opportunities this rising industry presents," he said.

To participate in RTI's K-12 Outreach Program, contact Barbara Roberts, Program Coordinator, at (304) 696-7103. For more information about outreach activities in the High Tech Corridors Program Area, contact Frank Adkins at frank@citynet.net.





Highway Bill Important to Development of Transportation Technologies

Guest Column by Rep. Nick J. Rahall, II



All of this year and during much of 2004, Congress has worked to pass a comprehensive and long-term bill to provide money for important transportation projects across the country. This funding is important for the upkeep of our existing roads and the construction of new ones.

Our infrastructure is nothing less than the lifeline of our Nation's economic wealth. It is the first line of national defense and the frontline of our homeland security. Significant funding is needed to maintain and build our infrastructure – and a Highway bill will provide that.

But a Highway bill will also provide money for the research and development of transportation technologies and University Transportation Centers, like RTI.

America represents the leading edge of transportation technology. Our colleges and universities produce the best minds and the most technologically advanced theories on transportation mobility and efficiency. This is due in large part to the investment provided by the federal government to our institutes of higher learning for the purposes of transportation research.

The University Transportation Centers (UTC) Program, funded through the U.S. Department of Transportation, was established by an act of Congress “to advance U.S. technology and expertise in the many disciplines comprising transportation through the mechanisms of education, research and technology transfer at university-based centers of excellence.”

In my work as a senior member of the House Transportation and Infrastructure Committee, I continue to be a vigorous supporter of the UTC Program. And I am proud to say the U.S. Congress and the U.S. DOT have recognized the tremendous work being done at RTI by naming it only one of a handful of UTCs to receive guaranteed funding in the Highway bill.

In the most recent Highway bill which passed Congress in 1998, \$195 million was provided to the UTC Program. This money went to increase the number of students, faculty and staff who are involved in transportation disciplines, provide for basic and advanced research and allow for the application of this research to everyday transportation needs. The results of all this hard work and investment are saving lives, making our infrastructure safer and more efficient and ensuring America will remain on the cutting edge of transportation technology in the years to come.

In the House version of the Highway bill which was passed in March, I was able to include \$17.5 million to fund the important and cutting-edge work being performed at RTI. This money will go toward furthering RTI's mission: “Building Jobs Through Transportation” in the Appalachian region. The faculty, staff and students at RTI will benefit from the significant investment the federal government is making, and their work will benefit America.

America's University Transportation Centers are playing an important role in today's world. With continued federal investment, the good work at RTI and across the country will continue making our infrastructure safer, more efficient and better prepared to handle the traffic of the 21st Century.



Begley Named to MURC Board of Directors

by Kevin Pack

A familiar face at RTI was appointed to the Marshall University Research Corporation's (MURC) Board of Directors this spring.

Richard Begley, engineering professor at Marshall University (MU) and associate director at RTI, joined 15 other individuals to comprise the 16-member board. The board was chosen by former MU Interim President Michael J. Farrell. He is one of four MU faculty members appointed; others are: Michael Castellani, Richard Niles and Chuck Somerville. Begley said he's excited for the opportunity and privilege to work with such a creative and intelligent group of individuals.

"The West Virginia Legislature should be commended for their vision to establish the Marshall University Research Corporation, which stirs as a catalyst and incentive for professors to perform research at Marshall University," Begley said. "When we combine the efforts of MURC with the federal funding secured by Senator Byrd and Congressman Rahall, significant regional economic development efforts are maturing at a very significant pace.

Some of Begley's accomplishments, include "producing the first royalty-producing patent for MURC, serving as assistant dean for Outreach and Special Programs of the Graduate School of Information Technology and Engineering and developing externally funded research partnerships with several institutions in America, Europe, Canada and Mexico, in addition to private sector corporations."

Begley said the group held its first meeting at the end of April and will be meeting again in the near future. MURC, a not-for-profit corporation, was established in 1987 and is chartered under the laws of the state of West Virginia.

RTI Research Activities Mentioned in *TR News*

by Kevin Pack

Rahall Transportation Institute (RTI) struck recognition on a national magazine scale this year.

The publication *TR News*, which is produced by the Transportation Research Board of the National Academies, mentioned RTI in its January 2005 edition.

The article, which was entitled "The State of Transportation: Findings from the Transportation Research Board's 2004 Field Visit Program," discussed economic



development and the fact that many times in urbanized areas, transportation improvements often lead to new businesses.

It then stated that transportation planners often work with community projects to strengthen economic development in the area.

RTI was used as an example of the liaison between transportation planners and the encouragement of economic development. The article stated RTI's "efforts range from the traditional - such as high technology corridors to promote business development in the southern portion of the state - to the innovative - such as an industrial park with a coal power plant that produces electricity and steam from coal mine wastes, as well as bricks from the fly ash."

TR NEWS also featured a description of RTI's Adopt-a-School program and a photograph of a student participating in a LEGO Robotics instructional activity with former graduate research assistant Juan Bueno.





Faculty & Student Spotlight: Juan Barrios and Kenneth Casto

Name: Juan Barrios

Birthplace: Durango, Mexico

Title: RTI Research Associate

Education: Undergraduate degree in Biochemical Engineering from Instituto Tecnológico de Durango; Two masters degrees: Physical Science and Technology Management from Marshall University

Name: Kenneth Casto

Birthplace: Charleston, WV

Education: Associate of Science degree in Information Technology and Bachelor's of Science degree in Integrated Science and Technology from Marshall University. He is currently enrolled in the Technology Masters Degree program with an emphasis in transportation.

Projects with RTI: Hatfield & McCoy trail topo maps, and e911 projects for Boone and Fayette Counties

Faculty and Student Spotlights will highlight a faculty or staff member and a student in each issue of Transportation Focus. If you would like to be considered for the next newsletter contact Errin Jewell at (304) 696-7165 or jewell4@marshall.edu.



Juan Barrios



Kenneth Casto

GIS Software Forum Invades Charleston

by Kevin Pack

Individuals interested in Geographic Information Systems (GIS) flocked to the Holiday Inn in Charleston June 21-22 for the Environmental Systems Research Institute(ESRI) Summer Meeting.

About 120 individuals, ranging from students to professionals, were in attendance. The meeting was arranged in a forum style so that many presenters from the regional GIS community were able to show their projects during scheduled times. The meetings are held two to three times per year.

Juan Barrios, research associate at RTI, said he thought the meeting was a success this year and that he had heard positive feedback from those in attendance.

“Personally, I think the ESRI meeting was an excellent idea because GIS is growing very fast and many people are beginning to use it,” Barrios said. “FBI members even attended the forum to discuss how they’re getting involved with the software.”

The next ESRI meeting has not yet been scheduled. For more information about GIS software, please visit www.esri.com.





Future engineering experts might have grazed the Marshall University (MU) campus last month during the week-long "Exploring Engineering: Academy of Excellence" (EEAE) camp.



States Military Academy.

Lola Lackey, a senior at Tug Valley High School, said building the bridges and creating the robotic cars were her favorite activities of the week. She said that she was glad for the



"The people here have been really friendly," Lackey said. "I was anxious before I came because I was the only student from Mingo County. However, everyone has been very helpful and I plan on staying in contact with some of them."

The fifth-annual event took place June 19-24 and was hosted by MU's College of Information Technology and Engineering (CITE) in cooperation with RTI, the Huntington Post of the Society of American Military Engineers and Learning for Life.

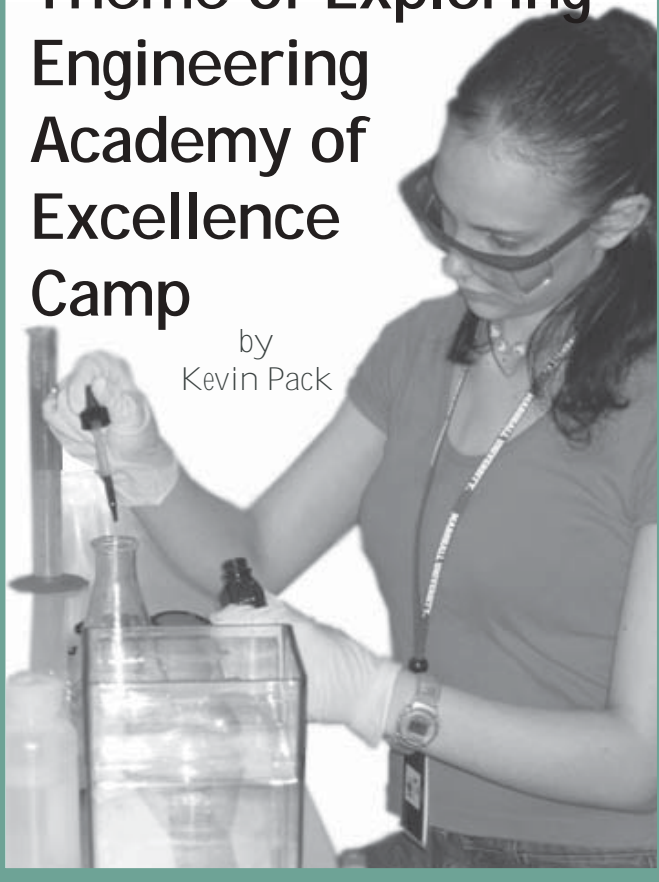
opportunity to attend the camp because she had been considering engineering or computer science as potential college majors; now she better understands her options and is considering civil engineering.

William Pierson, camp co-director and engineering professor at MU, said "Building Bridges" is the theme he would give to the camp. He said students build bridges for their futures, as well as with one another and Marshall's campus.

About 35 students from Kentucky, Ohio and West Virginia attended. Most of the students will enter their junior years in high school this fall. Campers resided in the Marshall Commons residence halls and received three meals per day, plus snacks.

Building Bridges Theme of Exploring Engineering Academy of Excellence Camp

by
Kevin Pack



Campers participated in a variety of engineering activities during the week, including: team competitions, designing robots and catapults, environmental testing and field trips.

A cardboard bridge activity was introduced at the camp this year, in which campers built a bridge made out of cut-up file folders that had to support certain weights. This event was based upon the West Point Bridge Competition that is sponsored by the United

"I saw a boy recently who attended a previous camp," Pierson said. "He told me he won't be majoring in engineering, but he'll be attending MU; perhaps the camp gave him a good impression of the campus."

Pierson said the main purpose of the camp was to stimulate an interest and generate a better awareness of the engineering profession. He said that at the conclusion of the camp(s), campers filled out surveys about aspects of the event they liked and/or did not like.

"We haven't received any negative feedback from previous camp surveys," Pierson said. "One year we had a complaint that we fed them too well-if that's a complaint."

For camp photos, please visit www.marshall.edu/eeae.



RTI Provides Passenger Service and Safety Training

by Ashlee Gibson

The Rahall Transportation Institute (RTI) and the West Virginia Division of Public Transit have partnered to deliver PASS training sessions throughout West Virginia in calendar year 2005. The training is free, although attendees are responsible for travel and lodging expenses.



The one-day PASS course fulfills the training requirement under the Section 5310 program. Attendees receive a Certificate of Attendance.

The two-day PASS Driver Certification Program ensures that community transportation drivers have current training in passenger assistance techniques, sensitivity skills appropriate for serving persons with disabilities, and includes crisis

management training.

The session also fulfills the training requirements for Section 5310 participants. The certification is valid for three years. Drivers can renew their certification at a one-day course. Trainers can renew their certification at a full two-day course.

According to John Ball, research associate and Certified PASS Instructor, "The PASS sessions have been well attended and give transit providers an excellent opportunity to upgrade skills and network with other service providers. Fifteen transit drivers attended the two-day course in Charleston on May 3-4. Ten attended the one-day course in Clarksburg on June 9 and in Weirton on June 18."

The next scheduled PASS training is a two-day course in Morgantown on September 21-22, 2005. To view course descriptions and register online, please go to www.marshall.edu/rti and use the RTI/PASS Transit link.

RTI Spreads Railroad Safety at Health Fair

by Ashlee Gibson

More than 600 students learned about railroad safety at a health fair at Spring Valley High School May 18.

Students visited the Operation Lifesaver (OL) booth throughout the school day. Approximately 15 organizations presented displays at the fair.

LeAndria Reed, RTI research assistant, lectured children on the importance of railroad grade crossing safety. Operation Lifesaver is a non-profit public awareness program aimed at ending collisions, fatalities and injuries at highway-rail grade crossings and properties.

Reed said the children were interested in seeing the photos of railroad collisions, because this was a strong tool in demonstrating the real dangers of accidents at railroad grade crossings. Reed also passed out OL materials and first aid kits.

If you or your organization is interested in an Operation Lifesaver presentation, please contact John Ball or LeAndria Reed at (304)696-2525.





Students Engage in an Educational Summer

by Ashlee Gibson

Many area students are using their summer vacations wisely—they are continuing their education by taking part in several activities associated with RTI’s LEGO robotics and DUPLO programs.

Linda Hamilton, K-12 outreach instructor, toured local libraries in June to give children an opportunity to construct a LEGO city and explore different modes of transportation to facilitate their creations.

Hamilton also conducted a series of LEGO 4-H camps, concentrating on the Aquabots theme as well as LEGO DUPLO activities for younger children. Aquabots challenges students to complete various tasks by navigating LEGO robots through a simulated underwater course.

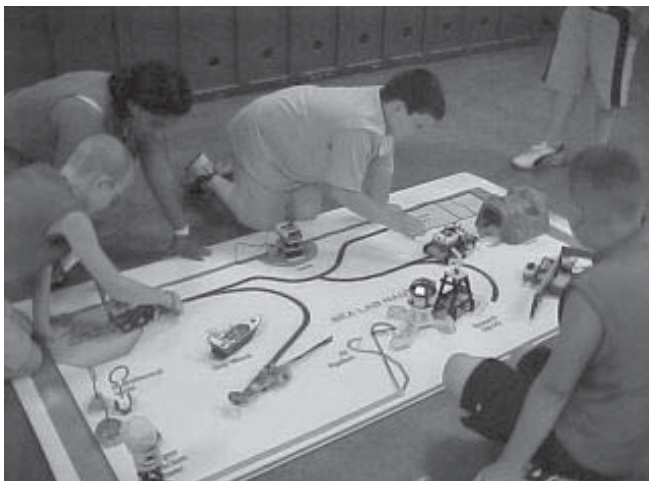
Hamilton uses LEGO DUPLO blocks to introduce basic transportation concepts to Pre-K through third grade students. Younger students (ages 3-5) learn to assemble vehicles, tracks and cargo carriers from pictorial charts and LEGO DUPLO



Left: A student works with building LEGO DUPLO blocks.

blocks. After creating railroad or highway systems, students move “cargo” from one location while factoring time, distance and weight into the transportation process. Older students (ages 5-8) receive transportation related

“story challenges,” which must be solved using LEGO DUPLO blocks. The students use LEGO CAD to design vehicles or simple machines, which contain gears, levers or pulleys, to solve the “story challenges.”



Above left and right: Students at the Barboursville 4-H camp learn to program LEGO robotics to travel along the simulated Aquabots underwater terrain. Summer activities have also taken place at Student Aspect Preparatory School in Huntington, W.Va., and Cabell County Public Libraries including: Barboursville, Cox Landing, Gallaher, Guyandotte, Milton, Salt Rock, West and the Main Library.



Above: Sixth grade student Jonas Gunnarsson traveled from Norway to attend the 4-H Summer Camp after looking up information on LEGO robots online. More information about his trip, including an article featured in the Herald-Dispatch, is available at www.marshall.edu/LEGO/Summer05/Younger4H.html



Students Look into Futuristic Design for Vehicles

by Ashlee Gibson

Area students got the chance to try their hand at looking into the future with participation in the Design a Future Vehicle Workshop (DFV) June 20-25 at the Morrow Library on the Marshall University campus. Students learned about the six technologies needed to design and construct vehicles: propulsion, suspension, guidance, control technology, support and structure.

Research associate David Cartwright and other instructors taught the students how each technology was used in modern vehicles and guided students to plan future vehicles that use these technologies. Each student was introduced to computer-aided design and drafting software and used it to create a future vehicle for presentation.

Workshop instructors guided students through hands-on training activities. Each instructor was assigned a small group of students to promote a supervised, but non-restrictive, creative atmosphere. Workshop participants were also exposed to careers in technology and transportation and told the access to these careers was through higher education.

Projects included building a solar cell car, designing and building a MagLev car, an egg crash test and designing a remote controlled vehicle.



Above: A group of DFV students test their solar powered vehicle.

At the end of the workshop, students presented their concepts of a futuristic vehicle in a PowerPoint presentation to a group of parents. Students decided the interior and exterior look of their vehicles in addition to adding safety features, such as bullet proof glass and all terrain tires.

The DFV web site contains information for students, parents and teachers about the six technologies of transportation used to create vehicles and road systems. Lesson plans that integrate transportation concepts into subjects including math, science, social studies, language arts and computer technology are available at the DFV Teacher's corner.

Academy Gives Students Educational Fields to Explore

by Ashlee Gibson

Students had the chance to explore a variety of educational resources at the Summer Engineering Design Academy June 27-30 in room 119 at Marshall University's Morrow Library.

Research Associate David Cartwright taught the 14 students attending academy with the help of several student volunteers.

Some of the projects include mechanical desktop software training, basic and construction on several model

vehicles such as a balloon propelled version.

Students in attendance also benefited from math, science and communication skills including geometry, physics, report writing and oral communications.

In addition to learning the processes of engineering design, students also had the opportunity to enjoy cuisine from different countries in a "Culture Fest" and participated in a LEGO workshop with K-12 Outreach instructor Linda Hamilton.





AppaLEGO City Educates Elementary Visitors

by Ashlee Gibson

RTI's AppaLEGO City was bustling with visitors May 6 with the arrival of more than 100 fourth grade students from Chesapeake Elementary School.

The children began the day with the construction of a new, small LEGO city which allowed them to work with different modes of transportation. In addition, live views of AppaLEGO City were available from various computer stations in the building. The web camera links allowed students to operate AppaLEGO City's robotic vehicles via the Internet, including the Red Rover.

"The children had a wonderful time touring the facility," Amber Bentley, student jobs coordinator at Marshall, said.

Barbara Roberts, program coordinator, said Bentley, who is also president of the Chesapeake Elementary Parent/Teachers' Association, "organized the event, which consisted of a day-long tour of Marshall University. The students participated in activities to encourage early thinking about college attendance, and they paid a short visit to RTI at the end of the day." Research associate David Cartwright also assisted in guiding the students through activities. "He's very good at managing a large group of children while encouraging them to have fun and to learn," Roberts said.

Through the Science and Engineering NASA Site of Remote Sensing (SENSORS) City, students use sensors to obtain feedback related to operation, control and "teleoperation" of intelligent vehicles and traffic control devices. Students use the SENSORS site to send computer programs to operate ITS components, which can be seen through a typical web connection and requires no special operating software. AppaLEGO City is located at RTI headquarters. It has two web cameras that provide live views of a simulated LEGO city with an oval track, two monorails, a traffic gate and an autonomous, line-following vehicle.



Above: Students work with LEGO blocks at RTI headquarters.

Most of the Chesapeake students were familiar with K-12 Outreach instructor Linda Hamilton's LEGO programs, and some classes have plans to form FIRST LEGO League challenge teams next fall. "Fourth grade is just the right age to start LEGO robotics," Hamilton said.

"Mrs. Hamilton took the Transportation Outreach on wheels Robotics program to the Chesapeake school a year or so ago, and it was well received. The students have been able to view the RTI city from their school or home by conducting teleoperation sessions, but wanted to see the city in person" said RTI Roberts. "We were all pleased that they could pay us a visit as part of a planned university tour."



Above: A group of students work to construct landscaping for their city from LEGO materials.





Transportation Focus is a quarterly newsletter published by the Nick J. Rahall, II Appalachian Transportation Institute.

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Read *Transportation Focus* online at www.marshall.edu/ati/news/newsletter.htmlx

Upcoming Events

Conferences

August 3-4, 2005 5th Annual Technical Forum, Geohazards in Transportation in the Appalachian Region. Charleston, W.Va.

K-12 Outreach

Summer 2005 LEGO Robotics Activities
July 18-22 9:30 a.m., Aquabots Summer Camp, James Morrow Library. Huntington, 4th-6th Grade
July 25-29 9 a.m., Aquabots Summer Camp, James Morrow Library. Huntington, 7-12th Grade

Technology Transfer Activities

July 26-27 MUEEC Outreach Program: 2005 Summer Leadership Seminar, Huntington, W.Va.
July 28 MUEEC Outreach Program: Roundtable Forum, Huntington, W.Va.
Sept. 21-22 PASS Training Morgantown, W.Va.
Oct. 4-5 PASS Training (2-day) Beckley, W.Va.

Upcoming
Events

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