

News bytes

Universities unveil plan for disease research

PITTSBURGH (AP)—Carnegie Mellon University and the University of Pittsburgh announced plans Monday for a joint research center aimed at studying diseases and potential therapies within living cells. Researchers said the new National Technology Center for Networks and Pathways, which is to receive a \$13.3 million grant from the National Institutes of Health over the next five years, will pioneer new imaging technologies using fluorescent dyes.

"With these tools, we can study in detail how all the proteins are interacting with each other in real-time in the 3-D space of a living cell," said Alan Waggoner, a Carnegie Mellon professor and director of the new center. The technology could be used to treat a wide variety of diseases, including cancer, dementia and stroke, said Dr. Norika Ruiz Bravo, deputy director for extramural research at the NIH. She said it could allow for more "predictive, personalized, preemptive medicine." The research could also lead to faster detection and diagnosis of diseases and help doctors prevent or treat them with drug therapies targeted to individual cells or molecules within the cells.

Scientists find genetic key to bone disorder

NEW YORK (AP)—Scientists have discovered a mutant gene that triggers the body to form a second, renegade skeleton, solving the mystery of a rare disease called FOP that imprisons children in bone for life. The finding, reported Sunday, may one day lead to the development of a drug not only to treat the rare bone disorder, but also to treat more common bone buildup related to head and spine trauma, and even sports injuries, the researchers said. "We've reached the summit," said Dr. Frederick Kaplan, an orthopedist whose team at the University of Pennsylvania School of Medicine pinpointed the cause of FOP, or fibrodysplasia ossificans progressiva. After 15 years of work involving study of the genetic makeup of multi-generational families around the world, scientists at Penn's Center for Research in FOP and Related Disorders found that FOP is caused by a single mutation in a gene called ACVR1. This glitch means that tendons, ligaments and skeletal muscle begin painfully transforming into bone.



H. Rumph Jr./Associated Press
Dr. Frederick Kaplan, speaks to Stephanie Snow, a 15 year old suffering from the genetic disorder FOP.

Black holes discovered to be energy-efficient

WASHINGTON (AP)—With gasoline hitting \$3 per gallon, scientists have just found the most energy-efficient engines in the universe - black holes, those whirling super-dense centers of galaxies. The jets of energy spurting out of older ultra-efficient black holes also seem to be preventing too many stars from sprouting. That explains why there aren't as many burgeoning galaxies chock full of stars as previously expected, said scientists citing results from NASA's Chandra X-ray Observatory. For the first time scientists measured both the mass of hot gas that is being sucked into nine older black holes and the unseen super-speedy jets of high energy particles spit out, which essentially form a cosmic engine. These black holes are 25 times more efficient than anything man has built, with nuclear power being the most efficient of man-made efforts.

Event raises money for MS

By Megan Miller and Kathryn DeVan

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With the sun making its first appearance of the weekend Sunday, more than 230 walkers gathered to welcome the Multiple Sclerosis (MS) Society's walk back to State College.

The MS Walk held Sunday afternoon ended a hiatus that lasted several years. The course, which was about four miles long, began and finished at the Intramural Building and went to the Lion Shrine and back.

Although 100 walkers had been expected, there were 233 pre-registered walkers, Linda Hanson, volunteer coordinator, said. Many students came out to support the cause, many of them knowing people living with MS, a disease that affects the central nervous system.

Haamid Dash (junior-criminal justice), Cassie Swick (junior-kinesiology) and Daniele Dezaggo (junior-criminal justice) formed a team to support a friend's mom who had MS and was also walking in the day's event.

"The course was pretty easy. It was a straight out-and-back with no hills," Dezaggo said.

The group members said it took them roughly 20 minutes to finish the course because they ran.

"The weather today turned out to be a nice day," said Dash, who said he would come back to participate in the event again.

Hanson echoed his sentiments. "There couldn't have been better weather," she said. "I am so happy it turned out this way."

Although the organizers had considered a rain plan, it wasn't needed, as temperatures in the low 60s and sunny skies prevailed.



Kathryn MacNeil/Collegian
Anita "Toot" Thies the clown entertains Maya Thaxton, 6, at the Multiple Sclerosis Society's walk on Saturday.

However, due to the possibility of rain, the 3 p.m. start time was moved to a staggered start, with walkers beginning as early as 2 p.m.

After walking the course, walkers received a bag meal and could participate in the various festivities. For those unable to complete the course, there were two support cars driving the course to bring them back.

Overall, the event turned into a family fun day, complete with face painting and a clown, food and beverages, and lots of smiles.

Anita "Toot" Thies, from Happy Valley Alley, a chapter of the World Clown Organization, was in attendance Sunday to offer fun and entertainment to the walkers as they finished the course.

Members of the women's soccer

team also participated in the event.

"It wasn't mandatory, but everyone came out," Penn State soccer team member Jean Rettig said.

She said the team's season ended Saturday, so the walk provided another group activity before the semester ended.

Also, there were several corporate teams there, including those formed by

See MS, Page 16.

Exhibits highlight stellar concepts

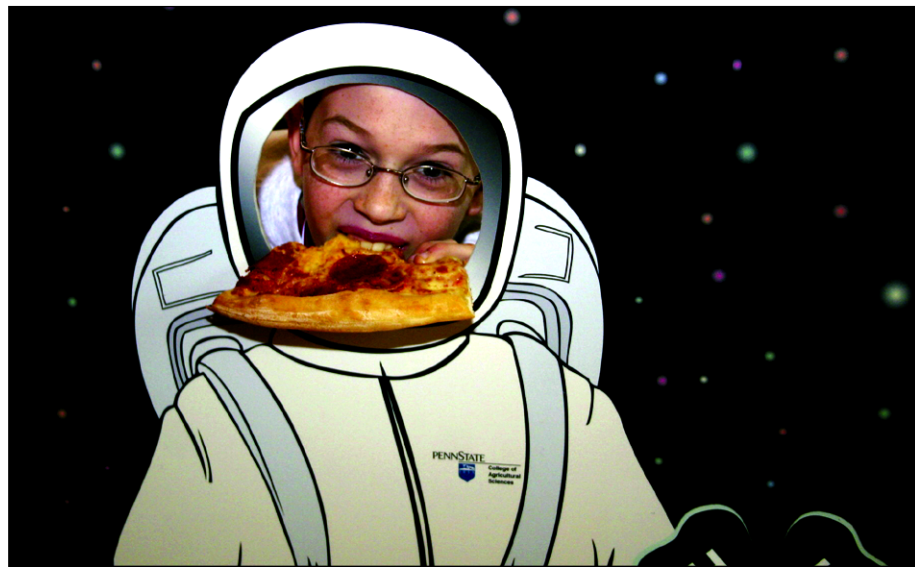
Saturday's Space Day activity was a chance for children to learn astronomy principles.

By Liz Coviello
FOR THE COLLEGIAN

Fact: Potting soil, ammonia, corn syrup, water and dry ice are all common household materials that can make a comet.

This was just one of the fun facts and demonstrations at Penn State's Seventh Annual Space Day.

On Saturday, more than 40 Space Day exhibits were displayed in the HUB-Robeson Center. Undergraduate and graduate students from the Penn State Colleges of Agriculture Science, Earth and Mineral Sciences, Education, Engineering, Health and Human Develop-



Laura Sarowitz/Collegian
Kris Verlindi, 9, of State College attends Space Day as part of a 4-H trip.

ment, and the Eberly College of Science gave demonstrations and explained various phenomena from the making of a comet to why blue cheese is blue.

The comet demonstration by Matthew Zielewski (freshman-astronomy) made a real comet by combining ingredients into a plastic bag. He said it can be made by anyone at home.

"Ice is the real, actual building block of comets," Zielewski said.

A comet forms when small pieces of random matter stick together with ice in the middle, he said. Zielewski demonstrated how the gases behind the comet reflect the light of the sun and produce the bright colors that can be seen in the tail of a comet. He also broke open the

comet to show pure, untouched ice in its center.

Other interesting exhibits included turning a penny from copper to gold and using a favorite Easter candy, Peeps, to demonstrate what would happen to astronauts if they did not wear space suits.

Professor of Chemistry and Physics, Tom Mollouk, sent Peeps into "space" by depressurizing them. The Peeps expanded rapidly, just as a human body would without a space suit in space. Once the Peeps were brought back to "earth" or normal pressure, the Peeps shrank to a smaller size.

"This shows kids why astronauts have to wear space suits," Mollouk said. "With-

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Program hopes to further solar use

By Joe Anuta

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Penn State University was recently selected as one of six pilot schools in Pennsylvania's Solar Scholars program.

The program is funded by the Sustainable Energy Fund of Central Eastern Pennsylvania (SEF), which helps to promote awareness of solar energy and will aid students in building two solar-power systems on campus.

Melissa Hamilton, marketing and business development manager for the SEF, said that although Penn State was selected to participate in the pilot program, the ultimate goal of Solar Scholars is to create venues for solar power in every university in the state.

"Governor Rendell has been very proactive in trying to promote Pennsylvania as a leader in clean and sustainable energy," she said.

The program was started in response to the state's Alternative Energy Portfolio Standard, which Hamilton said has ambitious goals for the amount of solar power required of the state.

Andy Lau, associate professor of engineering design; Howard Greenburg, environmental research assistant; and Brent Yarnal, professor of geography and director of the Center for Integrated Regional Assessment, sent in the proposal resulting in the university's inclusion and are the principle investigators for the program at Penn State.

Greenburg said there will be two teams working to construct the Solar Scholars projects — an engineering team led by Dave Lettero (graduate-adult education) is going to design the structure, and students participating in a seminar taught by Greenburg and Yarnal are going to construct it.

The seminar is called the Centre County Community Energy Project seminar; Greenburg said.

"The idea is to increase the energy efficiency of Centre County as a whole," he added.

He said the seminar was started last term. The students benchmarked the energy consumption of the county, and by implementing community projects, they hope to change those numbers, Greenburg said.

Because of Lau's experience, Greenburg said, he will be instructing students on the mechanics of solar technology.

"I've been working with solar energy ever since I graduated from Penn State," he said.

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Imaging used to improve fuel cells

By Adam Griffith

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To improve the performance of the kinds of fuel cells most likely to power more environmentally friendly automobiles in the future, Penn State researchers have begun using something called neuron imaging.

Neuron imaging sees through fuel cells and shows the flowing water within.

This helps to understand how the design of a fuel cell and the materials it is made of relate to its performance, according to researchers.

One of the biggest difficulties of fuel-cell design is understanding how water behaves inside fuel cells. The amount of water flowing within a fuel cell and the distribution of the water play the biggest role in determining the performance and durability of the fuel cell, Matthew Mench, assistant professor of mechanical engineering, said.

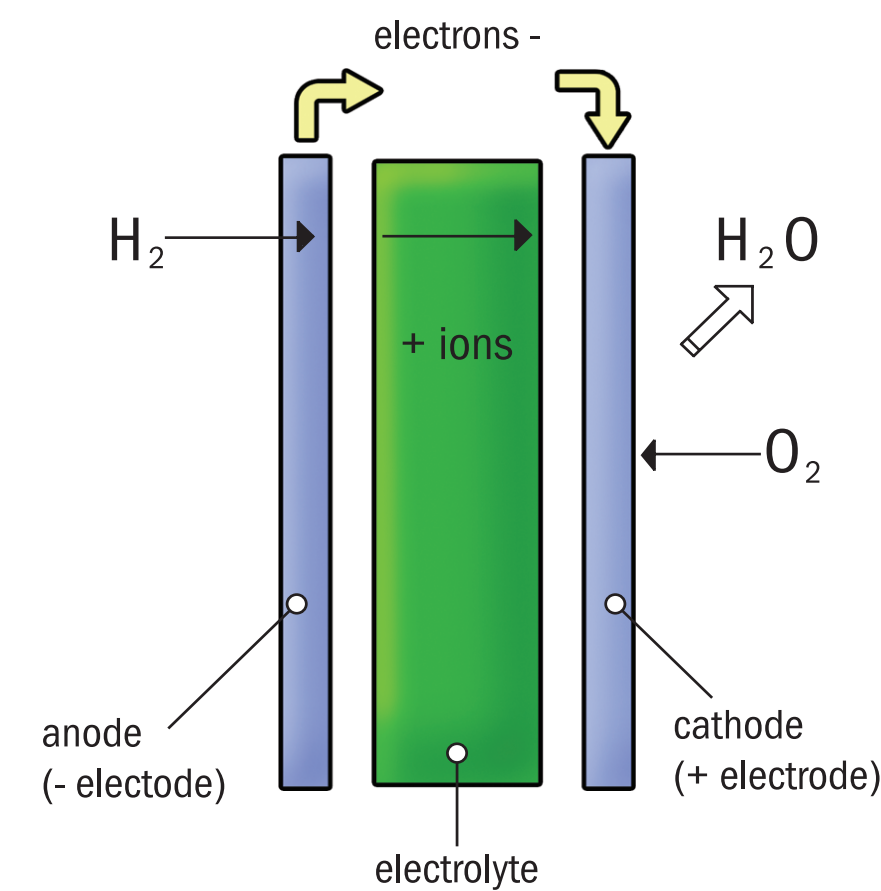
For every fuel-cell design there is an optimum amount of water that can flow within, said Jack Brenizer, a nuclear engineering professor.

If a fuel cell does not have enough water, it is inefficient, and if it has too much water, it is inefficient, Brenizer added.

The more evenly the water flowing within a fuel cell is distributed, the better. Climate conditions can also pose a problem for fuel-cell use in automobiles, Mench said.

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Fuel-cell process



Justin Colt/Collegian