Oakland Today

YOUR SCHOOLS

A WEEKLY LOOK AT OAKLAND EDUCATION

Girls show technology skills with successes at Robofest

Girls from Royal Oak and Farmington dominated Robofest 2001 at Lawrence Technological University in Southfield. Two all-girl teams of fifth-graders from Mark Twain Elementary in Royal Oak took first and second place in the Lego Division while an all-girl team from Farmington Harrison High School snagged second in the Handy Board division behind a fellow Harrison team.

This was the second year that Dr. Chan-Jin Chung, mathematics and computer science professor at Lawrence, coordinated the event.

Fifty-two teams competed in the Robofest Lego Division, using Lego Mindstorm, which has a programmable computer chip. Each team's robot had to deliver packages and pop two balloons in the allotted time.

Christina MacLean, left, and Michelle Goff of Farmington Harrison High with their awards. (Not shown: team member Kathleen Aniciete.)

The Dragon Devils, all from the talented and gifted program at Mark Twain, developed a design that triggered a rubber band, which shot a pushpin into the balloons. The Dragon Devils Black Team placed first; the Gold Team placed second. Black Team members were Melanie Lehman, Brittany Voshol and Jenny White; Gold Team members were Jill Peck, Sarah Hopkins and Erika Black. Both teams took home trophies and gift certificates from the April 28 event.

Photo by Karen Sanborn

Mark Twain fifth-graders took first and second place at Robofest 2001. The girls, from left, are Jill Peck, Sarah Hopkins, Erika Black, Melanie Lehman, Brittany Voshol and Jenny White; in back, coach Joe Hopkins, Sarah's dad, left, and Lawrence Tech president Charles M. Chambers.

"The Robofest competition is a good idea becuse it helps teach kids how to do science and math," said Erika. "It is hands-on and funner than reading out of a math book."

In the high school division, students used Handy Boards, microcontroller circuit boards developed by Massachusetts Institute of Technology.

The Harrison team of girls was made up of senior Michelle Goff, sophomore Christina MacLean and junior Kathleen Aniciete. Their robot outperformed most of the others.

The first-place prize, though, went to Harrison juniors Jefferey Ziemba, Dan Coats, Prashanth Pandain and Simon Breslav and sophomore Kobey Shwayder.

By Nancy Chipman Powers, Your Week staffer

NEWS

NCE TECH CAMPUS FOR MORE THAN 65 YEARS FEB. 16, 2000

Blue Cross Blue Shield of Michigan backs Lawrence Tech Robofest; University trains teachers in robots

By Bill King

Several Lawrence Technological University professors were just parents involved with their children and helping their children's school's involvement in robot building contests at the local level. Then they collectively got an idea – Lawrence Tech's Robofest. The competition quickly got a boost when Blue Cross Blue Shield of Michigan recently agreed to sponsor the event April 15 – during Lawrence Tech's Open House weekend.

Robofest, Sat., April 15, 1-6 p.m. at Lawrence Tech's Don Ridler Field House, will feature two categories. Students from middle and high schools, and colleges and universities will have to build and program a robot from a kit, such as LEGO's $199.99 MINDSTORMS, and program the computer to complete one of several tasks. These competitions are cropping up and expanding around the world. Lawrence Tech's is one of only two local such competitions sponsored by institutions of higher learning.

Robofest was the brainchild of Dr. Chan-Jin Chung, assistant professor of computer science. Chung had served as a coach for an elementary school in Troy with a robot competition team, but he saw a lack of challenge to the competition. So, Chung came up with one of his own. He created a website – www3.ltu.edu/~robofest – for people to obtain information and to submit a request to enter the contest.

"No one else is doing this kind

Continued on page 8

Lawrence Tech's Cont. Ed. teaches teachers how to program little workhorse robots

By Bill King

When LEGO MINDSTORMS robot computer programming kits hit the market they were meant to entice school children to learn simple computer and robot programming. The result was a lot of parents and teachers in Southfield schools left scratching their heads and looking at a pile of LEGO parts, and a central processing unit.

In stepped Lawrence Technological University's Division of Continuing Education. The Division offered a LEGO robot building class and got a surprise number of inquiries and signups. Eventually, teachers from

Continued on page 8

ROBOFEST

Continued from page 1

of robot competition," Chung said. "In many of these competitions, the playground and dimensions are known by all team prior to the event. The robot know how far it can do and what to do next. Our competition is fully autonomous. The challenge for students coming to our competition will be coding in the problem."

The robots will collect information via light, heat or touch sensors, using that data to resolve various problems they encounter. The problems, which teams can take on in whole or pick a problem from the three, include: RoboRace, a robot will follow an unknown path and return "home" when it detects the dead-end; Robot Fire Fighters, a robot must find a candle situated on the track and extinguish the flame with a fan; and RoboTag, tag or avoid being tagged while staying in the playing field.

At the competition, students will arrive with the robots they built and programmed based on the basic information of the individual events. Once at the competition, the student teams may have to do some tweaking using their PC on the program to fine-tune the robot's onboard computer.

Andy Borchers, Lawrence Tech's director of information technology programs and distance learning, has been enlisted to help his daughter's sixth-grade class from Clarkston.

"We're glad to see the young school children taking this on. In order to get these robots to do their thing the students are going to have to understand some engineering and computer science concepts," he said. "It's a logical connection to Lawrence Tech because this is what we teach here."

Lisa Anneberg, professor of electrical engineering at Lawrence Tech, was a coach for her daughter's Girl Scouts troop, which participated in the University Detroit-Mercy competition. She is preparing them now for Robofest.

"When I first got to them, they were having problems just getting the robot to go straight," Anneberg said. "This was one of the big things they learned – how to solve problems. Once they realized how to break the problem down into smaller bits and master one step they got the robot to do what they wanted it to do."

She said the competition was "fairly complicated," but said the challenges offer hands-on learning opportunities.

"These children will learn so much," she said. "It's good for Lawrence Tech. It's good for engineering. It's good for civilization."

"For the students, they get to do something that goes beyond just classroom academics," said Rory Savageau, computer support specialist, Lawrence Tech's Veraldi Center for Educational Technology User Services, who is assisting Chung with organizing Robofest. "This will give the students the practical side of electrical and computer engineering, some mechanical engineering, and hopefully, a lot of fun."

Prizes include monetary prizes and scholarships to Lawrence Tech.

For further information on Robofest call Chung at Lawrence Tech's College of Arts and Sciences at (248) 204-3504 or visit the website www3.ltu.edu/~robofest/.

Page Three
Inside Front Page
Tech News

Area students program in fun time at Lawrence Tech

By Bill King

They might have put out the flame on a candle, but Lego Mindstorm robots light the imagination of elementary and middle school students at Lawrence Technological University's RoboFest 2000. Students won Lawrence Tech scholarships and U.S. savings bonds for their abilities to build and program robots to outrun one another, evade tag and extinguish a candle flame.

RoboFest 2000, sponsored by Lawrence Tech and Blue Cross/Blue Shield of Michigan, is one of the few such contests where students have to program the robots onboard computer to gather information from sensors and solve problems like running a route guided only by a line, evading being tagged by another robot or maneuvering a maze to find and put out a candle.

"We achieved the goals we wanted," said Chan-Jin Chung, assistant professor of computer science. "We got the students involved in many areas – computer science and programming, engineering and creativity. Everything."

He added, "The teachers are calling me about workshops. The teachers are eager to be involved but do not know how to start. I will do workshops for teachers this summer where I will show them how to solve the programs and the answers to the programming problems."

Chung said the students eagerly took up the challenges of computer programming. He said some wrinkles, such as software problems for programming the robots, will be worked out with more experience. Thirty-six teams from schools from as far away as near Flint and Monroe, trekked to Lawrence Tech for the competition.

"Next year the teams will do better from this experience," he said.

The power of the Internet advertised and solicited the teams. Chung established a website – www3.ltu.edu/~robofest where teams could get information and register. The site remains up and interested schools can register for RoboFest 2001, Chung said.

The winners included: from RoboRace; first place, GOODRICH Torpedoes from Oaktree Elementary (Davie Whiting, Jared Degeneffe, Michael Whiting); second place, Pioneers of HARPER WOODS Secondary School (Jason Mowen, Allison Gonyeau, and Michael Liburdi); and third, Rebels of Larson Middle School of TROY (Mi Hae Kim, Chung Young Key). Robo Firefighter: first, Da Cubs of Norup Middle School of OAK PARK (Jeff Ferman, Anthony Rosenblum, and David Elmquist); second, Little People of Carman Park Elementary (Michael Root, Kyle Ewing and Blake Leach). Robo Tag: first, YC2 of First Baptist Church of ROYAL OAK (Matt Marshall, Ryan Marshall and Kiel Mackler); and second, Little People of Carman Park Elementary. First place winners received a $300 savings bond, second $250 savings bond and third $200 savings bond.

The winners of the Lawrence Tech $1,000 scholarships were GOODRICH Torpedoes; Earhart Aviators 4 of Amelia Earhart Middle School in DETROIT (Raymond Murry and Matthew Bolden); and YC2 of First Baptist Church of ROYAL OAK.

> **"We achieved the goals we wanted," said . "We got the students involved in many areas – computer science and programming, engineering and creativity. Everything."**
>
> **– Chan-Jin Chung, assistant professor of computer science**

Innovation of Design awards went to the Pioneers of HARPER WOODS Secondary School; and Da Cubs of Norup Middle School of OAK PARK.

Leadership awards for teachers/coaches went to: Dave and Paula Degeneffe of Oaktree Elementary; Mark Lindsay and Lawrence Stackpoole of Amelia Earhart Middle School; Julie Simpson of Norup Middle School of OAK PARK, and Andrew Cobb of Davis Aerospace High School in DETROIT.

For further information regarding RoboFest 2001 check the website or call the Lawrence Tech department of mathematics and computer science at (248) 204-3560.

Blue Cross Blue Shield Sponsors RoboFest 2001

By Karen Sanborn

Robotics teams throughout Michigan received a substantial amount of support as Blue Cross Blue Shield of Michigan generously volunteered to sponsor RoboFest 2001 at Lawrence Tech. In addition to providing prizes for the competition, the sponsorship also supports free MIT Handy Board classes for up to five high school robotics teams planning to attend RoboFest 2001 (www.robofest.net).

There were nine teams that applied for the free Handy Board classes and six were chosen. Blue Cross Blue Shield will sponsor North Farmington High Teams I and II, Southfield High, Advanced Technology Academy Team I and Ford Academy. DaimlerChrysler and Lawrence Tech's College of Engineering and Department of Electrical and Computer Engineering will sponsor the Advanced Technology Academy Team II.

"This class is a first for high school robotics students in Michigan," said Chan-Jin Chung, assistant professor of math and computer science at LTU. "Until now, most high school robotics teams have been building just hardware controlled by joysticks. In this class they will learn how to build both hardware and software in order to create true, autonomous robots."

Developed by MIT, the Handy Board is a hand-held microprocessor board ideal for educational autonomous robotics projects. Each of the teams selected to attend the free Handy Board classes received a Handy Board Kit, compliments of their sponsor. In return, the teams agreed to participate in the RoboFest 2001 Handy Board Division on April 28 at Lawrence tech. The teams will attend six Handy Board classes in March, in preparation for RoboFest 2001.

David Bindschadler, chair of LTU's math and computer science department, hosted the first Handy Board class and award presentation March 1, at Lawrence Tech. Dr. James Rodgers, dean of the College of Arts and Sciences, welcomed the six teams and introduced their instructor Barry Brouillette. Brouillette coaches the Harrison High School Robotics Team in Farmington Hills. They won first place in the International Fire Fighting Contest at Trinity College in Connecticut in 1999, and placed third in the National Botball contest in Austin, Texas, last year.

"Robotics is a great way to learn about physics, microprocessors, engineering concepts, and real-time systems development," Laird Johnston, dean of engineering, told the high school students. "I'm sure this class will be a rewarding experience for you," he said. "I hope you have fun and I wish you luck at Robofest 2001."

Even spectators will have fun at RoboFest 2001, so mark your calendars now for RoboFest 2001, April 28, sponsored by Blue Cross Blue Shield of Michigan. The event takes place during Lawrence Tech's Open House, in the Don Ridler Field House. It's sure to delight and entertain students from 10 - 100 years old.

DRYOVAGE PHOTO

Instructor Barry Brouillette, who coaches the Harrison High School Robotics Team in Farmington Hills, speaks to the first Handy Board class held at Lawrence Tech March 1.

DRYOVAGE PHOTO

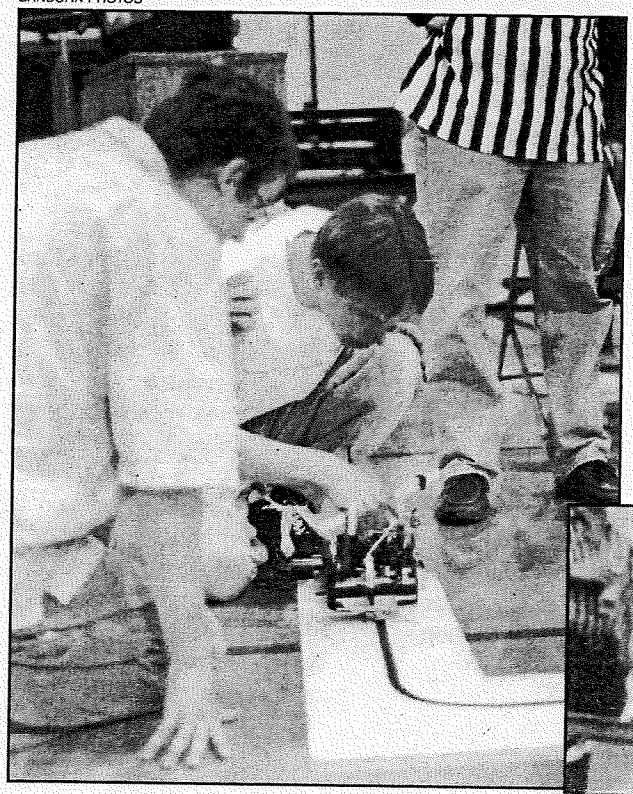
Dr. Laird Johnston, dean, Lawrence Tech College of Engineering (right), hands Derrick Thomas, junior from Ford Academy High School, a M.I.T. Handy Board Robot kit as Dr. David Bindschadler, chair, Math and Computer Science Department, Lawrence Tech, looks on.

RoboFest Rocks

RoboFest Attracts Female Future Engineers

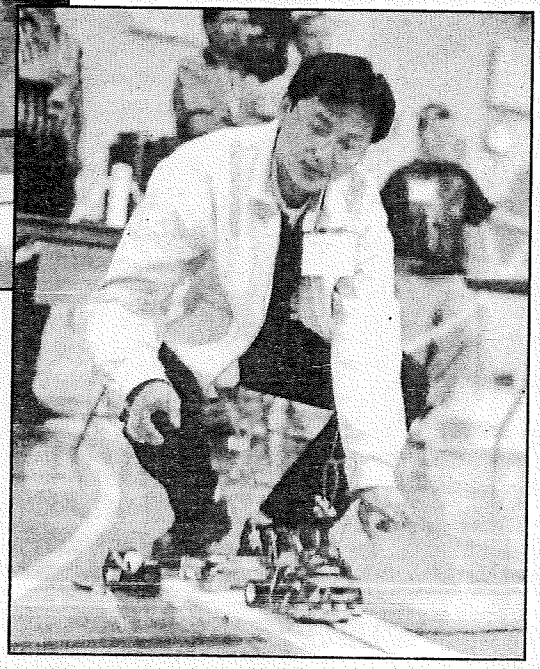
Nearly 70 teams from middle schools, high schools and universities competed at Robofest 2001 during LTU's Open House. Quite a few more girls competed in this year's computer programming and engineering competition, and they gave the guys a run for their money. An all-girl team from Farmington Harrison High School took second place in the HandyBoard competition, and female future engineers from Mark Twain Elementary in Royal Oak (pictured here with LTU President Charles Chambers) took second in the Lego Robot division.

SANBORN PHOTOS



Gentlemen, adjust your robots

High School Handyboard winners Dan Coats and Jeff Ziemba from Farmington Harrison High School tweak their robot so it will pop the last balloon on its way back from delivering a package. Sponsorship from Blue Cross and Blue Shield of Michigan provided the Handyboard kits and training to five student teams. Chan-Jin Chung, professor of math and computer science, coordinated Robofest 2001 and received a standing ovation from the students and their parents.



Getting it Just Right

Sponsored by the Math and Computer Science Dept., Hsien-Hsiang Chiu, MIS student and student assistant in the College of Management, turns his robot loose to deliver a package and pop two balloons.

ls

il

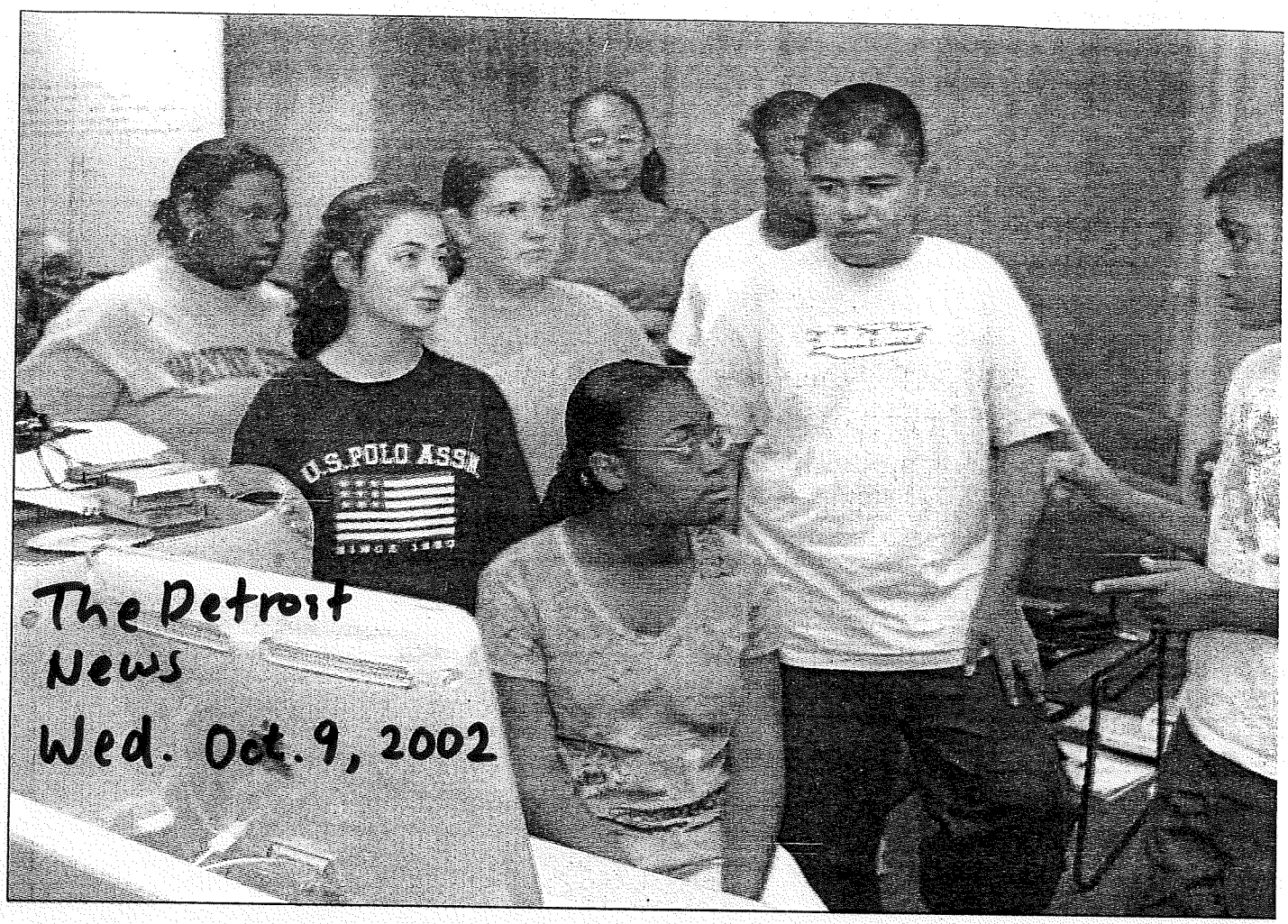
'V sets
Middle
young-

, said eighth-

ıol about this
sit in a class-
eacher tell you
" added the 13-
y get out there
get bored that
lways learning

ıre working on
last summer's
er project, in
ed n up
nd ks in
Kwame Kil-

deotaped the
ne just had a
ng together on
le said. "That's
ids are willing
e during their
o work on a
. It shows how
rogram."
ram, students
ology skills to
ervice.
project comes



The Detroit News
Wed. Oct. 9, 2002

Ricardo Th

Technical skills are only part of the lesson. Teamwork is the other, says Ruben Saavedra, 13, second from right. Other stude Corinne Lyons; Zania Mugan; Kristen Evoy; Janis Figueroa; Jessica Young, foreground; SeTyra Coston; Rubin Saavedra; an

our way, we do the best we can to fit it into the schedule," Stackpoole said. "That's one of the constant themes of this program: That things don't have to stay as they are, that people can make a change in the community if they all work together."

In April, Earhart's students won second prize in Robofest, a competition at Lawrence Techn.logical University in Southfield. Entrants from 45 Michigan schools built and programmed working robots.

Earhart's entry was designed to bring oxygen masks and other life-saving materials to people trapped in a burning building.

Motivational tape

But even with that second-place award, most students said working on the Motor City Makeover film was most rewarding because it hit closer to home.

"We had a lot of fun, but we also learned a lot," Vasquez said. "When you see people who are out there taking the time to clean up your neighborhood, it really makes you feel good. You could tell the volunteers were really having a good time, and that's what we're trying to capture with this movie."

When the video is completed in December, it'll be sent to the mayor's office.

"The mayor can then take the video to the business community to try to get sponsors for next year's cleanup," Stackp
ly, companies w
sense of the ent
both the voluntee
who taped the cl

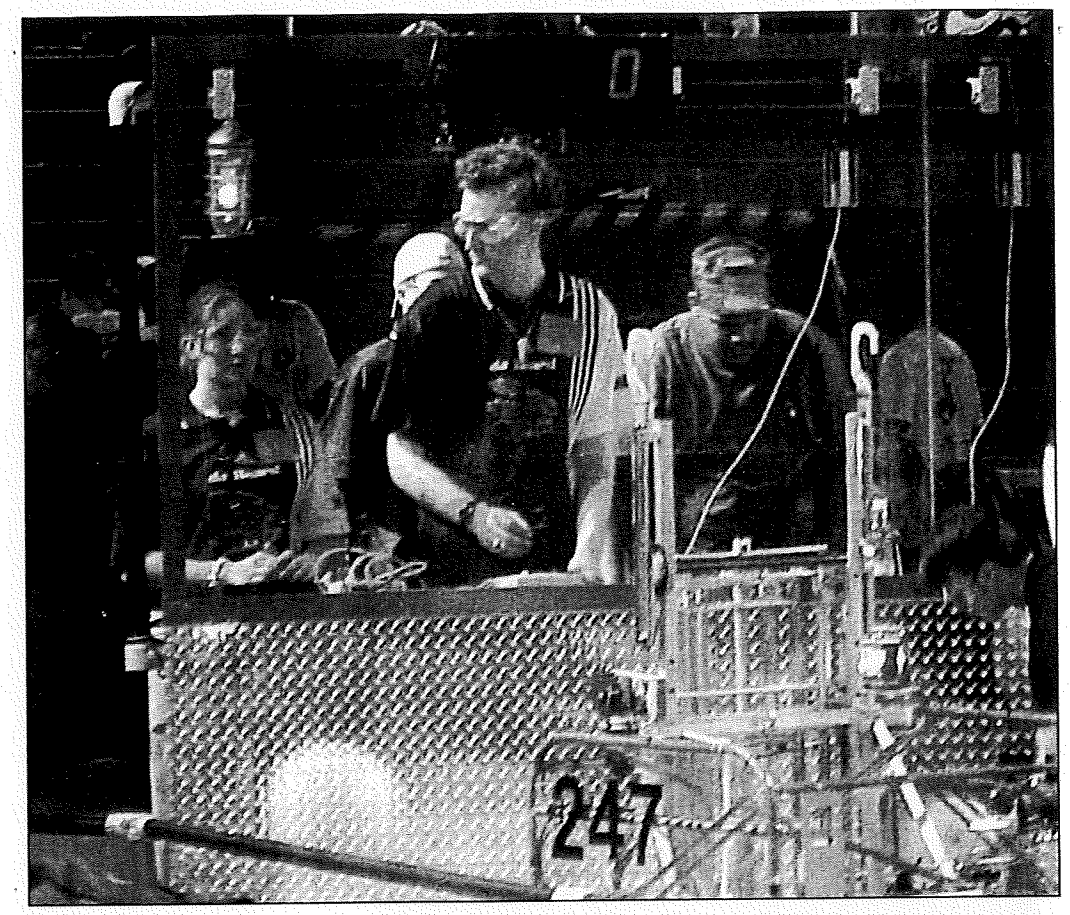
Jessica Young
video will inspire

"Maybe if pec
and see how muc
might get them t
next cleanup," s
from nearby Wes

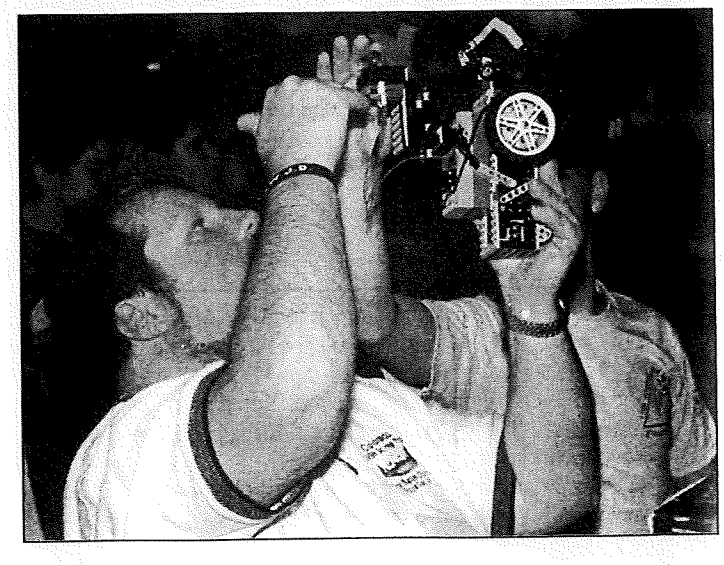
Young bega

Daily Tribune 4/16/2002

Into robotics



More than 100 middle and high school students — including teams from Berkley's Norup Middle School and the Royal Oak First Baptist Church Youth Connection — descended on Lawrence Technological University this month to show off their knowledge of robotics in a competition called RoboFest 2000. Using Legos, the competition gave the 46 teams a chance to employ problem-solving techniques, teamwork, mechanics, physics, creativity, logic, mathematics and computer programming. Above, leader Julie Simpson and her team of students from Norup Middle School watch as an official checks their robot for compliance to specifications. Norup sent four teams to the competition. One finished first in the Robo Firefighter/Junior Division competition; two others earned innovative design awards; and Simpson was given a leadership award. At left, another official looks over the robot vehicle created by members of the First Baptist Youth Connection as team member Jeff Sparling looks on. The First Baptist Youth Connection team captured first place in the Autonomous Robot competition.



Daily Tribune photos by Dani Clark

Kate Munro Photo

...3 Ian Smith, 15, left, and Colin, 14, watch their robot move ...track at the RoboFest 2003 competition at the Hollis/Brook... ...h School. Students from grade school through high school competed in the event, organized by RoboTech in Nashua, a technology education center for children. The Smith brothers, from Hudson, took second place in the advanced division.

...ounger students drawn to RoboFest

...E MUNRO
...eader Correspondent

...HUA — Robotics and kids ...ong gone together in the state, but now robotic education is reaching even younger students.

At Hollis/Brookline High School yesterday, more than 60 parents, teachers and students turned out for the RoboFest 2003 competition, which included many grade school students.

"It's still about robots, learning and the love of technology," said Nancy Rosenberg, who volunteered her time to help organize the event. Rosenberg, who also works with the Hollis/Brookline FIRST team, a robotics competition for high school students, said the RoboFest event may turn into a feeder for the FIRST competitions, encouraging kids to become interested in robotics at an earlier age.

"More people showed up than we expected," said Rosenberg. "It's amazing the opportunities the kids have today, to program and work with robots."

Her husband, Neil Rosenberg, the technology director at Hollis/Brookline High School, encouraged the students to continue with robotics as they get older.

He said he was overwhelmed by the amount of quality engineering that went into yesterday's event. "You've shown you have what it takes. I hope you continue down this excellent path."

Many of the students who participated yesterday take classes at RoboTech Center in Nashua, which sponsored the event along with Lawrence Tech University, College of Arts and Sciences and Adecco Corp.

Some of the competitors are already in high school and plan to join FIRST. That was the case with Ian and Colin Smith, of Hudson.

Their father, Charles Collinsen, filmed the boys as they started their robots down the path toward a trash can. The robots followed a black line with sensors and dumped a wheel in a trash can at the end of the track, then turned around and headed back to home base.

The competition was different from others in that it concentrates on autonomous robots that are programmed by the children. The parameters of the playing field are not given until the day of the event, so the children are taught to solve problems on the fly. The competition was open to fifth grade to high school aged students.

Detroit Free Press
www.freep.com

MIKE WENDLAND: Tech camp gets girls to consider careers in science

BY MIKE WENDLAND
FREE PRESS COLUMNIST

June 28, 2004

Who says girls don't take to technology like boys?

Tell that to the 40 elementary and middle school girls from across the metro Detroit area who spent last week at a special technology camp held on the campus of Lawrence Technological University in Southfield.

The girls built working robots, learned to design and program their own Web pages and were told about the many technology jobs awaiting them someday by members of the Michigan Council of Women in Technology.

The hope is that the five days of hands-on exposure to technology sparked excitement that will lead the girls to pursue careers in math or science.

Sponsored by AT&T, the day camp was taught by LTU faculty and mentored by female executives from Ford Motor Co., Blue Cross Blue Shield of Michigan, Trilogy, Sun Microsystems and several other area companies.

I dropped by on Thursday, as the girls were busy programming robots they built under the direction of Dr. C.J. Chung, LTU's well-known robotics professor.

Chung is used to teaching college-age engineers and grad students. But he gave up a week of his summer vacation to show the girls how software and a small circuit board can turn a miniature wheeled vehicle constructed of Lego blocks into a radio-controlled robot.

"The girls are very careful and accurate in following directions -- more so than boys, I think," he said. "They have very good problem-solving skills."

Danielle McMurtry, 13, an eighth-grader at Warner Middle School in Farmington Hills, and Katie Mansueti, 11, a sixth-grader at Our Lady Queen of Martyrs in Beverly Hills, showed me one of the robots.

"This was fun," said Danielle, who wasn't sure what she wanted to be when she grew up but thought computers and technology were "kinda neat" and something that now interested her.

I followed them to another classroom where they were learning how to make Web sites.

Katie, who says she wants to be a chef or maybe a soccer player someday, tapped away at a laptop,

using a Web program to make a personal page.

"This is so cool," she kept saying.

That was exactly what camp organizers hoped to hear.

"The number of women taking technology courses in college and entering the workforce is declining rapidly," said Ricci Ososkie, director of sales for AT&T's Enterprise Business branch in Detroit. "That's why we're trying to introduce them to the possibilities at an early age."

According to a report by the National Council for Research on Women, the percentage of women enrolled in undergraduate computer science programs has drastically declined over a 15-year period.

In 1984, the percentage of science degrees earned by women was 37 percent. That dropped to less than 20 percent in 1999.

That same year, 90 percent of high school students taking advanced placement tests for computer science college credit were male, according to the report.

"Technology drives the economy," said Diane Cairns, supervisor of the camp and owner of an information-technology consulting business. "It will do so even more in the future. If we don't get serious about this, there won't be any women involved in this field."

AT&T has sponsored a similar camp in Chicago for the past several years. Detroit was chosen because of the heavy emphasis on technology associated with the automobile industry.

Rosemarie Baylor, an executive with Sun Microsystems and vice president of the Michigan Council of Women in Technology, said council members will follow up with the girls over the next year in the hopes of getting them to take tech-related courses in high school.

"We had more than 80 volunteers involved in this camp, and there was a lot of mentoring going on," she said. When the girls got to know women who are successful technology leaders, "you could just see them realizing that technology was a pretty exciting career to pursue."

The council is already making plans to hold the camp again next year, as well as to design a similar but more advanced program they can take to high schools.

Contact MIKE WENDLAND at 313-222-8861 or mwendland@freepress.com.

Students to compete in Robofest championships

Lawrence Technological University will be hosting the World Robofest 2005 Championships this Saturday, April 23, from 9 a.m. to 3 p.m. in the Don Ridler Field House on the LTU Southfield campus.

More than 40 teams have qualified at 14 regional and international contest sites to move on to participate in the World Robofest 2005 Championships. Students from Michigan, across the United States, Korea and Canada will be competing during the World Robofest Championships at Lawrence Technological University.

The team "Dark Matter One" from Muir Middle School will be among those competing in World Robofest on Saturday. Dark Matter team members John Bottenberg, Megan Crowley and Paul Doerr qualified for the World Tournament at the Northville Regional Tournament held April 9 after two months of preparation building and programming their two robots for the Robofest RoboRelay competition. The team members are optimistic about their chances of scoring high at the World Robofest and winning the top prize of laptop computers for each team member.

Robofest is an annual student robotics contest that is aimed at improving students' critical thinking skills, and supporting multidisciplinary and co-operative learning. The contest is for youth grades 5 to 12, and requires that teams of students design, construct and program two fully autonomous robots. "Fully autonomous robots" means that the robots must be fully programmed to run without human assistance. There are no joysticks or remote controls allowed. Attendance to the World Robofest 2005 Championship is free.

The object of RoboRelay is for one autonomous robot to navigate a lined path, stop after a series of crossing lines and pass a ball to a second robot, which identifies the lighted one of three possible paths, navigates to the end and drops the ball into the target basket. As difficult as this mission may seem, it is further complicated by several unknown factors that are only unveiled at the start of the competition.

Dark Matter One team members have participated in FIRST LEGO League, a similar autonomous robotics competition, for the past several years. They were members of the 2004 FLL team "Dark Matter", and were finalists for the 2004 State of Michigan Director's Award, FIRST LEGO League's top award. In addition to robotics, all three are members of the Muir Middle School concert band and enjoy relaxing moments playing laser tag.

The Robofest contest allows students to participate in two different ways, Exhibition or Competition. The Exhibition portion of the event provides students full freedom to exhibit any creative autonomous robotics project. The Competition challenges teams to accomplish robotics missions while using two autonomous robots students have designed and programmed. The robots must be programmed to communicate with each other. This year's Competition Challenge is "RoboRelay." Mission details, official game rules, and streaming video of the 2005 mission can be viewed at www.robofest.net.

The exhibition portion of the competition encourages students to use their creativity and ingenuity to design a robot for any purpose. Entries include a detailed display explaining the purpose and design of the robot. Exhibition teams prepare a 5-minute presentation and demonstration of their robotic creation. Teams are judged on their originality, teamwork and design. Students who compete in this category must exhibit teamwork and communications skills in addition to technical know-how.

Robofest, which has grown steadily since its inception, is the brainchild of C. J. Chung, professor of math and computer science at Lawrence Technological University. He established Robofest in 2000 to provide students a fair and affordable opportunity to compete in the design, construction and programming of their robots while learning problem-solving techniques, mathematics, logic, creativity, physics, electronics, mechanics, teamwork, computers and computer programming.

For more information on Robofest, visit the official Web site, www.robofest.net.

SUBMITTED PHOTO

John Bottenberg, grade 7, Megan Crowley, grade 8, and Paul Doerr, grade 7, comprise the Robofest team "Dark Matter One," which will compete at the championships this weekend.

Observer & Eccentrics

Article published Aug 13, 2006

LTU summer campers program robot dogs

BY SUSAN STEINMUELLER
STAFF WRITER

This summer, Jack Glantz, 15, of Bloomfield Hills, learned how to prepare his dog for a dance or soccer competition.

Of course the lesson wasn't with a real dog, but a robot dog. Glantz was among three who attended the first summer camp at Lawrence Technological University in Southfield on how to program the artificial intelligence Sony AIBO robots. The organizer was Lawrence computer science Professor C.J. Chung Ph.D. of Troy.

"We learned how to make them move," said Jack. "They can dance or kick a soccer ball. It's cool."

Also attending were his brother, Jim Glantz, 13, and Colin Harman, 13, of Bloomfield Township. All are home schooled.

Campers learned C++ and Python programming language to get the robot dogs to perform various functions in response to data received from more than 20 sensors, including an on-board camera. They demonstrated what they learned on the last day of camp.

AIBO Camp instructors were Lawrence Tech seniors Steven Kryskalla of Rochester and Emily Trudell of Waterford. Chung is the founder and director of Robofest (www.robofest.net), an annual national robotics contest for students.

The Glantz brothers' interest in robots started with the Legos robotics invention kit. They have also competed in Robofest, where they found out about the camp.

According to camp information, using robot dogs makes it fun for children to learn about how to work with artificial intelligence. Research has shown that getting children involved in math and science early in their academic careers is a good way to generate interest in careers in technology.

That interest is already there for the three friends.

"It combines a lot of my interests -- computers, engineering and electronics," said Jack. "My dad is hinting I should be a doctor, and I think medical robots will be a big thing in future years."

"In college I would like to at least take a computer science course and learn more about programming," said Jim.

He said he would recommend the camp.

"There were good teachers and the languages were pretty fun to learn. If kids have worked with Legos before they would enjoy this."

Mary Glantz, their mom, said, "I am so grateful to Dr. Chung for what he has done to give them this kind of opportunity. It has just been a blessing for our families."

LTU also plans a Thanksgiving RoboParade.

Lawrence Tech, www.ltu.edu, offers more than 60 undergraduate, master's, and doctoral degree programs in Colleges of Architecture and Design, Arts and Sciences, Engineering and Management.

⊕ Zoom Photo

COURTESY PHOTO

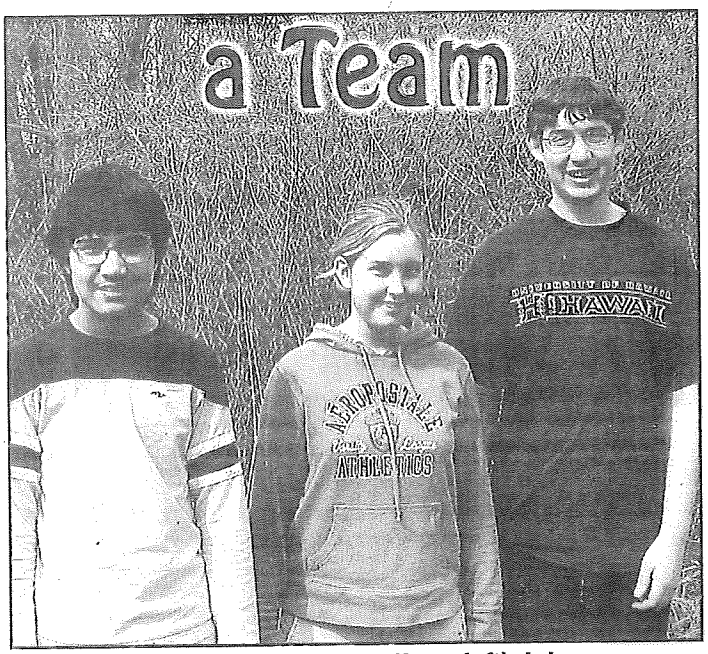
Jack Glantz, 15, Jim Glantz, 13, of Bloomfield Hills and Colin Harman, 13, of Bloomfield are pictured with the robot dogs they learned to program.

ROBO: Students excel at Robofest at world championships at LTU

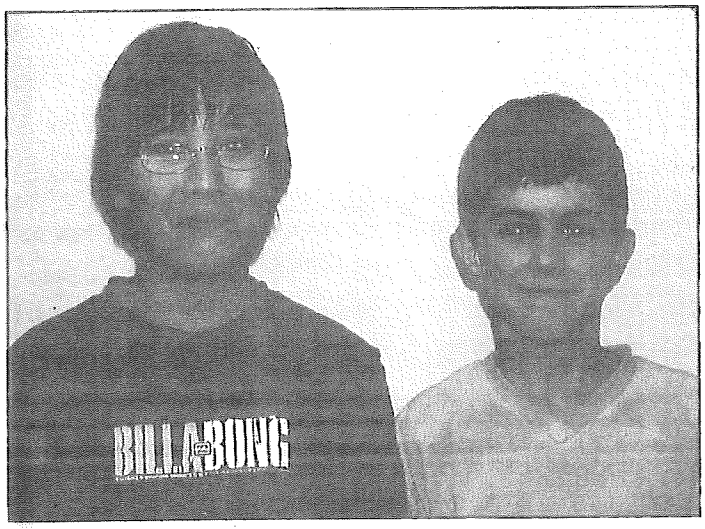
plicated by an unknown mission or task for each robot that is unveiled at the start of the competition. The first two teams whose robots successfully accomplish all mission tasks as well as the unknown missions, earn additional points.

Robofest, which has grown steadily since its inception, is the brainchild of Dr. C. J. Chung, Professor of Math and Computer Science at Lawrence Technological University. He established Robofest in 2000 to provide students a fair and affordable opportunity to compete in the design, construction and programming of their robots while learning problem-solving techniques, mathematics, logic, creativity, physics, electronics, mechanics, teamwork, computers and computer programming.

For more information on Robofest, visit the official Web site, www.robofest.net



Pictured are 'a Team' members (from left) John Bottenberg, Megan Crowley, Paul Doerr.



Students Blaze Hilario (left) and Bijan Masrouri are students on the Technochips team.

Continued from page 7A

game was for one autonomous robot to navigate a lined path, stop, remove a closed gate, return to the starting point and instruct a second robot to start. The second robot must also navigate the path and pass through the gate, identify the location of three (junior level) or four (senior level) randomly-placed toxic waste containers and remove them from the playing field. The mission is further com-

TEAM ROSTERS

#330-1:
Jim Donahue (Muir Middle School)
Jim Vogel (Muir Middle School)
Jake Carr (Muir Middle School)
Madison Carr (Kurtz Elementary School)
Tori Heilmann (Johnson Elementary School)

#193-1 ("a Team"):
John Bottenberg (Muir Middle School)
Paul Doerr (Muir Middle School)
Megan Crowley (Milford High School)

#332-1:
Deanna Brandell (Muir Middle School)
Tyler Brock (Muir Middle School)
Greg Jamison (Kurtz Elementary School)

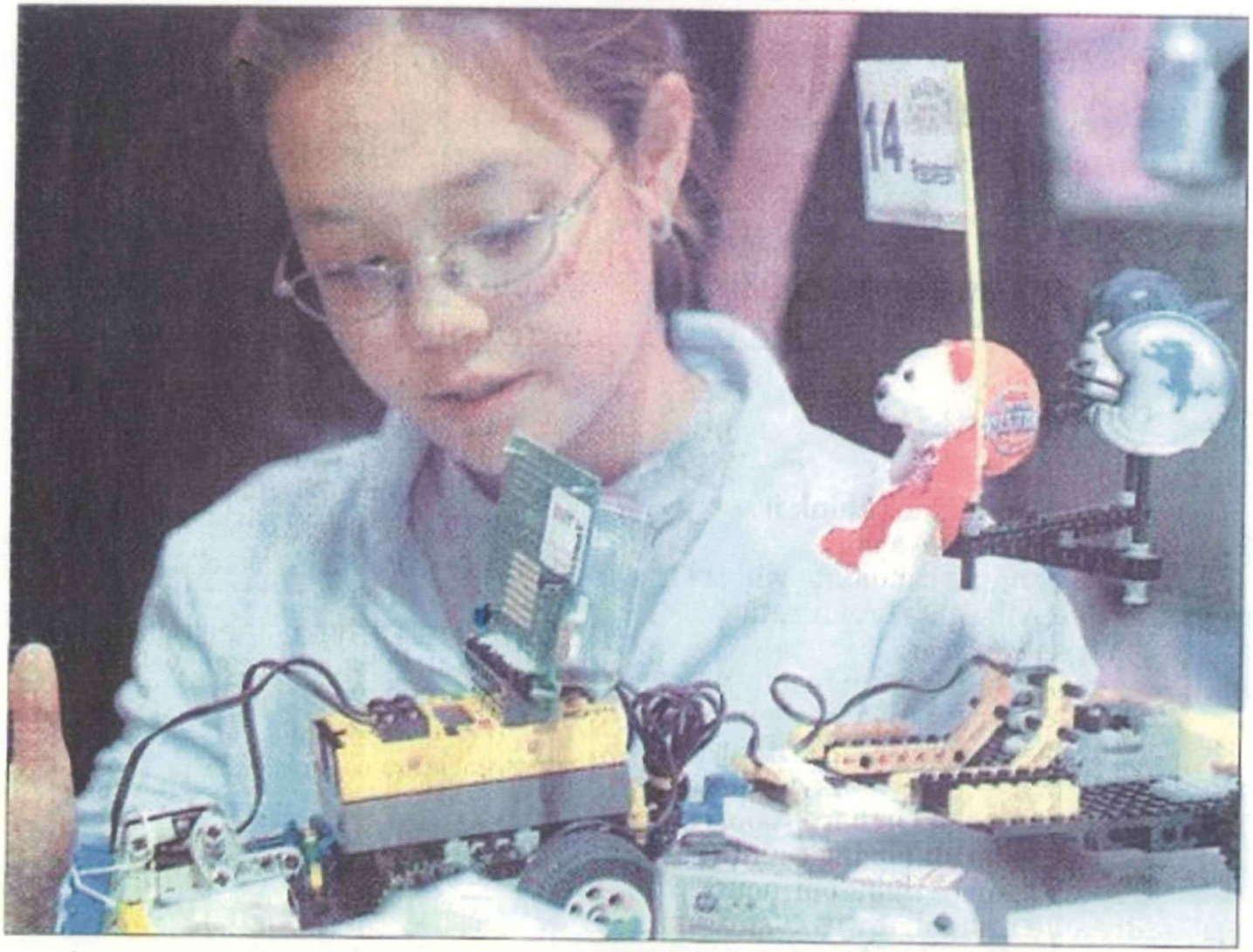
#193-2 ("CSI Bots"):
Erika Arnold (Johnson Elementary School)
Sophia Doerr (Johnson Elementary School)

#316-1:
James De Clerck(Kurtz Elementary School)
Jake Hatchard (Kurtz Elementary School)
Adam Hatchard (St. Mary's Preparatory of Orchard Lake)

#362-1 ("Technochips")
Blaze Hilario (Johnson Elementary)
Bijan Masrouri (Johnson Elementary)

#362-2 ("Sponge-Bob Rookie Pants")
Charles Wolfe Johnson Elementary School)
Evan Wilson (Johnson Elementary School)

THE OAKLAND PRESS
SUNDAY NOVEMBER 19 2006



Anna Latos, 11, of Detroit Country Day Middle School (above) fine-tunes the Detroit Sports Robot before the start of the Robo Parade at Lawrence Technological University in Southfield on Saturday. At right, robots make their way down the parade route.

Special to The Oakland Press photos/ DAVID KILKENNEY

Ingenuity helps local girls in World Robofest Championship

BY CAROL MARSHALL
STAFF WRITER

From regionals, they were off to compete in the World Robotics Competition May 13 at Lawrence Tech. The competition drew 68 teams from all over the United States, Canada, Mexico, China and South Korea.

A high-tech twist on an old-fashioned chore led three girls to success at the World Robofest Championship in Southfield earlier this month.

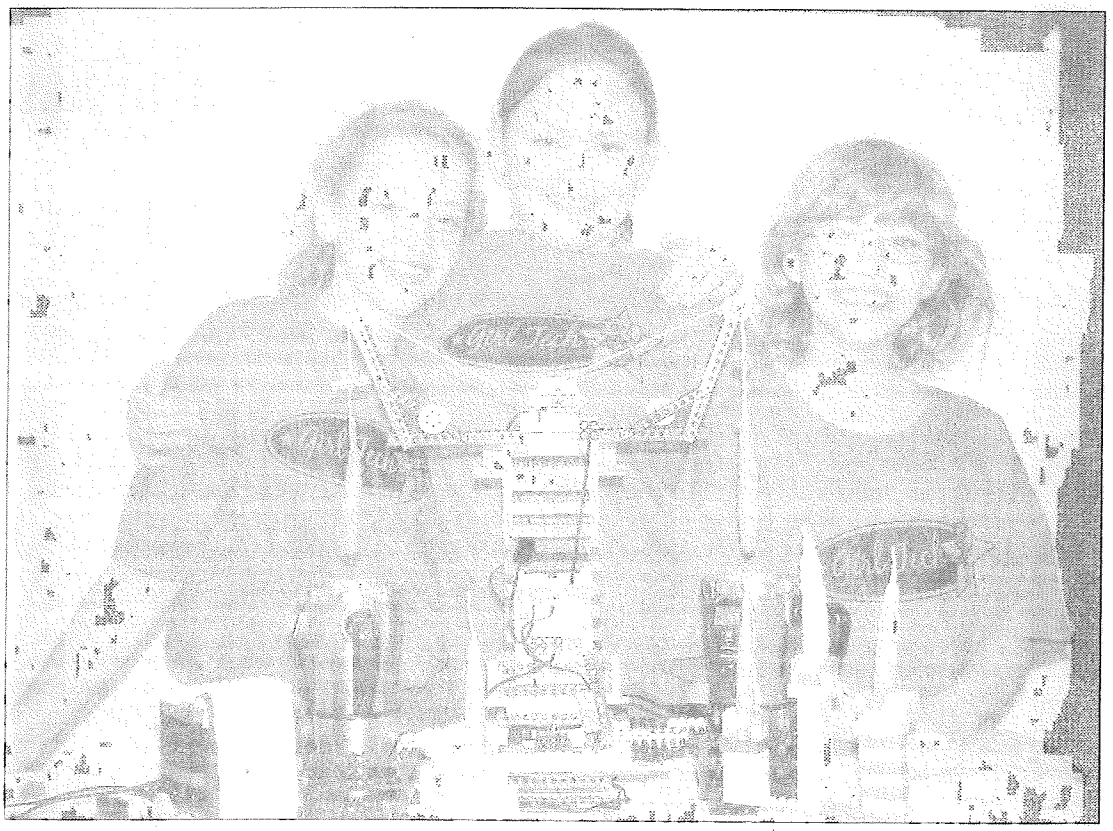
The girls - Jenni and Leanne Bonello of Canton, and Emily Finch of Plymouth - took third place in the junior division of the competition, hosted annually at Lawrence Tech University, for a candle-making robot with a candle burning warning device.

"Emily got the idea from going to Greenfield Village," said fourth-grader Leanne Bonello. "Dipping candles seemed really boring and repetitive." So they formed a team, which they called "Girl Tech," and made a robot to do the work for them. They had to try a few times, revising and perfecting their design, before they came up with a machine that would build candles without lumps.

They entered the regional competition at their school, Canton Charter Academy, in April and won first place. From regionals, they were off to compete in the World Robotics Competition May 13 at Lawrence Tech. The competition drew 68 teams from all over the United States, Canada, Mexico, China and South Korea.

Girl Tech took third place in the junior exhibition, and the girls brought a trophy back to their school, as well as Mindstorm Robotics kits for Canton Charter Academy. Each of the three girls also won $2,000 per year renewable college scholarships to attend Lawrence Technological University.

cmarshall@hometownlife.com | (734) 459-2700



Sisters Jenni (left) and Leanne Bonello (right) of Canton, and Emily Finch of Plymouth, students at Canton Charter Academy, recently took third place at the World Robofest Championship for their candle-making robot.

Motivating Young Minds to Master the Machine

Coach Patricia Zimnie with her Robofest team, 189-1 MASH, competed in the Junior Division at the 2005 World Robofest Championship, where they earned a third place Best Performance award. The students, from Athens High School in Troy, Mich., are Michael Breish, Raghav Simha, Jason Weihman, and Steven Zimnie.

By Lori Birman

Lawrence Tech's Robofest 2006 is bigger and better than ever. The competition has added five new venues, including sites in California and Washington. Robofest will take place at 16 qualifying competition sites across the United States, Canada, and Korea. Team registration has begun and the 2006 Game Rules were announced Jan. 4. Teams can register now at www.robofest.net.

This year's Robofest Game, "Toxic Waste Cleanup Challenge," requires student teams to design, construct, and program robots to sense and search for objects, communicate with each other, map the robot's location (localization), and navigate the partially unknown path.

In addition, the robot must be built so that it can lift or push objects and climb down or up a ramp. The competition area lighting conditions will be a secret until the last minute, so students must master the skill of adjusting their programs to adapt to an unknown lighting environment.

Since it started in 2000, Robofest has grown to involve more than 165 teams and hundreds of students at venues across the United States and in other countries. This autonomous robotics competition for students in grades 5-12 is the only one of its kind to challenge students to compete using two fully autonomous robots that interact with each other. Robots must be programmed by the students – coaches are not allowed to help during the competition – to perform without remote controls and to sense and respond appropriately to the dynamic playing field.

Robofest also is the only competition that offers two venues for participants — games and exhibition. During games, teams accomplish robotics missions. During exhibition, students demonstrate any robotics project they create. The Robofest environment encourages students to have fun while learning computer programming, engineering, math, and science technology.

An "unknown mission," announced the day of each competition, presents students with small changes in the game mission. Part of the playing field also is unknown, so students must be able to program their robots on-the-fly and to solve problems quickly and creatively.

"Robofest is a magnificent hands-on program that allows students to take real-world scenarios and solve them on their own," said Patricia Zimnie, Robofest coach and the science/technology department chair at a middle school in the Oak Park School District.

"What I really like about the program is the fact that the students have to show off their ability without any adult intervention during the actual competition. I am allowed to offer them assistance and guidance when preparing for the competition, but when it comes to the big day, I walk away and they are on their own. To me, it is one of the greatest pleasures a coach can have when you watch your students use the knowledge and the skill they acquired to successfully complete the scenario."

Robofest 2006 qualifying contests will take place in April and May with top teams qualifying to compete at the World Robofest 2006 Championship on May 13 in the Don Ridler Field House.

Coordinated by the Math and Computer Science Department at Lawrence Tech, Robofest needs volunteers to help during the competition. Contact Lori Birman at lbirman@ltu.edu if you'd like to help.

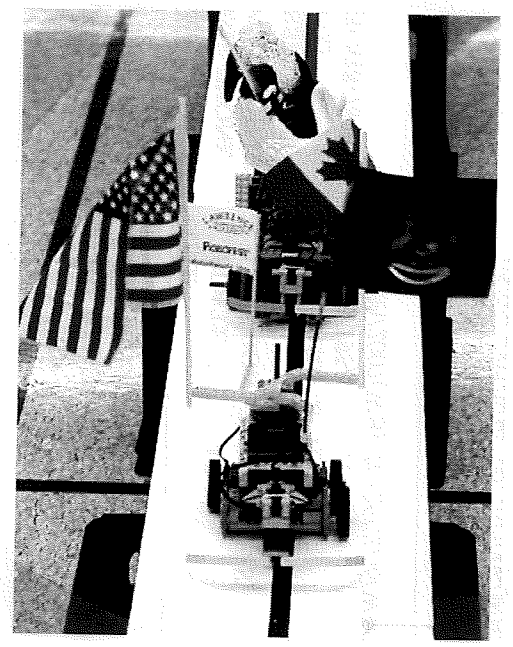
It will be a Thanksgiving parade unlike any other -- not just because it will be held five days before the holiday.

Lawrence Technological University is holding what it calls the first-ever Thanksgiving parade of robots on Saturday, Nov. 18.

RoboParade aims for a high-tech holiday

BY WAYNE PEAL
COMMUNITY EDITOR

the Observer & Eccentric
11-15-06



The robot floats were created and will be programmed by area youngsters. They'll discuss their creations at 9:40 a.m. with the parade to begin at 11:30 a.m.

"We're expecting at least 100 kinds to participate, maybe even a whole lot more," said university spokesman Eric Pope.

The event is free and open to the public.

The RoboParade is the brainchild of LTU professor C.J. Chung. It's not only an outgrowth of his continuing technology work but also a tribute to Detroit's long-running Thanksgiving Day parade tradition.

Each robot is programmed to follow the parade route, even making stops along the way, without help from their creators. The robots use Lego RCX microcomputer bricks, high-tech cousins to the familiar children's toy. Each float has been individually decorated as well.

The LTU event grew out of the university's summer computer camps for students in fifth through 12th grade. Chung has said he was looking for ways to keep students' enthusiasm alive once camp had ended.

"This is a way to keep them interested in technology," he said.

Participants are coming from throughout the tri-county area.

"Some started as early as June," Chung noted.

He hopes the new parade become as much a tradition as America's Thanksgiving Parade, begun 82 years ago on Woodward Avenue in Detroit.

"What is interesting is that I've heard from some other

cities that are interested in doing the same thing next year," Chung said, adding that communities in New Hampshire and California have already expressed interest in conducting events of their own.

Though the parade is new, Chung has run Robofest, an annual international competition, since 2000. A spring event, Robofest also brings hundreds of students to Lawrence Tech for the final round.

The parade could have broader appeal he noted, because while only a few teams can win the Robofest, "with a parade, everyone involved is a winner."

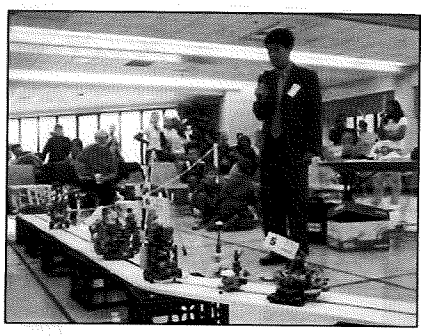
A video of some of robot parade floats is available at robofest.ltu.edu/movies/roboParadeMCWTcamp.wmv. Additional information on either program is available by sending Chung an e-mail at chung@ltu.edu or calling him at (248) 204-3504.

Students were driving force in robot parade

BY PAT MURPHY
STAFF WRITER

At Lawrence Technological University, even a parade is a learning experience.

LTU had 32 floats in a Thanksgiving parade culminating at the Renaissance Center in Detroit on Saturday. These floats, however, were robots invited to show their stuff by C.J. Chung, an associate professor in the math and computer science department at LTU.



Lawrence Tech associate Professor C.J. Chung observes the scene during the university's first-ever robot parade.

The parade was intended to stimulate young minds and, possibly, to encourage them to compete in the World Robofest 2007 competition in April.

"And we wanted youngsters to have fun with robots," said Chung, "and to see what they could do."

Jasua Kimbrough, a senior at the Academy of Michigan in Royal Oak, was one of more than 30 youngsters to participate. His shoe-box sized robot, made from the science logo kit, was programmed to follow the 58-foot parade route while the top half waved the American and Canadian flags.

The challenge, he said, was to program the computer to perform on its own -- rather than being controlled remotely -- and to be able to stop when making contact with another object.

Doing so required advanced programming skills, according to Voletta Bonner, his adviser who teaches computer aided drafting at the Academy of Michigan.

While Kimbrough was pleased with his computer's ability and performance, he was also impressed with other floats. The diversity and flexibility was amazing, he said.

"One played music," he said, "another threw a ball. Some were big (3 feet tall), while another featured a moving Santa Claus."

Yet another, Bonner said, had a video camera to record the parade -- much like the Mars Rover might take pictures of the Red Planet.

Bonner said she enjoyed the flexibility and creativity reflected in the robots, she also enjoyed learning something.

"I got to see several different types of programming," she said. "And I had fun."

Observer & Eccentric
Nov. 2006

Robotics team excel at

Robofest championships

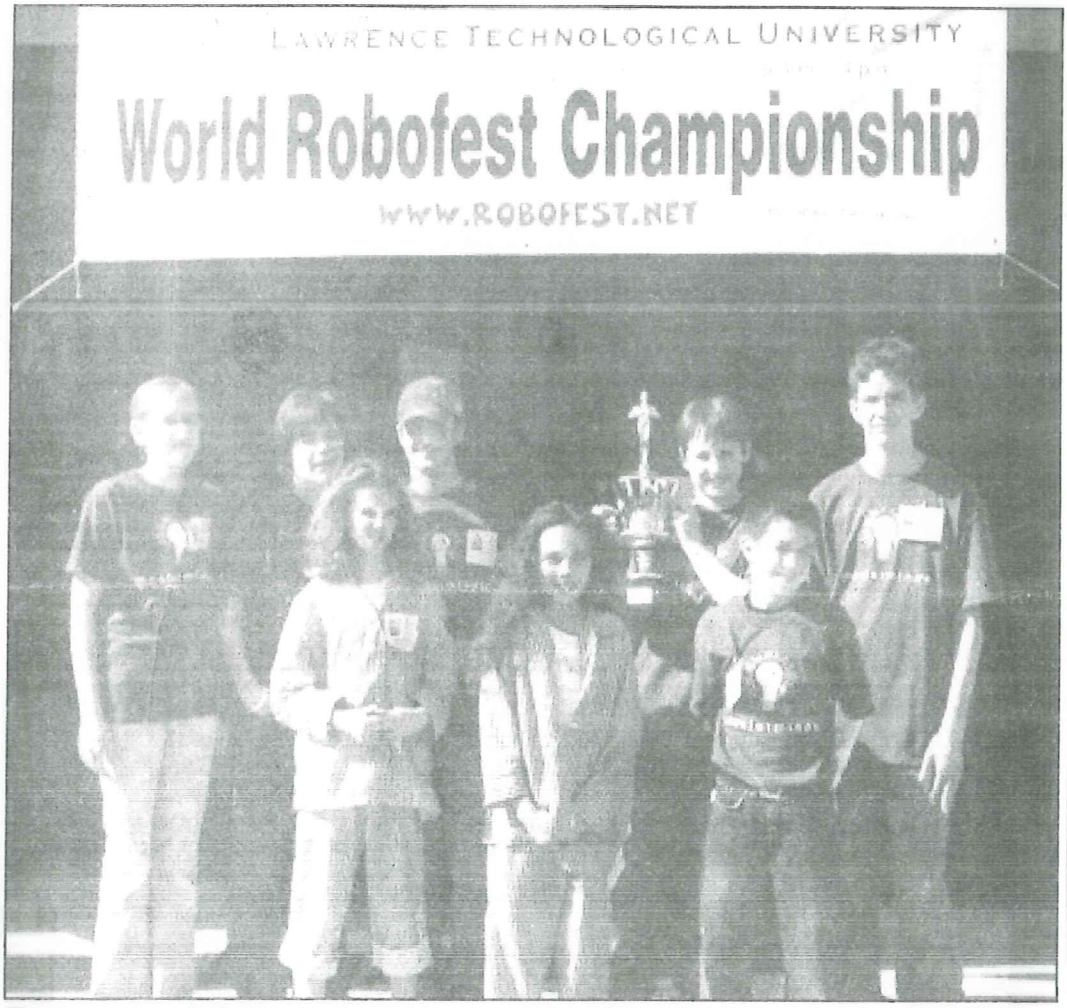
Three teams comprised of eight students from Huron Valley Schools competed in the World Robofest 2007 Championship at Lawrence Technological University in Southfield on April 28 after winning first place at qualifying tournaments earlier in the season.

"The dedication of these kids is so impressive ... relentlessly working on each robot until it is absolutely perfect," stated Jean DeClerck, who co-coached the teams with her husband Jim.

One of these teams, Masterminds Team 578, won first place in the World Junior Exhibition category for their fully-autonomous robotic airport. Team members were Jim Donahue (from Milford High School) as well as Deanna Brandell, James DeClerck and Kyle Niffin (students from Muir Middle School). Prizes included a LEGO NXT robotics kit for the team and renewable $2,000/year college scholarships to Lawrence Technological University for each team member.

"This marks the second renewable college scholarship won by Jim Donahue," added Jean DeClerck proudly. "He won with different Mastermind team members in the 2006 World Robofest Junior Exhibition competition."

Robofest is an international competition for students in grades 4 through 12. Robofest challenges participants to design, build and program autonomous robots to complete playful missions or exhibitions Young people have fun while learning computer programming, engineering, math and science. Started at Lawrence Technological University in 2000, Robofest has grown to include hundreds of students at venues in the United States and several other countries. Robofest hosted more than 100 teams at this year's



Three Masterminds teams recently competed in the World Robofest Championships after winning first place at qualifying tournaments. Participants included (from left) Deanna Brandell, Connor Welsh, Caroline Adams, Tyler Brock, Isabella Hilario, James DeClerck, Kyle Niffin and Jim Donahue. The exhibition team (with Jim Donahue, Kyle Niffin, Deanna Brandell and James DeClerck) won first place and college scholarships for their autonomous robotic airport at the event.

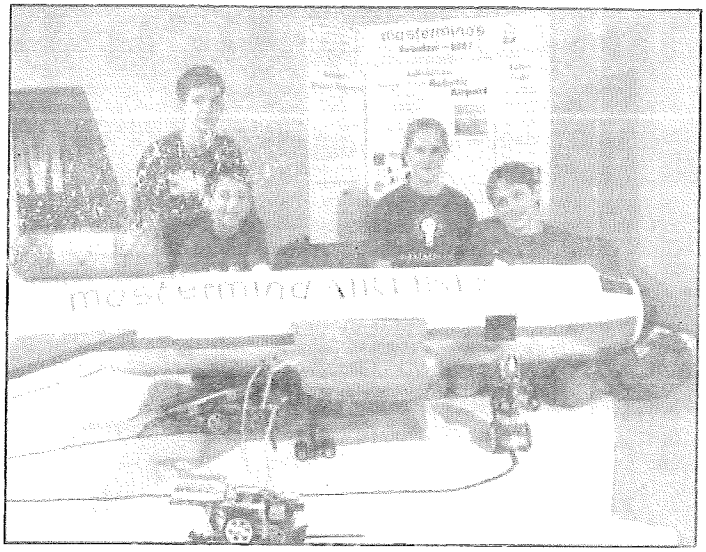
1/2

World Robofest 2007 Championship, some from countries as far away as South Korea. Teams competed in several categories, including Game, Exhibition, Fashion Show, Robosumo and Vex Pentathlon.

In addition to the Junior Exhibition team, two additional Milford teams competed at the World Robofest Championships. Masterminds Team 316, which included Muir Middle School seventh grader Tyler Brock and sixth grader Connor Welsh, competed in the Junior Game competition. In this category, two robots are built to perform missions on a playing board. At the competition, the team is given an unknown mission to solve before they can compete.

"I was so impressed with how these boys worked under pressure," said Jim DeClerck.

Team Carabella, which included fourth graders Caroline Adams and Isabella Hilario, charmed the crowd and did a great job representing Johnson Elementary in the Robo Fashion Show competition. The girls built and programmed robots dressed like lions in pajamas and choreographed them to move to the song, "The Lion Sleeps Tonight." This category is new to Robofest this year and is intended for students that are new to robotics.



The Masterminds Exhibition Team won first place and college scholarships for their autonomous robotic airport at the World Robofest Championships. Team members are (from left) Jim Donahue, Kyle Niffin, Deanna Brandell and James DeClerck. Additional Masterminds — Tyler Brock, Connor Welsh, Isabella Hilario and Caroline Adams — also competed and impressed judges at the event after winning first place at their qualifying tournaments.

Milford Times

5-17-2007

High-tech tussles test students' robotics skills

3-27-2007

By Kristofer Karol
DAILY PRESS & ARGUS

Two titans entered the sumo circle, each ready to display its dominance over the other.

After the required five seconds of dormancy to start the match, a robot from Forsythe Middle School in Ann Arbor charged at the creation erected by Whitmore Lake Middle School students.

In just moments, Whitmore Lake's robot was tasting gymnasium floor.

"Building's the real easy part of it," Forsythe seventh-grader Jonathon Ames said before the showdown. "Then you get into programming and testing, testing, testing."

On Saturday, nine junior teams and two senior teams had their robotic creations duke it out in RoboSumo — that's robot sumo wrestling, by the way.

Kensington Woods High School in Genoa Township served as the host, although the event was held at the Charyl Stockwell Academy in Hartland Township.

The top four junior teams and both senior teams earned invites to the World Robofest Champion-ship, an event featuring several different robotics-related competitions at Lawrence Technological University in Southfield, on April 28.

The rules of RoboSumo are simple: Each match starts with the roll of a die. If a one or two comes up, the robots face toward each other; a three or four means they face away; and a five or six means they start sideways.

Junior, or middle school, robots can weigh up to 1 kilogram, or 2.2 pounds. Senior, or high school, robots can weigh twice that at most. No remote controls are allowed, so it's all about programming and sensors.

"There is a lot of teamwork involved, planning and testing. It's like engineering," said David Coupland, a teacher and Robotics Club coach at Kensington Woods High School.

For example, Coupland and his students figured out the best way to make sure the weight was just right was by adding pennies.

"I went up to the bank teller and said 'I want one kilogram of pennies' and I got the longest stare," Coupland said.

RoboSumo is a pilot program for Robofest, which started in 2000 at Lawrence Tech. Five hundred teams in four countries in various events are trying to get to this year's fest.

Saturday's competition was the first time a regional qualifying event was held in the area.

"We're really excited at how quick it's growing," said Glen Bauer, associate dean of the university's College of Arts and Sciences.

Forsythe coach Jeffrey Lawther said he understands why the activity is so popular.

"It's an alternative for the kids that don't want to get into physical sports," Lawther said.

Contact Daily Press & Argus reporter Kristofer Karol at (517) 552-2835 or at kkarol@gannett.com.

Zoom Photo

Photo by ALAN WARD/DAILY PRESS & ARGUS

Contestants Leland Campbell of Team Slyder, left, and Tom Flores of the We Like Pi team prepare their robots for battle during the RoboSumo contest Saturday at Charyl Stockwell Academy in Hartland Township.

Zoom Photo

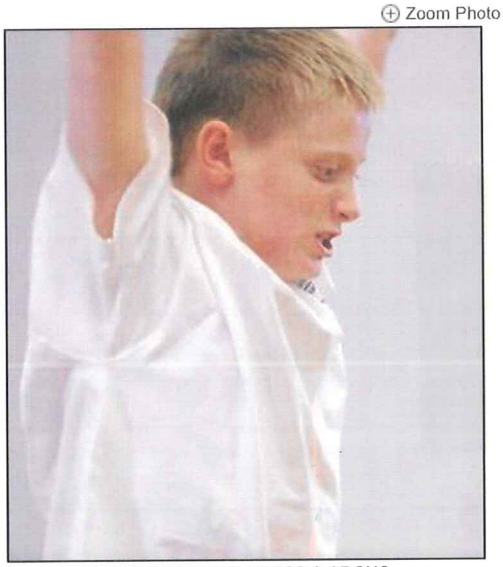


Photo by ALAN WARD/DAILY PRESS & ARGUS

Leland Campbell leaps from his chair in celebration as the Team Slyder robot pushes it's competitor from the competition ring.

Zoom Photo

Photo by ALAN WARD/DAILY PRESS & ARGUS

RoboSumo robots are pitted against each other in competition.

Detroit Free Press 7-29-07 (1/2)

A tech future at their fingertips

Lawrence Tech hosts a camp designed to get girls jazzed about math and computer science

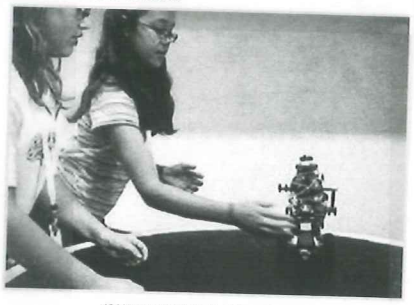
July 29, 2007

BY MELANIE D. SCOTT
FREE PRESS STAFF WRITER

In just 12 hours, 12-year-old Brielle Woods created a Web site that featured her favorite games, videos and music.

As she stood in front of a lecture hall at Lawrence Technological University in Southfield, Brielle talked about her Web site's features.

Click thumbnails to zoom



(SUSAN TUSA/Detroit Free Press)

At Camp Infinity, girls learn how to program robots, then plan a fashion show featuring those robots. Brenna Riley, left, of Novi and Anna Latos of Farmington Hills, both 12, test how their robot will perform.

Pictures of puppies and links to online games and music videos were just some of what Brielle and the 21 other girls in the lecture hall had put on their Web sites.

The girls learned about creating Web sites and other forms of technology at Camp Infinity, July 16-20 at the university.

The girls also learned how to program robots. They planned a fashion show featuring their robots after their Web site presentations July 20.

"I like working with computers," said Brielle, who attends Ludington Magnet Middle School in northwest Detroit. "I would like to be a computer engineer or do something in Web design."

For four years, Camp Infinity has been sponsored by the Michigan Council of Women in Technology Foundation and hosted by Lawrence Tech.

The program is open to girls only, in fourth through seventh grades, who live in Oakland, Macomb and Wayne counties. It is free to the girls and is paid for by corporate sponsors. This year's program was paid for by a $34,000 grant from AT&T.

"This camp has two objectives," said Rosemary Bayer, president of the technology foundation. "The first is, you can do it and it's fun."

The second objective is that the girls pursue careers in the technology industry, where women are underrepresented. "The Michigan Council of Women in Technology started because there are very few women in the field," Bayer said. "I work for Sun Microsystems (in Southfield), and I looked around one day and realized I was the only woman there. We realized we needed to get more girls motivated and inspired about math and computer science."

Targeting 4th-7th grades

Camp Infinity targets girls between fourth and seventh grades because studies show that a girl's interest in math, science and technology drops off at the middle school level, Bayer said.

"Once they get to high school, it's too late," Bayer said. "We go for the younger girls so when they get to high school, they will still think learning about math or science is cool."

Camp Infinity is split into two sections: fourth- and fifth- graders, and sixth- and seventh-graders.

This year, a total of 44 girls participated.

The section for fourth and fifth grades focuses on getting the girls to think about fun activities that use math and computer science. The girls spend time creating video games.

The section for the older girls is centered on expanding their knowledge of computer science. They program robots and create Web sites.

"The Web page designing part was the best because I can use it outside of camp," said 11-year-old Kendall Hancock, who lives in New Baltimore and attends Anchor Bay Middle School North.

Many of the girls in the older section, including Kendall and Brielle, first attended the camp when they were in the fourth or fifth grade.

"We got Brielle involved last year because she likes computers," said her mom, Markisa Woods, 39, of Detroit. "She comes home talking about the camp all the time and what she's learned. She's so motivated at home. She comes home and wants to go straight for the computer. She got a book about computers from camp and she reads it and tests thing out."

Detroit Free Press 7-29-07 (2/2)

Hands-on learning

At the beginning of Camp Infinity, girls are given a laptop computer to use for the week. This helps the girls learn hands-on.

"The girls tend to watch for a while, and then they jump right in," Bayer said. "They work in teams, and girls tend to work well in teams. We want them to be free to be creative and try their own things. We want them to know they can do it."

The girls also spend lunchtime learning about the information technology industry from women who are in the field. The girls have the opportunity to ask the professionals questions and discuss options for their future.

"We try to get professional speakers who are in technology and love what they do," Bayer said.

One was Susan Daniels, vice president and assistant secretary-treasurer of Leader Dogs for the Blind.

"They learned they can do something fun like work with dogs and still be in technology," Bayer said.

The opportunity to speak with professionals in the industry was the best part for some of the girls.

"I like to talk to people at lunch because they give us a lot of information," Kendall said.

Fashion show finale

Toward the end of camp, the girls designed outfits for their robots in anticipation of the robotics fashion show.

The girls had to program the robots to walk down a small runway. The robots had to perform tricks that included moving their arms, spinning in a circle or going backward, or a combination of all.

Each robot also had four sensors that helped it detect sound, light and touch.

At the end of the Web site presentations, the girls stood in groups of two and demonstrated how their robots worked.

With names such as Chef Parmesan and R2D2's Girlfriend, the robots took on a life of their own as they shimmied down the runway to songs including "Hey Ya" by OutKast and "Umbrella" by Rihanna.

"The girls did a really good job with the robots," said CJ Chung, an associate professor in the department of math and computer science at Lawrence Tech. "They learned quite a bit in a short amount of time."

As the girls stood around the runway, they waved their hands in front of the sensors or clapped to get their robots to do tricks.

"I love working with the robots and doing the fashion show," said 11-year-old Kierra Adams, who lives in Detroit and attends Bates Academy. "It's fun making the robot do what you want and making its clothes."

She has learned a lot about technology and enjoys math and science in school.

"Kierra is pretty excited about camp, and I'm pretty impressed with the level of detail this program has," said her mom, Devonna Adams, 34. "By the end of camp, the kids have skills that are way above their grade level."

Camp criteria

Each April, applications for the program are available to download from the Michigan Council of Women in Technology's Web site, mcwtf.org.

Although the program is limited to 22 girls in each section, more than that apply. This year, Camp Infinity had a waiting list of about 60 girls.

"We don't advertise, so it's really word of mouth," Bayer said. "We want to try to work with other groups and teach them how to do this so we can have more camps around the area."

Selection is based on criteria such as age, grade in school and knowledge of computers, and is on a first-come, first-served basis, Bayer said.

"I wanted my daughter involved because this is a good program," said Brielle's mom. "It's good because of all the companies and sponsors that participate. I like the networking aspect and that it promotes more women getting involved in technology."

*Contact **MELANIE D. SCOTT** at 248-351-3681 or mdscott@freepress.com.*