When a drop of water or piece of debris lands on a lotus leaf it would appear to the naked eye that nothing unusual was occurring. However, if you were to look under a microscope, the surface of the leaf appears to spring into action. Thousands of tiny micro hairs that remove the water or debris from the plant, acting as a defense mechanism to keep the surface clean. The process is incredibly efficient, uses little energy and is mimicked by countless animal and plant species.

Now engineers at RIT are taking inspiration from this natural occurrence to create new nano structures that will improve the performance of a host of micro devices.

The research team is attempting to create nano fibers that can be placed in the micro- and nano-channels of microsystems, which are used to transfer fluid in these devices and are key components in the systems operation.

Much like the surface of a lotus leaf, the technology will be used to passively remove particles that can build up on channel surfaces. The phenomenon, known as fouling, can contaminate experiments and reduce the efficiency of these devices.

"Fouling is a major impediment to the improvement of microsystem performance and efficiency," notes Yu-Wen Lu, assistant professor of microsystems engineering at RIT and principal investigator on the project. "Through the development of this technology we hope to create a mechanism that passively removes these particles efficiently with little energy expenditure."

Graduate students Yusuke Takahashi and Zhonghua Yao are currently working with Lu to design and test a nano fiber structure and hope to ultimately develop a mechanism with self-cleaning and anti-fouling capabilities that can be incorporated into numerous types of micro devices.

"This research seeks to enhance understanding of the fouling phenomenon while also developing a structure and fabrication method to solve the problem," adds Lu.

"The findings will assist in guiding additional research and enhance commercialization opportunities for anti-fouling mechanisms in biomedical applications." The project is in collaboration with San Francisco State University and is being funded through a grant from the National Science Foundation.

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RIT students ‘jam’ to help the hungry

A familiar face on campus is Katherine “Kat” Springate, who works as a recreation attendant in RIT’s Vito A. Halsey-Andrews Student Life Center. At her “home away from home,” she’s also an avid track and cross-country runner, one of nearly 600 student athletes who participate in some of the 24 varsity sports at RIT.

Springate is a mid-distance runner and one of her events in track and field is the 400 hurdles—which, in a way, is a reflection of how she lives her life.

She doesn’t believe in hurdles, especially in her resolve for achieving academic excellence as an accounting major with a minor in management information systems in RIT’s A. Sue Weisler College of Business. Springate also believes the strength and resolve that make her a successful athlete, help her maintain focus on class requirements—earning a 3.92 GPA.

“I run every day, year round, and it keeps me balanced,” says Springate, who has achieved state qualifier status in indoor and outdoor track each year at RIT. “And I credit the endorphins for keeping me awake in the classroom.”

Springate hails from Amherst, N.Y., and attended Williamsville North High School before applying early decision to RIT. “This was the only school I wanted to go to because it’s fast-paced and I liked the co-op program,” she says.

At the Saunders College, she has completed her master’s degree in information systems in RIT’s A. Sue Weisler College of Business. Springate also believes the strength and resolve that make her a successful athlete, help her maintain focus on class requirements—earning a 3.92 GPA.

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Kernels of creativity lead to new concepts for popcorn packaging

Going to the movies isn’t the same without popcorn. Fresh, innovative ideas on packaging the buttery treat topped for a class of RIT graphic design students. The industrial design and industrial design students. The top designs went up for a vote before morose gamers at the Little Theatre on the evening of Nov. 7. A Little Theatre marquee-inspired package design created by Michael Rodriguez, a fourth-year graphic design student, received the most votes.

“Winning the contest is such a great feeling, especially being a sophomore. It redefines my design approach solutions work for the consumer,” says Rodriguez. “The Little Theatre is one of my favorite places to go in Rochester, so I felt a certain connection with this project. The theatre’s marquee is a Rochester landmark, so I thought why not incorporate it into my design. The package shape is inspired from the individual sections of the marquee. I found the theatre’s history quite interesting, so I put facts on the top lip of the package. This gives the consumer a deeper sense of the theatre’s identity.”

Rodriguez’s design features a lip with supporting information on the top for the next box to be stacked above it. The industrial students were Fawn Poloskin, Garret Voorhees, April Woodruff and Laura Woodruff, the other graphic design students whose package designs were on display. The industrial students were Fawn Poloskin, Garret Voorhees, April Woodruff and Laura Woodruff.

The Graphic Design Archive features over 30 existing graphic design collections of Modernist American graphic design pioneers such as Lester Beall, Will Burtin, Cipe Pineles, and Lella Vignelli.

Remington inducted into Art Directors hall of fame

The impressive list of inductees into the Art Directors Club Hall of Fame throughout the past 35 years includes such luminaries as Walt Disney, Andy Warhol, Saul Bass and Paul Rand. R. Roger Remington, the Massimo and Lella Vignelli Distinguished Professor of Design at RIT, is among the inductees of the Art Directors Club Hall of Fame.

Representing the fields of advertising, design, architecture, filmmaking, illustration, academia and photography, recipients were honored at a gala event Nov. 6 in New York City. The club, the longest-running global creative collective of its kind and the premier organization for integrated media, established the hall of fame in 1971 to recognize professionals in visual arts and communications. To view a complete list of inductees, visit www.adclubglobal.org/archive/hof.

“IT is humbling yet difficult to be objective about this honor because suddenly one is grouped with one’s heroes,” says Remington. “In the design profession this honor is comparable with the Nobel Prize.” Remington has critical interests in design studies, research, writing and graphic design practice. Since 1982 he has been engaged in the research, interpretation and preservation of the history of graphic design. He was the lead developer in establishing the Graphic Design Archive and the Vignelli Center for Design at RIT. The Graphic Design Archive features the inductees of the Art Directors Hall of Fame.


Italian-American fascism scrutinized

It has been previ- ously theorized that a number of American fascist historians that Italian-Americans in the 1920s were aligned with fascism. But Nazzaro sought the overthrow of democracy in the United States. However, new research by RIT professor Pellegrino Nazzaro paints a different picture of fascist organiza- tion in America. Nazzaro’s new book, Fascist and Anti-Fascist Propaganda in America: The Deputies of Italian Ambassador Giglioli Carraro, debunks the persistent American myth that Italian-American fascist organizations were politically inclined and posed as conspiratorial political bodies.

Nazzaro, professor of European history at RIT, says: “Fascism in the United States was beset by internal factionalism, personal feuds, conflicts and frequent clashes with strong and well-organized anti- fascist elements.” It never emerged as a political ideology capable of creating an alternative to American Democracy.”

R. Roger Remington has been inducted into the Art Directors Club Hall of Fame.

It’s a celebration

In recognition of a $1 million endowment from the Bernard Osher Foun- dation, Other Lifelong Learning Institute hosted the Other Endowment Celebration Oct. 24 at Rivers Run Living Community. Chairperson Peter Luce officiated at a cake-cutting ceremony, and Other members were invited to take a sneak peak at their new classroom facilities that will open in spring.

Italian-American fascism scrutinized

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The New York Times, writes: “After a recent spat of graphic designer biog- raphies, this detailed monograph is definitely overdue. Burtin virtually forgotten work, like the exhibition ‘Metabolism—the Cycle of Life,’ prefigures the interaction design practiced today on the Web and reveals just how entertaining well-articulated graphic and exhibition design about science can be.”
Security practices for desktop and laptop computers

by Jonathan Maurer and Ben Woelk

RIT earns $2.8 million to design parts for super telescope

The Gordon and Betty Moore Foundation recently awarded RIT $2.8 million to design, develop, and build a zero-noise detector for the Thirty Meter Telescope. Expected to be operational in the next decade, the telescope’s light-collecting power will be 10 times that of the largest telescopes now in operation.

The detector’s new sensing technology promises to generate the darkness of space with the greatest sensitivity ever. It could also have applications on Earth to improve everything from cell phone cameras to secure communications and surveillance systems.

RIT scientist Donald Figer will lead the project.

Imaging sensors produce their own dark noise, or random events that degrade images, especially under low-light conditions. The noise can sometimes be seen as the grainy, salt and pepper effect that you see on pictures snapped in a dark room.

In applications like astrophysics, that noise can be as much as a million to design parts for super telescope

The financial crisis on Wall Street has hit home for many Americans, but not everyone. For RIT student Michael Riordan, who recently graduated, the financial crisis has hit home because he works in the financial services industry. “At every firm we visited, the discussion tended to gravitate towards derivatives and credit risky conditions. The financial crisis on Wall Street has hit home for many Americans, but not everyone. For RIT student Michael Riordan, who recently graduated, the financial crisis has hit home because he works in the financial services industry. “At every firm we visited, the discussion tended to gravitate towards derivatives and credit risky conditions. Riordan, a nationally recognized expert in color management and workflow systems, teaches graduate and undergraduate coursework in all areas of color, premedia and publishing.

The award is unique in that only students receiving scholarships are invited to nominate candidates,” says Ted Ringman, vice president of development at Print and Graphics Scholarship Foundation. “Students nominate educators that have had a significant impact on their education and, in many cases, their lives. Professor Riordan brings a fresh approach to all of his classes. He challenges his students with the latest technology, and the students respond with high degree of respect for all that Professor Riordan brings to the classroom.”

Wall Street visit takes students inside America’s crisis

The financial crisis on Wall Street has hit home for many Americans, but not everyone. For RIT student Riordan, the financial crisis hasn’t altered his career plans. “At every firm we visited, the discussion tended to gravitate towards derivatives and credit risky conditions,” Riordan says. Riordan was recently awarded the award by the Ponemon Institute at U.S. airports. Of these, only 33 percent are found and reclaimed, according to the Ponemon Institute LLC. Safeguarding equipment and the data that can be found on the laptops and other mobile devices is essential — in the office, at home and while away.

RIT is in the midst of piloting laptop encryption. When a laptop with an encrypted hard drive is stolen, the attacker must have the encryption key in order to access the information stored on the laptop.

Private Information Management

Two years ago, RIT completed the ID replacement project to remove social security numbers from general campus systems unless necessary and required by law. Yet, there are still some computers or systems that have SSNs or other sensitive data. RIT is piloting a tool that identifies private information. Users will be notified that this information is on their computers and to remove or store it through approved security measures.

Vulnerability Management Program

The RIT network is protected by Information and Technology Services, the Information Security Office and campus administration staff. But IT and the Information Security Office conduct scans of the network. Recently, the Information Security Office has begun in-depth scanning of computers and Web pages on the RIT network to identify vulnerabilities that could be exploited by attackers. When these vulnerabilities are identified, RIT notifies the systems administrators and owners of these computers to apply patches, updates and other security measures.

As this additional protection is provided to RIT, you will receive more communications about correct usage as well as the security benefits this protection affords to campus-wide systems and individual computers, including laptops.

Even with these new security technologies, the tried-and-true technical controls available to all campus users are often the measures that make the most difference. RIT requires computers connected to the RIT network to employ the following security controls:

- Anti-virus software to provide basic protection against specific and generic types of malware, including worms and viruses; a personal firewall to control communications to and from your computer in the network, enabling the automatic updating (patching) feature on computers to fix software vulnerabilities and prevent their exploitation; anti-spyware to prevent attackers from tracking your computing activities; and a strong password of at least 15 characters (a combination of numbers and letters) to help limit access to the RIT network.

As threats evolve, RIT will continue to frequently update appropriate security controls and determine requirements to secure network systems and individual computers. Following the requirements listed here and acting as a partner in keeping personal and RIT data is essential. Visit security.rit.edu/betapRACTiceS.html for more information on protecting yourself and RIT.

Maurer is director of business operations, Global Risk Management Services, and Woelk is communications and training specialist, Information Security Office.

Rivers Run welcomes newest residents

Rivers Run is a housing project for active adults and seniors, had a ribbon-cutting ceremony Oct. 30 to announce the opening of independent-living apartments that will offer activities and programs to residents, and the Other Lifelong Learning Institute at RIT will relocate to Rivers Run next year.

Here, guests get information from Susan Bussey, vice president of project administration and marketing for project developer Living Communities LLC.

Ben Woelk

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Michael Riordan, professor in the School of Print Media, is the recipient of the 2008 Print and Graphics Scholarship Foundation Educator of the Year Award. The annual award recognizes excellence in educational instruction for graphic communication and printing. Students nominate the candidates.

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