FIRST Robotics returns to RIT

Robot creations, teams will face off March 7-8

The Gordon Field House and Activities Center will again echo with loud, pulsing music, exuberant cheers and grinding gears as 40 teams from across the Northeast United States and Canada compete for the title of Finger Lakes Region Robotics Champions. For the fourth consecutive year, RIT will host the annual Finger Lakes Regional FIRST—For Inspiration and Recognition of Science and Technology—Robotics Competition, March 7-8.

Each year high school robotics teams are presented with a new game and a new set of rules, requiring them to devise a unique robot that will address the competition's task. This year's game, Overdrive, challenges teams to maneuver their robots around a rectangular track to complete laps while pushing large, mounted 'teardrop-shaped' targets. Teams accumulate points by moving the trackballs under or over an 'overpass' that bisects the track.

New to this year's competition will be a team from Rochester's Nazareth Academy, winners of the Rookie Award at January's Rochester Regional FIRST, a kickoff competition. The 12 Nazareth Academy students have partnered with 13 female mentors from Xerox Corp., comprising the first all-female student team in the Finger Lakes region.

The addition of a robotics team is a natural extension of education at Nazareth Academy, which focuses on STEM—science, technology, engineering and mathematics—initiatives in the classroom. This allows students to pursue opportunities in areas of study where they have not been traditionally guided. Through their involvement with FIRST Robotics, the students gain valuable hands-on experience in addition to their education in the classroom.

Innovation and Sustainability to Help Local Homeless

Each issue of News & Events will feature a project to be showcased at Imagine RIT: Innovation and Creativity Festival on May 3. This week's spotlight:

Exposure to toxic pollutants: How does your community rank?

Presenters: Brid Gleeson Hanna, Daniel Hatch and Christopher Lominac, Nazareth Academy

Hanna is a faculty member and Hatch and Lominac are students in the College of Liberal Arts.

Brief description: The study developed a measure of a community’s exposure to toxic emissions from EPA-regulated industries. A ranking system allowed them to see how a community’s exposure value ranks relative to all other communities in New York state, relative to all other communities with a similar average income with a similar industrial structure. The analysis will allow them to examine how exposure to toxic pollutants correlates with socio-economic characteristics of communities.

How is the exhibit creative and/or innovative: The measure of pollution exposure takes into account distance from the pollution source and meteorological conditions such as wind speed and wind direction. It also factors in differences in the toxicity of the various chemicals emitted by industries. The measure is based upon a model of air pollution dispersion that is used in environmental science. The aim is to provide information on industrial pollution in a clearer manner than is currently presented, and to present it in a manner that is more meaningful to residents.

Exhibit experience for visitors: Results will be presented in the form of a set of maps allowing visitors to see how pollution varies over space and across income levels. The group is also building a database that will allow visitors to type in their zip code of residence and view a pollution exposure figure for that zip code with an explanation of what that figure means.

For more information on the Innovation and Creativity Festival, visit www.rit.edu/imagine.

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Student Spotlight

"Failure is impossible!" That famous quote from Susan B. Anthony is what inspires Jasmine Oregel to achieve her goals. "I want to be successful," she says. And she’s well on her way. Born in California, her family moved to Mexico before returning back to California when she was 3 years old. Her parents felt their five children would have better opportunities in the United States, especially for the three siblings, including Jasmine, who were deaf.

Now 12, Oregel is about to graduate from RIT/NTID with an associate degree in computer-aided drafting technology.

"I said, ‘Wow, that girl can do that already? She’s only 14. I want that,’” Oregel says. She told her father she wanted to go to college and become a Student Spotlight, page 4

NTID student engineers a promising future

"I don’t think that something I helped create would be considered so meaningful to the growth and vitality of our industry. And to be able to share it with my very good friends from Kodak made for a memorable evening, I think that something I helped create would be considered so meaningful to the growth and vitality of our industry. And to be able to share it with my very good friends from Kodak made for a memorable evening, one I’ll definitely never forget." Long's roles as an imaging scientist on VISION 2 were understanding the physics of such components as color reproduction, light capture and image aesthetics and designing the photographic behaviors of the films so that images are reproduced the way a cinematographer wants.

The photograph of the famous person is on the front page of the newspaper. The headline reads: "Jasmine Oregel surprised her parents when she announced she wanted to study engineering and computer-aided drafting. And she proved to her classmates that girls could do just as well as boys could. She's only 14. I want that,” said Oregel. She told her father she wanted to go to college and become a student engineer. She graduated with a bachelor's degree in packaging science and mechanical engineering.

Long, who earned his bachelor's degree in chemical engineering and a master's degree in materials science, had come to love working in the motion-picture industry and wanted to steer his career toward academia.

"My grandfather was a chemist who worked in poultry science and researched food-borne pathogens and diseases for Campbell's Soup Co. and others for many years. When he retired, he began working with the poultry science department at the University of Arkansas. He loved the academic environment and his work, page 4

David Long, program chair of the digital cinema degree in RIT’s School of Film and Animation, is an Academy Award winner. The Academy of Motion Picture Arts and Sciences honored Long, a former imaging scientist at Eastman Kodak Co., and three other Kodak employees for their work on Kodak's VISION 2 family of color negative films, the current standard in the movie industry.

Kodak chairman and CEO Antonio Perez accepted the Oscar on behalf of the entire team, which was in attendance in Hollywood for the Feb. 9 ceremony. Actress Jessica Alba was the mistress of ceremonies. A taped portion of the Scientific and Technical Awards ceremony will air during the Feb. 24 live telecast of the Academy Awards.

"To be recognized by the Academy for this work is an incredible honor," says Lang. "So many fantastic technologies and so many impressive engineers and scientists have been a part of this tradition. It's very humbling to think that something I helped create would be considered so meaningful to the growth and vitality of our industry. And to be able to share it with my very good friends from Kodak made for a memorable evening, I think that something I helped create would be considered so meaningful to the growth and vitality of our industry. And to be able to share it with my very good friends from Kodak made for a memorable evening, one I’ll definitely never forget.” Long's roles as an imaging scientist on VISION 2 were understanding the physics of such components as color reproduction, light capture and image aesthetics and designing the photographic behaviors of the films so that images are reproduced the way a cinematographer wants.

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Kodak VISION 2 Team honored with Academy Award. From left to right are: Millyarrye, Pat Jeffries, Antonio Perez, Jim Friday and RIT’s David Long.
RIT Community supports St. Jude’s

Organizers of the annual Up ’n’ Dawn fundraising campaign have been busy drumming up support in recent weeks. They even used a walking box to recruit the RIT community to participate in its letter-writing campaign. Feb. 8, in which participants asked friends and family members to donate to St. Jude’s Children’s Hospital. More than 2,500 letters were written. Above, applied mathematics graduate student Justin Black (sports) the box and teams with professional studies graduate student Carol Callesano to solicit support on the Quarter Mile. To participate, visit www.rit.edu/upndawn for more information.

RIT to host photojournalism experts

A serve by Sebastien Grosjean of France at the 2007 U.S. Open. All workshops and presentations will be held at the Hyatt Regency Rochester on East Main Street in Rochester. To register for the conference and see a complete list of the speakers and sessions, visit www.northernshortcourse.com.

While the term “sustainability” is often used to define efforts to improve the environment, there is a growing understanding of the need for sustainable development in numerous cultural and societal areas. This concept includes addressing acute social issues such as homelessness and the services available to this population.

According to the Alliance to End Homelessness, more than 700,000 Americans were homeless in 2007, 41 percent of which were families. In Rochester, the U.S. Department of Housing and Urban Development estimates there are more than 3,000 families who are considered homeless, less than 400 with children.

Within the past several years, a group of RIT students came together to form a local chapter of Engineers for a Sustainable World for a Sustainable World with the goal of promoting the social and environmental aspects of sustainability in the Rochester region and communities around the globe.

One of the group’s central programs has been a partnership with Rochester St. Joseph’s homeless shelter. The group volunteers weekly at the shelter, assisting with their daily meal program, which serves more than 300, each day, as well as cooking evening meals for the organization’s 12 residents. Students are also preparing an energy audit for the shelter’s facilities to reduce energy use and lower heating and electricity costs.

“The assistance of RIT has been incredibly helpful in enhancing the services we can provide,” adds Ralph Hemmerich of St. Joseph’s. “We have a small staff and limited resources so the assistance with meals as well as the group’s work with energy efficiency has helped us better address the needs of the homeless population.”

The group originally found out about the work of the shelter through Sarah Brown, a graduate of RIT’s mechanical engineering program, who now works for the organization. They have also received assistance from faculty advisors Brian Thorn and Andres Carrano, who are helping to conduct the energy audit and providing ideas for additional energy efficiency and cost reduction opportunities.

“This group of students has worked very hard to provide quality assistance to St. Joseph’s at a time when most are also taking classes and working full- or part-time jobs,” says Thorn. “Their dedication exemplifies the best aspects of social sustainability and the impact it can have on communities.”

A. Sue Weisler | photographer

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The road most traveled
by Midge Berfield

A i finish up my first month here at RIT as manager of an employee health and wellness program, being the road most traveled by Midge Berfield employee wellness initiative, what amazes me most are the wonderful facilities and resources that RIT has to offer its employees. Resources that serve as an employee benefit are available right at our fingertips. A state-of-the-art fitness center, personal trainers, rock-climbing facility, outdoor nature trails and extensive educational programming are all available through the Center for Professional Development. It’s evident that we have a solid foundation upon which to build an outstanding employee wellness program.

A registered nurse by trade, I have always been passionate about instilling a state of health and wellness in myself and my family. In fact, I am now focused on helping to instill a ‘culture of wellness’ within our community. The ‘Better Me’ Employee Wellness Program was launched in October as a proactive approach to demonstrate our commitment to all employees by enhancing their quality of life. This is accomplished by encouraging each one of us at RIT to realize the potential and the power that we have in positively affecting our health. This is often the road less traveled for some, while others have chosen this as their road of choice.

The ‘Better Me’ program currently offers fitness classes specifically for faculty and staff (yoga, pilates, kickboxing, spinning, Zumba), personal training services (individual and group) as well as additional programming such as Weight Watchers on campus and the annual Eat Well Live Well Challenge. Efforts are currently underway to enhance the programming that is offered to staff and faculty in order to meet their individual needs and interests of our employees in response to the results of an employee interest survey conducted last fall.

The 2008 Eat Well Live Well Challenge is set to launch March 16, with a kick-off planned from 3:30 to 4:30 p.m. March 13 in Freihofer Lounge, Student Alumni Union. All employees planning to participate are encouraged to attend. Weekly walks are planned during the eight-week challenge at the Gordon Field House and Activities Center from noon to 1 p.m. with a Mid-Challenge Celebration set for April 9 in the Field House Reception Room starting at 12:30 p.m., following the weekly walk.

This walk will be led by one of the Better Me personal trainers, Joe Delgado. We are so excited about these activities and hope everyone will help to support these efforts and, of course, help root for their team. For more information about specific events, please visit the Better Me Web site at www.rit.edu/betterm.

As I reflect upon my short time at RIT and look forward to the bright future and all the exciting things to come for the RIT community, I cannot help but to imagine I can imagine an RIT where everyone chooses the road to health and wellness and makes it the road most traveled.

New image archival research helps preserve contents of delicate documents

The products of research can branch off in many directions and provide a host of benefits to students, universities and the broader community. At RIT, there has long been a focus of developing research that can easily be applied to real-world problems. The latest example is the NanoArk, a Rochester-based company NanoArk Corp. NanoArk is an image archival firm created by P.R. Mukund, Clarence Professor of Electrical Engineering; Roger Easton, professor of imaging science; and Ajay Passupuleti, a graduate of RIT’s doctoral program in microsystems engineering.

Passupuleti developed a method for storing documents on silicon wafers as a replacement for standard microfilm and microfiche technologies. This methodology is currently patent pending. He first worked with Easton and Stuart to store images they had created through a research effort involving the digitization of ancient manuscripts.

“We used the process to store the manuscript images and then transfer them back to paper,” says Mukund. “Hindu scholars and students,” notes Mukund. “The technology proved to be incredibly durable and much more adaptable than traditional microfilm or fiche.”

The project was so successful that the trio, along with Mike Toth, who recently retired from U.S. government service, decided to form a company to develop a mass-produced version of the system, including the wipers themselves, a process for archiving the information and a reader for studying the stored documents. The resulting technology is considerably more durable than standard microfilm. The Image Permanence Institute at RIT has estimated the wipers longevity at more than 500 years. In addition, the document reader allows for searching and magnification capabilities that greatly enhance image examination.

NanoArk has obtained first-level funding from angel investors and has developed a working prototype. The company is currently in the product-development phase with the hope of offering its initial products for sale this summer. NanoArk is also working with several local companies, including Advanced Document Imaging, which provides imaging analysis for the U.S. Census Bureau.

A. Sue Weisler | photographer

More adaptable than traditional microfilm...
Students from Fyle Elementary School in Henrietta were delighted to receive new books for the school’s library. RIT faculty and staff from the computer science department’s S.O.A.R. (Student Outreach, Recruitment and Retention) Committee presented the books and a check to the school on Feb. 15. The committee raised $700 by selling candy bars and collecting donations and books from the entire B. Thomas Golisano College of Computing and Information Sciences. Fyle Elementary will use the money to purchase a series of books about the sciences.

**Awards**

enthusiasm really inspired me to pursue a career in academia myself, but I hadn’t found that niche until this opportunity at RIT came along.

The B.S. degree program in digital cinema is in its infancy, with 16 students enrolled in the program. Students immerse themselves in three core courses of filmmaking, the fundamentals of imaging science and the technologies of motion picture that bring them all together.

**Obituaries**

Railolph Armstrong, RIT’s first men’s lacrosse coach, Jan. 10.

Robert Brown, professor emeritus, political science department, Feb. 12.

Neil Croom, former professor, School of Photographic Arts and Sciences, Jan. 27.

Heinrich Klinkton, associate professor, graphic design department, Jan. 27.

Elaine Merritt, staff assistant, psychology department, Feb. 13.

Jane Parshall, retiree, Facilities Management Services, Jan. 8.

**Student Spotlight**

**from page 1**

engineer. “My dad laughed at me. I told him I could,” she says.

Her close-knit family didn’t want her to go to school so far from home but Oregel squarely applied to RIT/NTID and was accepted. To help pay for college, Oregel received a scholarship from the Max Factor Family Foundation, which helps underserved students in the Los Angeles area to go to college. She became the first in her family to go to college out of state.

But once school began, she found herself struggling in class. “It was hard for me.”

To compound matters, she says the other students in her class—six boys—thought they were better than the girls. Oregel eventually considered dropping out of her manufacturing courses and going shopping.

“In the beginning, it was a struggle for her,” says her teacher, Marcus Holmes, a lecturer in the engineering studies program. But Oregel credits Holmes for encouraging her to continue.

“I saw the potential in her,” Holmes says. “I told her if she had a goal, to go for it. And she did. And she would study and persist, and the better she would become. So she started seeing me more and asking questions and participating more in class.”

Oregel’s class projects included designing a machine gun, a bicycle and an automation machine, complete with conveyer belt and robot arm.

“She worked to become the strongest student in the whole class,” Holmes says. “When I asked a question, she always would be the first hand up. I told her to give other people a chance. She came a long way and fought her way up. I think she has a bright future. She’s ready for the working environment and she has the skills and knowledge for the job.”

And, Holmes says, he knows she is a good role model for other girls wanting to join the male-dominated field of engineering.

Oregel plans to pursue her bachelor’s degree in packaging science or mechanical engineering; her job would be working for an automotive manufacturer in California or Hawaii.

Oregel belongs to the Alpha Sigma Tau sorority, where she served as vice president. And she enjoys playing softball, basketball and paintball and going shopping.

She still misses her family in California, but keeps in touch with them daily via video phone. And the attitude among her peers has warmed up. “A lot of the boys have respect for me now,” she says. **Gogi Laskari | gogi@rit.edu**

**First from page 1**

“First” provides the young women in our programs with exposure to technology and allows them to explore whether or not it’s an area they want to continue pursuing, says Mary Zawars, a team mentor from Xerox.

Within the team, many real-life processes and jobs are addressed, taking students through the stages of production on their robot, TTVA, and with the design of T-shirts, buttons and other apparel, which has become an essential part of FIRST competition.

“Whether they’re working on the robotics team or advertising, FIRST provides a great avenue to develop leadership skills,” says Laura Gianatos, a team mentor from Xerox.

Winners of the regional event will advance to the National Competition, April 17-19, at Atlanta’s Georgia Dome.

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NanArk

to develop additional business opportunities.

The company is currently housed in RIT’s Venture Creation business incubator on the campus and hopes to expand and the incubator staff to further develop their business plan and seek out potential clients.

“NanArk has a very interesting product that has strong market potential,” says Jerry May, director of Venture Creation.

“We are very proud of their initial success and proud to come to their business future in the future.”

Mukand believes the firm’s success not only enhances the Rochester economy but also continues to provide benefits to RIT faculty and students. NanArk has utilized a number of co-ops and internships on various projects and worked with the Kate Gleason College of Engineering and the Center for Imaging Science to enhance their technology development.

Mukand also notes that the company recognizes the tremendous assistance received from so many in the RIT community and NanArk is committed to giving back. So far, the firm has donated more than $75,000 to different research programs and plans on providing additional assistance in the future. **Mirel Dole | mirel@polylab.org**

Margaret Bailey, the Kate Gleason Endowed Chair in the Kate Gleason College of Engineering, notes that Oregel’s success in research and teaching, giving the presentation “Using the experiential learning model and course assessment to transform a multidisciplinary senior design course sequence” at the 2007 Annual Conference of the American Society for Engineering Education.

Mark Coleman, senior program manager with the Gelosio Institute for Sustainability, gave the presentation, “Giving competitive advantage and new growth from emerging opportunities in sustainable and renewable energy” at the annual meeting of the Upstate New York Toilng and Machining Association in November.

Andrew Davidiav, professor of imaging and photographic technology, has a solo photography exhibition at the University of the Pacific in Lima, Peru. For the exhibition opening in November, Davidiav made a virtual visit to the reception thanks to the Internet.

Roger Gabori, professor of computer science, presented the paper “Biologically Inspired Object Categorization as Cluttered Scenes” at the Applied Image Pattern Recognition Annual Workshop in Washington, D.C.

Edith Hemaspaandra, professor of computer science, was awarded a Friedrich Wilhelm Bessel Research Award by the Humboldt Foundation in recognition of her accomplishments in theory and teaching.

Kathryn Howard, an environmental health and safety specialist at the Center for Integrated Manufacturing Studies, had her article, “Operated by enlightenment: RIT students team up with visually impaired workers to ensure safety,” published in the November issue of Industrial Engineer, the national publication of the Institute for Industrial Engineering.

Trudy Howles, professor of computer science, presented the paper “Work in Progress: Assessment of Creativity and Active Learning Study” at the 2007 IEEE Frontier in Education Conference in Milwaukee.

William Johnson Jr., distinguished professor of public policy and urban studies, is a member of the board of directors that makes up the New York State Commission on Government Efficiency and Effectiveness, which was appointed by Gov. Spitzer to identify ways to streamline the state’s network of more than 4,200 units of local government.

Dhirawas Kudithipudi, assistant professor of computer engineering, presented “On the Exploration and Optimization of Leakage Power in CMOS Multiplexer” and “Minimum Leakage Vector Pattern Estimation” at the Institute for Electrical and Electronics Engineer’s Midwest Symposium on Circuits and Systems, in August, in Montreal.

Michael Küh, associate professor of industrial and systems engineering, had a paper he co-authored, “Organizational Transplantation Policy Evaluation,” selected as a landmark paper in system simulation in honor of the 40th anniversary of the Winter Simulation Conference. Küh’s paper was originally published in the Proceedings of the 1993 Winter Simulation Conference and was one of only 10 selected.

The Winter Simulation Conference is an annual international symposium sponsored in part by the National Institute for Standards and Technology and the Institute for Industrial Engineers.

Santosh Kurinec, professor and department head of microelectronic engineering, gave the presentation, CMOS and Nanotechnology Convergence: The Role of Aca- demics in The Development of the Nanoscale Science and Engineering Center’s 2007 seminar series. The center is a joint effort of Columbia University and the National Science Foundation Center for Electron Transport in Molecular Nanosystems.

Davor Ljudmijic, professor of philosophy at American College of Management and Technology, recently presented a paper “Posidon in Delphi,” at a philosophy conference in Pelusa, Croatia.

Robert Manning, research professor and director of consumer financial services in the E. Philip Saunders College of Business, has been named a Filene Research Fel- low at the FirstLine Research Institute in Madison, Wis. The non-profit organization is dedicated to analysis about the future of consumer finance and credit unions, and emerging payment issues.

Jennifer Matic presented a paper titled “Participative Management and Orga- nizational Success” at the Enterprise in Transition conference organized by the University of Thessaly, Greece.

Thomas Moran, associate professor in the Center for Multidisciplinary Studies, and Jeffrey Wagner, associate professor of economics, co-authored and presented a paper titled “Unlikely Partners—An Experiment in Multi-disciplinary Classroom Experiences” at the Engineering, Teaching and Learning Practices 2007 Conference in Toronto.

**Newsmakers**

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