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Bringing high-level science to high-schoolers

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Local nonprofits get a boost from UB engineers

“It is inspiring to see young people so passionate about what they are doing.”

John Mika, founder of The Teacher’s Desk



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Action Items: UB-related activities for the community



Factory Facelift

A mural by a UB-sponsored artist brings new interest to a rundown facade on Buffalo’s East Side

Shantell Martin working on her “Dance Everyday” mural at 537 E. Delavan Ave. © Shantell Martin
PHOTOGRAPHS BY CONNIE TSANG

A painted wall of sprawling lines has changed the building at 537 E. Delavan Ave. from abandoned factory to artistic monument. And with significant economic investment slated for the former manufacturing site, it marks an even greater transformation to come.

As a resident artist in UB’s Creative Arts Initiative (CAI) working with the Albright-Knox Art Gallery, Shantell Martin set out last spring to create a large-scale mural here in Buffalo. The CAI seeks to bring creative expression out of the studio and into the community. Scouting the East Side, Martin settled on the long-closed Houdaille Industries plant.

Over the course of two days, Martin painted a jumble of whimsical faces made up of looping black lines on the white brick background. Between the quirky faces, Martin added positive phrases like “no one else you could be,” “shine” and “peace.”

The mural, titled “Dance Everyday,” is both playful and



powerful. Stretching across 220 feet, the piece is the artist’s largest yet. Although Martin usually forgoes a plan when she creates her artwork—“The pen knows where it is going and I just follow,” she says—for this piece, she made a point to educate herself on the site and its audience. She met with local churches and neighbors to ensure the work would be “more of a conversation” and “more relevant” to the community in which it’s situated.

Martin’s mural is just the beginning for the site. The plant and its surrounding neighborhood are set to become a hub for light industry and commerce as part of a Buffalo Billion project. The building that displays the mural will be renovated, and those portions of the mural that now appear on panels covering the windows will be displayed inside. The grassy area in front will be developed into a public space.

As the mural itself proclaims in bold black and white, “Yes we can.”

→ For directions to the mural, go to albrightknox.org/community/ak-public-art/dance-everyday.

Shout-outs & Stand-outs

Recognizing what's happening around the community



Much appreciated!

St. Luke's Mission of Mercy was given the 2017 "Friend of the EOC" award in recognition of the mission's outstanding commitment to UB's Educational Opportunity Center. For the past five years, St. Luke's has donated Thanksgiving food baskets to brighten the holidays for EOC students.



The University Heights Collaborative's Tool Library lends out equipment to area residents.



GATEFUL GRIND COFFEE

Refill, please!

A late welcome to **Grateful Grind Coffee**, a community café in the heart of University Heights that serves up innovative coffee drinks and food items. The beet root lattes come highly recommended.



That sure comes in handy!

UB's Inter-Fraternity Council (IFC) recently donated \$500 to the University Heights Collaborative to support its mission of improving quality of life in the South Campus neighborhoods. The funds, raised through an IFC-organized softball tournament and a private gift, will be used toward the Tool Library.

Bravo!

At the **Fruit Belt Coalition's** seventh Annual Recognition

Banquet in June, the group recognized Henry Louis Taylor Jr. for his contributions to the neighborhood through his work with UB's Center for Urban Studies, which he founded.

Good to see you!

The Buffalo Niagara Medical Campus Inc. hired **Marc Pope** as its community program manager, a new role designed to promote economic opportunity, health and wellness, particularly among the neighborhoods immediately surrounding the campus.

Hello, neighbors!

Buffalo Promise Neighborhood staff, community members, AmeriCorps members and **M&T Bank volunteers** dropped by neighborhood homes in June to promote community engagement and to share info packets regarding block club opportunities, fresh fruits and vegetables, and community events with residents.



UNIVERSITY ARCHIVES

UB Through the Years

History Re-illuminated

Two ornate steel lanterns once lit the halls of the UB Medical School on High Street. But when the school moved to the South Campus, only one of the lanterns made the trip. Then, about a decade ago, a tip from a retired UB employee led to the discovery of the other lamp in a barn in Eden, N.Y. Though years of exposure to the elements had left the lantern in rough shape, several UB faculty and staff worked together to restore both pieces. And now, the two 19th-century lanterns have been reunited within the halls of UB's new downtown medical campus. After more than half a century apart, the pair will shine brightly once again when the Jacobs School of Medicine and Biomedical Sciences opens its doors later this year. ○

← **Test of Time:** Do you know when the UB Medical School operated on High Street? Find the answer on the bottom of the back cover.



ONION STUDIOS

Setting Students' Sights on Science

A day for high school students to explore and learn

Tracking the junk that floats in outer space. Investigating so-called paranormal mysteries. Building the robots that build buildings. Advancing cancer research. Making drinking water safe. Becoming a bio-artist.

Hundreds of teens came to UB's North Campus last spring to learn about these and other topics as part of Science Exploration Day, UB's open house for promising high school science students, an annual tradition for more than 30 years. The day's goal is to tune them into science and entice them to continue their studies, becoming part of the future in the mathematics, science, engineering and medical fields.

The Science Exploration Day organizing committee is composed of science teachers and administrators from local schools and UB faculty and staff. The presenters are all volunteers, and many are UB professors, students and staff, as well as professionals from local industries, research organizations and government agencies.

The 2018 Science Exploration Day will take place on March 21. Each public or private senior high school in Western New York is eligible to bring up to 40 students. For information, visit scienceexplorationday.com. ○

More opportunities to experiment

The third annual **Student Open House** at the Buffalo Niagara Medical Campus (BNMC) in May gave area students in grades 7 to 12 the chance to hear from UB researchers and other health sciences professionals, tour the BNMC facilities—including state-of-the-art research labs, behind-the-scenes hospital rooms and creative spaces—and get hands-on with cool equipment like the Robotic Surgery Simulator.

Genome Day

also in its third year at the BNMC, allowed hundreds of eighth-grade students and their teachers to take part in their

own "genetic testing," extracting DNA cells from their cheeks. They also tried to complete a karyotype to identify chromosomal differences and build an origami DNA model. UB is a participant in this private/public partnership designed to build student interest in STEM fields.

Science-focused summer camp programs abound at UB. Options include the **Eric Pitman Annual Summer Workshop in Computational Science**, which introduces high school students to the use of computer modeling and simulation to solve science and engineering problems, and the **Pre-Pharmacy Summer Camp**, also for high schoolers, featuring hands-on activities, visits to local clinical practices and research labs, and lectures by UB faculty and alumni on topics that range from vaccinations to the future of the profession. ○

COMMUNITY


Matters

A note from UB's Office of Government and Community Relations

UB touches thousands of lives within the community and helps to guide our region—and our world—toward a brighter future. Our office sees proof of this every day, and we're glad to share the news of what's happening.

This fall—the start of UB's 171st academic year—marks an important first. Many of our students beginning or returning to their studies are now eligible to participate in the nation's first accessible college program. **The Excelsior Scholarship**, a groundbreaking New York State initiative, provides qualified in-state students up to \$5,500 annually in tuition assistance. Approved last spring, the program aims to increase accessibility, affordability and excellence in higher education—principles that UB stands behind.

Speaking of back to school, it's been another successful year for the UB community's **annual school supply drive**. Since 2009, our office has conducted the drive to assist students in Buffalo schools that



include Futures Academy 37, PS 33 Bilingual Center, PS 18 Dr. Antonia Pantoja Community School of Academic Excellence, Highgate Heights Elementary, Westminster Community Charter School and Southside Elementary. Through the years, the drive has collected an estimated 120,000 items, including pencils, markers, notebooks, folders and more. The generosity of our faculty, staff and students is another example of the university's support and impact in the city and region.

Tess says:

"Let us know what's on your mind. Comments and questions from community members are always welcome. Call us at 829-3099, email communityrelations@buffalo.edu or visit our new website at buffalo.edu/community."

Finally, please note: UB's Office of Community Relations will be based at Parker Hall on the South Campus for the next year while Allen Hall undergoes renovations to make the building more accessible. Feel free to visit us in our new offices in 124 Parker Hall (that's Building 11 on the South Campus map, by the Winspear entrance). ○



Tess Morrissey, Director of Community Relations and Deputy Director of State Relations

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ONION STUDIOS



Research Round-up

What UB's inquiring minds want to know

What would kids rather do than eat?

1 A UB study to determine how children's interest in non-food activities affects their weight has received funding from the National Institutes of Health. More than 300 WNY children are participating, helping to find new ways to prevent childhood obesity.

Are hearing tests missing the mark?

2 A UB-led study has found that clinical hearing tests often fail to diagnose a kind of inner-ear damage in patients that makes it difficult for them to hear specifically in noisy situations. Tests that take place in quiet rooms—as most do—can easily miss this common form of hearing loss.

How can farming be more efficient?

3 A UB geology professor has devised an ingenious way to quickly test soil in farm fields. The new system zaps the ground with electricity, measuring the conductivity of every square yard to make maps of differing soil types for better watering and fertilization practices.

Is exhaustion an issue for police officers?

4 UB researchers found that among male police officers, working the afternoon shift is associated with a two-times higher prevalence of fatigue compared to those working the day shift. No significant link was found between shift work and fatigue among the female officers.

How can parents stay positive?

5 A UB researcher has found a way to help parents be supportive coaches—rather than critics—of their children. The COACHES program instructs moms and dads in using positive reinforcement to help their young ones work through academic and behavioral issues.

[Learn more about UB research initiatives that affect your life at buffalo.edu/community/outreach/research.](http://buffalo.edu/community/outreach/research)



Meals on Wheels for WNY serves thousands each day. Below: COO Chris Procknal (second from left) with the team of UB student engineers that helped to improve the organization's delivery system.

Delivering Results

How UB engineering students brought fresh ideas to local nonprofits

Meals on Wheels for WNY produces and distributes up to 6,000 meals a day directly to homebound seniors and disabled individuals. The logistics of such a big operation are complicated—and critical.

So when Meals on Wheels was contacted last winter by a team of UB engineering graduate students who wanted to talk about including the agency in a project centered on advanced analytics and organization science, Meals on

Wheels executives agreed.

"We are in the student chapter of UB INFORMS—the Institute for Operations Research and Management Science," says Vineet Payyappalli, an industrial engineering PhD student specializing in operations research. Nationally, INFORMS has a division for "pro bono analytics," in which analytics specialists volunteer their expertise to help nonprofit organizations solve challenges and gain efficiency.

Joining Payyappalli in UB INFORMS were fellow UB engineering students and/or graduates Praveen Frederick Selvaraj, Tianjiao Wang, Prabakar Theivaraaj, Jessica Dorismond, Yashar Khayati and Sarathkumar Nachiappan Nallusamy. The group worked with two local organizations this past school year: Meals on Wheels and The Teacher's Desk, which gives free school supplies to students in need.

For Meals on Wheels, the team decided to focus on optimization of the pack-out process for delivering meals. Every home-delivery route changes daily, so the counts and daily diet types are in constant flux.

"We have five diets—regular, renal, ground, bland and diabetic—and when each new client comes on, we work with their doctor to determine what diet they should have," says Chris Procknal, chief operating officer of Meals on Wheels for WNY. "As you can imagine, incorrect deliveries of any meals can have a serious consequence for our clients."

After a hot meal is sealed at the end of the assembly line, it is checked against a list—sorting the meals against different routes and sites by the recipients' addresses, ensuring that meals go into the correct ovens for delivery. There is a strict two-hour "safe window" between final plating in the commissary and delivery at the last client's home.

However, the team found the checklist did not have the different types of meals supplied to clients. The list did have the total quantity for each route and for each car for delivery, but did not have the sub-quantities of the meal categories. Analytics conducted over the middle portion of the semester enabled the team to create new lists.

After a two-week trial, the new pack-out template proved to be a boon to the agency's operations systems, allowing for more accurate tracking.

At The Teacher's Desk, a bustling operation that collects and distributes school supplies free of charge to local students in need, organizing the inventory was an ongoing struggle.

"We have 15,000 square feet of warehouse space," says owner John Mika. "The big challenge has turned out to be that because this huge inventory changes week to week, none of our 200 weekly volunteers are able to keep up with what is stored where."

After measuring the warehouse space, the UB team created a program that named each area of the store, identified the space and recorded the contents of each shelf. They also developed a way to calculate and track appropriate storage spaces for items as they came in.

"It is inspiring to see young people who are so passionate about what they are doing," says Mika. "Their efforts will allow us to be more efficient when we start up again for the fall semester." ●



Right Here, Right Now

The medical research initiative that will change lives in WNY

When it comes to new medical discoveries—even potentially life-saving ones—the route from development to testing to patient access can be long. Too long, says a UB-led group of research partners devoted to accelerating innovative medical research and improving health for all.

Now known as the University at Buffalo Clinical and Translational Science Institute (CTSI), the joint initiative won a \$15 million award from the National Institutes of Health in 2015 as part of a national push to get effective new treatments to the patients who need them—and to do it more quickly.

Much of the work is taking place within the UB research center known as the Buffalo Clinical and Translational Research Center (CTRC), which shares a building with Gates Vascular Institute on the Buffalo Niagara Medical Campus, but the effort is truly collaborative among the CTSI's 17 partners. Those include UB's five health sciences schools, other UB entities and a host of Western New York health care, research and community organizations. The barrier-breaking approach is key to fueling discovery.

"We now have the opportunity to truly raise the level of clinical research in Buffalo, which will lead toward more drugs, new vaccines, new diagnostic tests, and better ways to treat and prevent disease," says the institute's director, Timothy F. Murphy.

Though the CTSI's research is high level, its work is grounded in the community—the whole community. The CTSI is committed to diversity in its workforce and research participants, and to engaging area residents and health care providers in all phases of clinical research. "People who experience health disparities, people in poverty, have been excluded from the advantages and the advances that result from clinical research, so it's most important for us to communicate and connect to engage our community in a way that is meaningful to them," says Murphy.

One of the ways that happens is through improved recruitment efforts for clinical trials. Testing new treatments on human subjects is a critical component of medical advancement. The people who participate in a clinical trial—even those who are healthy volunteers—help to drive medical progress. Those with an illness or condition may also benefit from the cutting-edge care they receive. And yet, recruitment of participants represents the single largest obstacle to successful, timely clinical trials.

A community directory is being developed by the Buffalo CTRC's Office of Community-Based Participatory Research to keep people informed. Members will receive notification of opportunities to participate in research studies, join research advisory boards, access training and educational programs, and learn about employment openings. They can also offer suggestions on the types of research that are most important to them and get updates on the results of studies occurring in their community. **o**

Visit the Community Engagement pages of the CTSI website at buffaloctrc.org to sign up or learn more.



Timothy F. Murphy directs the CTSI, which promotes medical discovery and innovation.



Have You Heard...

Good news worth sharing

The Fruit Belt is growing.

→ Working as part of a public art project commissioned by the UB Art Galleries, volunteers planted more than 30 blueberry bushes and plum, pear, apple, peach and cherry trees throughout the Fruit Belt last May. The plants will eventually yield fruit meant to be enjoyed by passersby.

Driverless cars are headed this way.

→ With a \$1.2 million National Science Foundation grant, UB is poised to create a nationally renowned research facility dedicated to driverless-vehicle technology. Over the summer, Lt. Gov. Kathy Hochul joined local officials on the UB North Campus to road test an autonomous Cadillac SUV.

Girls and math really add up.

→ Free, five-day camps designed to help girls improve their math skills were held at three Buffalo schools this past summer. The grant-funded program was designed by a UB professor to address gaps in math achievement and to promote project-based learning in math education.

Volunteerism has gone global.

→ The first-ever UB Alumni Day of Service in May was like an international flash mob of volunteers, from China to India to Canada to right here at home. Many Buffalo-area alumni spent a day helping out at the Salvation Army.



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ACTION ITEMS

Opportunities to learn, grow, celebrate and connect with UB

Jazz it up.

The Jazz at Lincoln Center Orchestra with Wynton Marsalis will perform at UB's Center for the Arts on Friday, Sept. 29 at 8 p.m. Ticket information can be found at ubcfa.org.



DANNY CLINCH

Get your game on. Homecoming Weekend will feature a UB Bulls football game against the Broncos of Western Michigan and a pregame concert by rock trio Better Than Ezra, both on Saturday, Oct. 7. Visit ubbulls.com or call 1-877-UB-THERE for tickets.

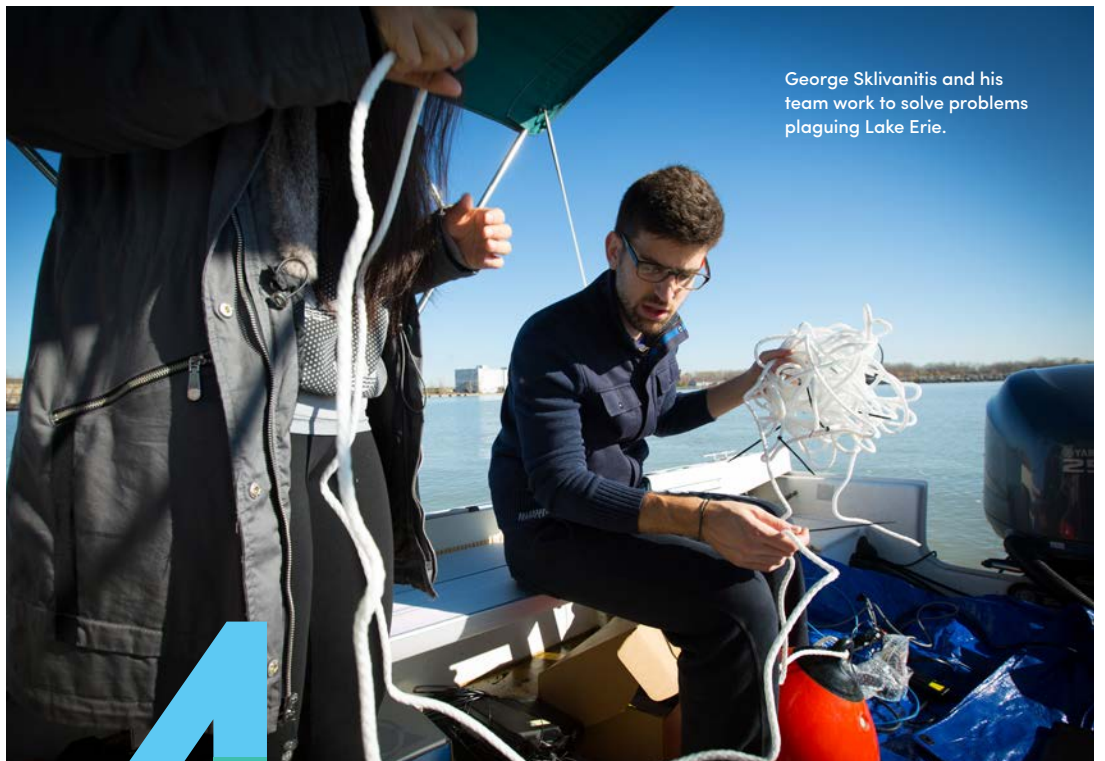
Bring the whole family.

Free activities, games and exhibits make the Strengthening Families Day, an annual event of UB's Educational Opportunity Center, fun for all. Parents and caregivers can also learn about educational and vocational programs. Drop by the center, at 555 Ellicott St. in Buffalo, on Saturday, Oct. 21, from 11 a.m. to 2 p.m.

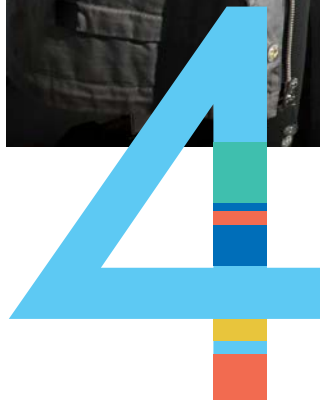
Revisit history. A collection of many never-before-seen objects designed by Frank Lloyd Wright as part of his commission to design the now-demolished Buffalo headquarters of the historic Larkin Company, along with a variety of Larkin products, is on display in Hayes Hall in a special exhibit that runs through Oct. 29. Go to artsandcraftsalliance.org/event/wrights-larkin-arts-and-crafts-in-industry/ for more information.



Larkin Administration Building office chair, 1906.



George Sklivanitis and his team work to solve problems plaguing Lake Erie.



Questions for

George Sklivanitis, UB student and member of ExtremeComms Lab, a winning team in the Erie Hack finals

Lake Erie faces a range of dire problems, from agricultural and industrial pollution, to outdated municipal water systems, to flooding and shoreline erosion. An initiative known as Erie Hack, organized by the Cleveland Water Alliance, enlisted the help of savvy engineering students and professionals to solve these and other challenges by putting their most innovative ideas to the test. Last spring, a group of six electrical engineering graduate students from UB (that also included Konstantinos Tountas, Nan Zhang, Sarankumar Balakrishnan, Song-Wen Huang and Yi Cao) made waves in the competition by developing the first-ever underwater Wi-Fi network.

Here, Sklivanitis discusses the idea that won the team second place—as well as \$15,000 cash and \$10,000 in incubation services—and could benefit this precious Great Lake and the millions of people living near its waters.

How does underwater Wi-Fi even work?

1 We created a network of aquatic sensors that use an innovative method of acoustic communication to quickly transmit information long distances under water.

What applications could it have?

2 Our goal is to use this technology for improving the early detection and warning of harmful algae blooms. It can also be used in mobile nodes or drones that move autonomously under water to collect data and communicate that information to the surface. There are many different applications for this technology, and we expect it to yield wide commercial and societal impact. That could include the measurement and tracking of urban pollution, disaster prevention, offshore oil and gas exploration, even underwater cultural heritage protection.

How close are you to actually developing the technology?

3 Our technology is developed and has already been tested—first in the university swimming pool and a water tank indoors, and then in outdoor environments, such as Lake LaSalle on campus for shallow-water testing and Lake Erie for deep-water testing.

What are the next steps?

4 The team plans to use underwater Wi-Fi to wirelessly network 10 square kilometers of Lake Erie within the next three years. We envision the deployment of a swarm of underwater systems that can interface with either commercial off-the-shelf or in-house-built sensors. ●



Is Laughter Contagious?

UB on the Green, the outdoor fair and concert series held annually on the South Campus, kicked off its 11th season in July with an evening dedicated to promoting health in the community. Services and activities were provided by UBMD, UB Nursing and UB Dental. Here, nursing student Chris Streb, left, leads Yvette Gaines-Hicks through a free health screening.



Open Wide!

THE DENTAL SCHOOL BEGINS A TRANSFORMATIONAL RENOVATION

Teeth aren't the only things getting polished around the UB School of Dental Medicine. A \$25 million renovation is well underway, one that will transform the South Campus school into a state-of-the-art educational and clinical treatment facility.

The recently completed first phase revamped the preclinical simulation center to include 110 new workstations with simulators that allow students to more realistically practice and prepare for the patient care experience. The second phase will add 30 more student stations to the preclinic, as well as a facility for computer-aided design and manufacture. There, anything from crowns and bridges to dentures and implants will be planned and executed digitally through scanning, design



and milling, according to Jane D. Brewer, DDS, chair of the Department of Restorative Dentistry in the School of Dental Medicine. "The practice of dentistry is going toward digital at lightning speed," says Brewer.

Next year, the School of Dental Medicine will begin construction of the Joseph and Stephanie Mucha Patient Welcome Center, which will serve as an information hub and first point of contact for new and existing patients. Also in 2018, the school will begin a \$12 million renovation of its Squire Hall patient dental clinics. ●

**UB Dental sees patients at two convenient locations: in Squire Hall on the UB South Campus (call 239-4801) and in the Erie County Health Mall at 1500 Broadway Ave. (call 239-4770).*

DENTAL DETAILS

Facts and figures to make you smile

125

years the UB dental school has been in existence

30+

years since its last major building renovation

4k

annual pediatric patients treated

16

years of Give Kids a Smile Day

800

children who receive free dental care on that day

150,000

annual patient visits (including faculty practice plans)

2

dental clinic locations serving the Buffalo community*

3,500

annual patient visits made by the S-Miles to Go mobile van in Chautauqua and Allegany counties

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A new web resource for the community!

Now find events, news, volunteer and learning opportunities, contacts, and much more at buffalo.edu/community.



The Big Picture

Resetting the Scene The giant grain elevators that inhabit Silo City are an impressive sight all on their own. Now, a project by students in UB's School of Architecture and Planning has provided the public with a new perspective on the familiar landscape. → The project, called "Reflection Space," tasked student teams with designing and building a collection of intricate wooden structures that invite the public to experience the silos in a way they previously could not. → "The idea is to invite people to walk through, wonder what it is, go in and experience different views of Silo City depending on where you're standing inside it," student Eryn Conlon says of the structure her group built. → Constructed along a walking and snowshoeing trail, the structures will eventually rot away. The main point of the project wasn't to build something lasting, but to teach students valuable, career-centered concepts. The community, too, gained something—a new view of an old scene. ●

STOP BY AND SAY HELLO!

Reach UB's Office of Government and Community Relations at 829-3099 or communityrelations@buffalo.edu, or visit us at 124 Parker Hall on the South Campus.

The University at Buffalo is the largest and most comprehensive campus in the State University of New York system. If you have questions about UB's programs or wish to be added to the mailing list for this publication, please call (716) 829-3099, or send an email to communityrelations@buffalo.edu. Produced by the Division of University Communications, University at Buffalo. Editor: Sally Jarzab. Creative Director: Rebecca Farnham. Contributors: Michael Andrei, Charles Anzalone, Holly Atkins, Ellen Goldbaum, David J. Hill, Marcene Robinson and Sue Wuetcher. August 2017 17-GCR-004.

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