The LIST

2014–15

ONE YEAR. HUNDREDS OF STORIES.

University at Buffalo
The State University of New York

PROGRESS REPORT
AT THE UNIVERSITY AT BUFFALO, our integration of disciplines, people and ideas, our commitment to creative freedom, and our insistence on thinking big foster an environment of limitless possibility, in which no goal is too lofty, and transformative discoveries are a daily occurrence. This year has been no different.

In this second edition of The List, we are proud to bring you more than 500 news headlines from 2014-15 that capture our purpose and pride. The list is not comprehensive—that would be a virtually impossible task, given the number of newsworthy accomplishments that our faculty, students, staff and alumni amass in a week, let alone a year.

Instead, consider this book to be a peek inside a nationally ranked institution and the most comprehensive public research university in New York State. See how we’re solving our planet’s most complex challenges. Learn how we’re improving the health and wealth of communities worldwide. Grasp how we’re elevating humanity with our contributions to the arts. And discover how we are making a difference today—and every single day of the year.

( Good thing we’re also at the forefront of research into coffee. P.9 )

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HOW DO YOU MEASURE the progress of a university that is evolving and transforming every day? Over the years, UB’s scope and mission have expanded exponentially as we have grown into a world-renowned research university that is the thriving heart of our regional community, a national leader in public higher education, and a global hub for excellence in research and education. And that evolution continues today as we build even further on our distinctive strengths and expand their impact ever more broadly.

Great universities don’t stand still. Guided by our core mission, we are always refining, recalibrating and readjusting in response to the developing needs and concerns of a world that is always changing. That is the essence of what it means to make progress. Every day, we must set our sights higher—for the sake of our students, our communities and the world around us.

That’s the heart of our mission as a public research university, and we never stop pursuing it. The hundreds of stories gathered here are evidence of that ongoing pursuit, and a testament to its powerful impact—regionally, nationally and globally.

You’ll find many compelling examples of that impact captured in the pages of this progress report—from research breakthroughs that are revolutionizing the treatment of cancer, stroke and drug addiction, to new approaches that are transforming how the world does business, to novel ways of understanding the nature of vast challenges like climate change, data security and global poverty.

This isn’t intended to be an exhaustive list—far from it. There are countless new stories unfolding right now, and many more taking shape for the future. No matter how much progress we achieve, we are continually creating, innovating and transforming so that we can reach higher and farther in our commitment to making the world around us a better place.

Each member of our university community—faculty, staff, students, alumni and university friends—helps drive that progress. Thank you for all the ways in which you help our great university achieve and contribute—now and in the future.

With best regards,

Satish K. Tripathi, President
The most exciting innovations of the day are coming from the field of advanced manufacturing and design—and UB is at the forefront of this materials and manufacturing revolution. 

The NYS Center of Excellence in Materials Informatics is leveraging our expertise in materials science, advanced manufacturing and big-data analytics. UB is also a founding partner of Buffalo Manufacturing Works, a novel resource center for advanced manufacturing. Meanwhile, the new Department of Materials Design and Innovation (MDI)—a collaborative effort between the School of Engineering and Applied Sciences and the College of Arts and Sciences—is shaping the future leaders of this transformative field.

Thus it’s no wonder that the American Society of Mechanical Engineers (ASME) chose UB to host its 2014 international conference. Last August, as many as 2,000 engineers from around the world—including industry leaders, scholars, entrepreneurs and students—gathered in Buffalo for four days of exhilarating discussions on robotics, computer-aided engineering, 3-D printing and other emerging technologies.

"The institute and the conference, as well as other initiatives at UB, illustrate that the university and the Buffalo Niagara region are moving in the right direction. We are working to advance the development and commercialization of design and manufacturing technologies that will support economic growth and create new good-paying jobs in Western New York and beyond."

VENKAT KROVI, ASSOCIATE PROFESSOR OF MECHANICAL AND AEROSPACE ENGINEERING AND THE CONFERENCE’S GENERAL CHAIR
A THIRST FOR KNOWLEDGE

Experiential learning leads to a lifesaving innovation

EVERY STUDENT dreams of changing the world. Junior engineering major Deshawn Henry may have done it.

As a sophomore, Henry, working under engineering professor James Jensen, played a key role in testing and improving a solar-powered water lens, a revolutionary device that purifies polluted water at almost no cost. “Millions of people die every year from diseases and pathogens in unclean water, and they can’t help it because that’s all they have,” said Henry. “Either they drink it or they die.”

At UB, undergraduates often work directly with professors, conducting hands-on research with real-world impact. Henry studied ways to improve the efficiency of the water lens, which consists of plastic sheeting spread across a wood frame. When water is poured on the plastic, it pools in the center and forms a simple magnifying glass, enabling sunlight streaming through the lens to heat and disinfect a container of polluted water placed below.

More than 1 billion people around the world lack access to clean drinking water, so it’s not surprising that the project has drawn major media attention. In early 2015, Henry was interviewed alongside Jensen for the CBS show “Innovation Nation,” which highlights the most promising new work being done by America’s most visionary thinkers.

Henry became involved with this project through the UB Louis Stokes Alliance for Minority Participation (LSAMP) program, which connects minority students with research opportunities in STEM fields. It’s one of many programs through the Office of Undergraduate Education focused on creating experiential-learning opportunities for students.
Coffee genome sheds light on the evolution of caffeine

CAFFEINE isn’t unique to coffee. You can find it in tea, cacao and other plants. In all these forms, the substance is wildly popular—the most widely consumed drug in the world, in fact. And yet, little is known about how, or why, it evolved.

By sequencing the genome of a common coffee plant, evolutionary biologist Victor Albert, working with an international team of researchers, has made a big step toward increasing that understanding.

One striking finding in the study, which was published in the journal Science, is that caffeine evolved along a separate path in coffee than in other plants. This phenomenon, called convergent evolution, often points to an especially useful adaptation.

In addition to providing a key to the importance of caffeine, a better understanding of coffee’s genome could also help researchers improve the plant, which is the principal agricultural product of many tropical nations and plays a huge role in the global economy. Potential applications include fighting diseases like coffee rust, developing plants better suited to withstand climate change and even creating a more flavorful decaf.

Hundreds of media outlets around the world ran stories on Albert’s groundbreaking research, including The New York Times, Los Angeles Times, Nature, Smithsonian, Popular Mechanics, NBC News, the BBC and Agence France Presse.
OUR INFLUENTIAL FACULTY

Our faculty’s outstanding contributions advance their respective fields and positively impact our world. These major achievements lead to major recognition. This year, more than 60 faculty members received important national and international honors, including prestigious fellowships and grants, career achievement awards, election as fellows of professional organizations, book and journal awards, and more.

VENU GOVINDARAJU
Interim vice president for research and economic development and SUNY Distinguished Professor of Computer Science and Engineering, Govindaraju received the Outstanding Achievements Award from the International Conference on Document Analysis and Recognition, honoring his pioneering contributions to pattern recognition and the development of real-time engineered systems.

SEBASTIAN G. CIANCIO
Ciancio, SUNY Distinguished Service Professor in the School of Dental Medicine, was the sole recipient of the 2014 Norton M. Ross Award from the American Dental Association (ADA) for his significant research achievements in pharmacology and periodontology.

ROSEANNE C. BERGER
Berger, a senior associate dean for graduate medical education and associate professor of family medicine, was one of three leaders nationwide honored with a 2015 Parker J. Palmer Courage to Lead award for her achievements in building UB’s medical training programs.

MICHAEL C. CONSTANTINOU
Constantinou, a SUNY Distinguished Professor of Civil, Structural and Environmental Engineering and an internationally recognized earthquake expert, was the sole recipient of the Newmark Medal from the American Society of Civil Engineers for his work in the area of seismic protective systems.

EDWARD H. STEINFELD
A SUNY Distinguished Professor in the School of Architecture and Planning, Steinfeld received the James Haecker Award for Distinguished Leadership in Architectural Research—one of his field’s highest honors—for his groundbreaking work in inclusive design.

LUIS A. COLÓN
A beloved chemistry professor, Colón traveled to the White House this spring to meet President Obama and receive a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring. He was one of 14 individuals in the country to receive this recognition.

MEGAN M. HOLLAND
An assistant professor of educational leadership and policy, Holland is the recipient of a 2015 Spencer Postdoctoral Fellowship from the National Academy of Education, a highly competitive program supporting early-career scholars working in critical areas of education research.

STEPHEN MCKINLEY HENDERSON
The featured arts and letters scholar of UB’s 2015 Signature Series, Henderson is a distinguished actor, professor in the Department of Theatre and Dance, and winner of the 2015 Lucille Lortel Award for Outstanding Lead Actor in a Play for his performance in the Pulitzer Prize-winning drama “Between Riverside and Crazy.”

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UT’s FAFSA Project opening doors to educational futures

In 2011, he launched the FAFSA Completion Project, which uses a team of students, staff and volunteers to help families navigate the form. Since then the program has grown exponentially, resulting in an astounding 61 percent increase in the number of Buffalo Public School seniors completing the FAFSA in 2013. The program continues to grow. In 2013-14, it expanded to include the charter high schools in Buffalo. There were also double the number of volunteers, who spent double the amount of time in each school, ultimately putting in 2,600 service hours and touching two-thirds of the FAFSA forms filed in the district.

Thanks to them, thousands of kids who might never have gone to college will now have the opportunities they deserve.

“The FAFSA project turns college dreams into reality

AT SOME Buffalo high schools, almost every student is eligible for financial aid to help pay for college. But there’s often a major obstacle standing in their way: the FAFSA, or Free Application for Federal Student Aid. Families must fill out this form if they want access to financial assistance. The problem is, it’s notoriously long and complex, and particularly challenging for low-income students, who frequently have dynamic family situations, complicated financial issues or simply a mistrust of sharing their personal information.

Enter Nathan Daun-Barnett, associate professor of higher education administration in UB’s Graduate School of Education. In 2011, he launched the FAFSA Completion Project, which uses a team of students, staff and volunteers to help families navigate the form. Since then the program has grown exponentially, resulting in an astounding 61 percent increase in the number of Buffalo Public School seniors completing the FAFSA in 2013. The program continues to grow. In 2013-14, it expanded to include the charter high schools in Buffalo. There were also double the number of volunteers, who spent double the amount of time in each school, ultimately putting in 2,600 service hours and touching two-thirds of the FAFSA forms filed in the district.

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“Middle- and upper-income families will go to college. While cost will affect where they decide to go, they will go somewhere. For low-income families, cost may be the reason they don’t go at all.”

—NATHAN DAUN-BARNETT
More Ways We Effect Change, at Home and Abroad

The Legal Battleground

Through the newly launched Veterans Legal Clinic, UB law students and faculty provide free civil legal services to Western New York veterans, many of whom face overwhelming legal and financial issues such as custody challenges, benefit denials and bankruptcy. Clinic students are on the front line of the legal work for veteran clients through every step of the process.

Healing Bodies and Minds

Faculty volunteers and alumni from the UB dental school raise money, secure equipment and space, and otherwise help associate professor Othman Shibly (pictured) run the dental clinics he established in Syrian refugee camps in the Middle East after he witnessed conditions in a camp in 2012 and was moved to act. Most recently, he and Syrian teachers have teamed up to establish several underground schools—literally located in basements around Damascus—to help educate around 5,000 children in the war-torn country.

A World of Assistance

As medical director of the Western New York Center for Survivors of Refugee Trauma and Torture, UB physician and public health researcher Kim Griswold (pictured) provides crucial assistance to asylum seekers while simultaneously giving UB students invaluable training in caring for people from diverse cultural backgrounds. In addition to providing medical and psychiatric referrals to refugees, it is one of four centers in Western New York authorized by the U.S. government to help asylum seekers gain legal status.

Science-Minded

Preparing Western New York Kids for the Jobs of the Future

What could be cooler than studying the science behind hockey? For about 500 Buffalo-area middle schoolers, not much. Except, maybe, for extracting DNA with a renowned UB researcher, or, for our youngest learners, discovering science with Curious George.

Buffalo-area students from kindergarten through high school enjoyed these and many other hands-on activities during the second annual Science Week, a citywide event jointly held by UB, SUNY, the city of Buffalo, Buffalo Public Schools and a dozen other participants.

Along with the Interdisciplinary Science and Engineering Partnership (ISEP), a UB-led collaborative program aimed at making science education in Buffalo Public Schools more engaging, Science Week was designed to encourage local students’ interest in STEM (science, technology, engineering and math) fields. As Buffalo Mayor Byron Brown proclaimed, alluding to Western New York’s fast-growing life sciences and advanced manufacturing industries, “STEM jobs are our city’s future.”

Other Science Week highlights included Reading Science Aloud with Sabretooth at a local elementary school; the ISEP Science Summit at the Buffalo Museum of Science, where students from ISEP demonstrated their science projects; and Tech Savvy for Girls on UB’s North Campus, where middle-school girls explored STEM careers through workshops run by scientists, physicians and engineers from UB and other institutions.

In the words of event organizer and SUNY Trustee Eunice Lewin, “We all win when events and programs like Science Week encourage more Buffalo students to consider careers in science and technology.”

Partnering with Community

At UB, our mission is to create positive, lasting change in our local and global communities through the three pillars of public higher education: impactful research, experiential learning and engaged service. Here are just a few of the ways in which our students, faculty, alumni and staff support our various communities.
“THE SHOW we’re making is... not your typical production,” said Doug Fitch of “How Did We...?,” the work he created with students, faculty members and staff from the theatre and music departments while in residence at UB in fall 2014. “There’s a volcano on stage. There’s dancing sensory organs. And there is African water drumming.”

For many of the students, the most memorable aspect of the production was not its surreal elements; it was the opportunity to work side by side with the internationally renowned artist, producer, director and designer. The WBFO Visiting Professor in the College of Arts and Sciences involved UB people in all aspects of the production, from creating the sets and costumes to the actual show; UB students filled the acting roles, while both students and faculty members contributed original compositions to the live score.

Fitch’s semesterlong residency reflects the university’s commitment to providing students a first-rate educational experience, including the opportunity to learn from leading artists, scientists and scholars. Fitch has led award-winning theatrical productions for major arts institutions around the world, including the Metropolitan Museum of Art, the Los Angeles Philharmonic and the Royal Stockholm Philharmonic Orchestra.
IMAGINE A MAP that helps you not just see, but hear where you’re going. A map that literally tells you how to get from point A to point B. That’s one of the newest innovations to come out of UB’s Center for Inclusive Design and Environmental Access (IDeA Center), a part of the UB School of Architecture and Planning dedicated to making environments and products accessible to all segments of the population.

While the maps enhance the wayfinding experience for everyone, they were specifically designed to address the “last-mile” problem experienced by the blind. Audible GPS can get them to a specific place—a museum, say, or a college campus—but they are often left to their own devices once inside a building or public space.

To date, the IDeA Center, working with Touch Graphics Inc., has created three talking map models, each of which is located at a different institution for the blind. When you run your hands over a map, every building or feature you touch announces its name, a description of activities occurring there and directions to its location. There are also sound effects that serve as auditory landmarks—for example, on the map created for the Perkins School for the Blind in Massachusetts, chimes ring when you touch the bell tower.

“It’s really about giving this population a way to understand their environment,” said IDeA Center researcher Heamchand Subryan. “We’re providing a level of information that allows them to navigate their environment easily, without help.”
UB researchers discover that one of the world’s largest ice sheets may be vanishing faster than we thought

ON THIN ICE

THE GREENLAND ICE SHEET is the second largest block of ice on the planet. If it melted completely, ocean levels could increase 20 feet, wreaking havoc from Miami to Mumbai. Despite its massive size and global importance, however, little has been known about how quickly the ice sheet will shrink as a result of climate change.

The chilling reality is that Greenland may lose ice more rapidly than we previously thought, according to the most in-depth study of the region to date, led by UB Associate Professor of Geology Beata M. Csatho.

Csatho and her team studied nearly 100,000 locations, identifying areas of rapid shrinkage that current climate models miss. “The great importance of our data is that for the first time, we have a comprehensive picture of how all of Greenland’s glaciers have changed over the past decade,” Csatho says.

The research also shows that current simulations, which use the activity of just four glaciers to forecast how the entire ice sheet will act, are too simplistic to accurately predict how the ice sheet may contribute to rising oceans. “The local climate and geological conditions, the local hydrology—all of these factors have an effect,” Csatho says. “The current models do not address this complexity.”

Csatho worked with UB research professor Anton Schenk to develop a computational technique called Surface Elevation Reconstruction And Change (SERAC) detection, which fused together massive amounts of data from NASA satellite and aerial studies.

Next up for the research team is investigating why some glaciers respond differently to warming than others, and uncovering new ways to examine the causes—and effects—of global climate change.

UB led an international team for this massive study, including researchers from the University of Kansas, Utrecht University in the Netherlands, the Technical University of Denmark and Florida Atlantic University.

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BAK USA is working: working to change the electronics industry as one of the first U.S. companies to manufacture tablet PCs; working to revolutionize education in Third World countries; and working with UB students on everything from product development to marketing.

Bak is one of many companies that have been drawn to Buffalo through START-UP NY, the innovative tax incentive program that spurs economic development by connecting businesses with university resources and facilities. With new headquarters on Buffalo’s East Side, the company is following the successful business model the founders, J.P. and Ulla Bak, pioneered in Haiti after the 2010 earthquake, simultaneously providing much-needed manufacturing jobs to local workers (100 in Buffalo’s case) while also helping to bridge the digital gap in education by supplying low-cost tablets to developing countries.

It is also providing meaningful jobs and internships to UB students, including Bilel Neji (PhD ’15), who chose to stay in Buffalo after graduating to lead the company’s product development, and Sigismund “Ikey” Ajavon (BA ’15), a marketing intern who managed to boost Bak’s website ranking from 67 millionth to 3 millionth worldwide.

“UB has done a great job,” said J.P. Bak. “I have worked with universities before, and there is something about this university that really attracts you and makes you feel welcome. This is a home for us.”

UB is by far the statewide leader in attracting businesses through START-UP NY, an economic development program established by Gov. Andrew M. Cuomo in June 2013. As of July 2015, UB had partnered with 55 companies, which have pledged to create more than 1,800 jobs and invest more than $52 million in the region.
They called us cowboys,”
said Elad Levy, professor and chair
of UB’s Department of Neurosurgery,
recalling the response from other
neurosurgeons when he and his
colleagues presented the use of a wire
mesh stent device for treating stroke
in the early 2000s.

Their pioneering methodology has
received increasing validation over the
years. Now, a new international clinical
study led by Levy and co-author Adnan
Siddiqui, professor and vice chair of
neurosurgery at UB, is further proof that
the UB researchers (originally led by Levy’s
mentor, former department chair L. Nelson
“Nick” Hopkins) were right all along.

Published in the New England Journal
of Medicine, the paper found that stroke
patients had an 88 percent revasculariza-
tion rate when they received clot-busting
drugs in conjunction with the stent.

Without it, the success rate plummeted
to 35 percent.

The device is inserted through a
tiny incision in the groin, then threaded
through the arteries by catheter until
it reaches the blocked blood vessel
in the brain. When opened, it captures
the clot and pulls it out as the catheter
is removed. Normal blood flow is
quickly restored and damage to the
brain mitigated.

The treatment “provides the patient
the absolute best chance for a positive
outcome,” said Levy. “In many cases,
there’s no need for the ICU and no
need for rehabilitation. This is a
game-changer.”
"When you have the... selective advantage... genes must be... added sugar... toddler foods contain high... vitamin D... deficiency may affect up to... biometric technologies... what a face means... we study only today's... romanticize prison... has a tendency to... the world that... the escape has made... E. coli to produce... doesn't unstick, it... that can grossly under-... nanofibers and, like Velcro that... to subvert biometric technolo-... to all the different ways... has actually only been... the declining popularity of... a convention of the entertainment industry for more than 200 years... can grossly under-... and unreasonable expectations... it can lead... unreasonable expectations... it can help prevent cancer... have so deeply and... by gender role be-... showing that men are more... the potential consequences... of antibiotics... E. coli to produce... of antibiotics... may not exist. But if we... are looking at how social... escape has... other inmates."
311. Student clubs wow at International Fiesta

As usual, the annual talent competition packed the house, filling all 1,744 seats in the Center for the Arts Mainstage Theatre for the highly anticipated event.

For nearly three hours, the audience sat spellbound as 15 international student clubs brought their unique cultures to life in breathtaking performances. Students from the U.S. and abroad rehearsed for months to perform traditional African dancing and Japanese sword-fighting, Bollywood beats and Asian hip-hop. But it was the Latin American Student Association’s depiction of the Latin American diaspora, incorporating dazzling dance moves from the coasts of South America to the streets of New York City, that stole the evening—and won the top prize.

The fiesta is just one example of UB’s tremendous diversity. Not only are its domestic students from all walks of life, but the university consistently ranks in the top 20 in the nation for international student enrollment, with 5,000-plus students hailing from 115 countries. As Tazrin Hossain, council coordinator for the undergraduate Student Association (the fiesta’s sponsor), said, “We may come from different places, but our paths cross.”

With 17 percent of the student body composed of international students, even those who don’t study abroad get an international experience. But many do study abroad: 7 percent of all enrolled students, in fact, or seven times the national average.
TRADITIONS
OLD AND NEW

Our campus life is as diverse and dynamic as our student body, with more than 300 academic and cultural clubs driving popular traditions like International Fiesta. Even better, our students are always finding novel ways to connect, bringing new ideas and fun activities into the fold that help give UB’s large university a small-college feel.

BOATING LAKE LASALLE
For the first time in its 45-year history, the North Campus’ most photogenic spot was opened last summer to public kayaking and canoeing.

CRITICAL CONVERSATIONS
Now in its third year, this presidential program brings the country’s top scholars to campus for a public discussion of the major issues of our time, from “big data” to the microbiome.

WARM WEATHER WEDNESDAYS
UB began hosting this fun series of outdoor events on the North Campus in 2014, with public activities ranging from drumming and disc golf to painting flowerpots and flying kites.

OPEN CFA
In November, the inaugural Open CFA at the Center for the Arts celebrated the creative work—and work in progress—of students in the departments of art, theatre and dance, and media study.

THERAPY DOGS
During final exams each semester, the UB Libraries bring trained therapy dogs to campus to deliver stress-busting snuggles and face-licking. The program is so popular, it’s being emulated by campuses around the world.

“MORE COWBELL”
Started by a passionate fan in homage to a “Saturday Night Live” skit, the clanking of the cowbell revved up UB students—and went viral on social media—as the men’s basketball team won the MAC and headed to the Big Dance.
THERE WERE SIGNS early on that this would be a season to remember for the UB men’s basketball team—especially when they held halftime leads over perennial powerhouses Kentucky and Wisconsin.

But few could have predicted what came next. After a standing-room-only crowd filled Alumni Arena to see the Bulls win their last regular-season game, the team kept on running all the way to Cleveland—earning its first MAC title and clinching its first appearance in the NCAA Tournament.

March Madness proved to be an unforgettable experience for UB players, students and alumni alike. For the first time ever, fans could circle “Buffalo” on their bracket. Alums set up “watch parties” in Philly, and sent in selfies from Singapore. The official UB supporters bar in Columbus, Ohio (the site of UB’s NCAA game), had to turn away fans. The Bulls even earned a vote of confidence from the nation’s most famous basketball fan, as President Obama picked the #12 seed Buffalo to upset #5 West Virginia.

When the game finally rolled around, the Bulls gave the Mountaineers all they could handle, tying the score late in the second half. But our luck ran out with the clock, as West Virginia eked out a win.

While the Big Dance may have ended early for Buffalo, the record-setting season was an unprecedented success. The team proved it can play on a national stage. Fans got a taste of big-time college basketball. And alumni from around the world came together on one glorious day to cheer for their alma mater.
IT ISN'T OPENING UNTIL 2017. But UB’s new building for the School of Medicine and Biomedical Sciences is already having an impact, and not just on the downtown skyline.

Applications to the school are up 3.5 percent, while more accepted students are choosing UB. Meanwhile, new faculty hires continue apace in anticipation of the student body growing by nearly one-third for the first class in the new building. “The excitement created by the project is helping to raise awareness about the quality of our medical school,” notes Charles M. Severin, associate dean for medical education and admissions.

Rising from a 45-foot foundation hole at the corner of Main and High streets, the $375 million facility is the largest medical education building under construction in the U.S. Officials anticipate using 4,000 gallons of paint, more than 1 million square feet of drywall, and enough steel, if laid end to end, to stretch 25 miles—five times the distance from UB’s South Campus to the downtown construction site.

GAINING MOMENTUM

As the new building for the medical school rises, so do admissions

“When basic science and clinical departments are near each other, they can collaborate. There’s a much better opportunity to do translational research when you have those synergies working together.”

—ANNE B. CURTIS, PROFESSOR AND CHAIR, DEPT. OF MEDICINE
Three engineering students win coveted Goldwater scholarships

A record number of UB students win coveted Goldwater scholarships

THE BEST OF THE BEST

A record number of UB students win coveted
Goldwater scholarships

THE BEST OF THE BEST

A record number of UB students win coveted
Goldwater scholarships

OUR GOLDWATER WINNERS REFLECT UB'S
COMMITMENT TO WOMEN IN STEM FIELDS. A
GROUP OF UB WOMEN WHO ARE LEADERS IN
THOSE FIELDS—including engineering
dean Liesl Folks—has been actively
working to promote women in STEM,
including hosting the #5050by2050
Tweetathon and the region's first Women
in STEM Summit.

EACH YEAR, universities across the
U.S. are permitted to nominate
up to four students for the Barry
Goldwater Scholarship—one of the
most prestigious awards for un-
dergraduates in mathematics, the
natural sciences and engineering.
While UB generally performs well,
2015 marked a new high: Three
of our four nominees received the
prize, with the fourth earning an
honorable mention.

“Goldwater scholarships are
extremely competitive,” said Eliz-
abeth Colucci, UB's coordinator of
fellowships and scholarships. “Fort-
unately, we have no shortage of
exemplary students to nominate.”

The recipients, all of whom plan
to earn a PhD, are:

STEPHANIE M. KONG, a dual major in
chemical engineering and Spanish.
Kong studies the fundamental ther-
odynamic properties of model surfactant systems,
the potential applications of which include creating
eco-friendly dispersants for oil spill cleanups.

SHARON LIN, a chemical engineering major. Lin
researches methods of gene delivery, work that
has the potential applications of which include creating
eco-friendly dispersants for oil spill cleanups.

KRISTINA MONAKHOVA, an electrical engineering
major. Monakhova, who is among a team of
students designing and building a U.S. Air Force
satellite to more accurately track space debris,
also received the John R. Sevier Memorial
Scholarship Award, a national award for stu-
dents interested in space research or education.
As our trio of Goldwater Scholarship winners illustrates, the paths to success at UB are rich and varied, offering talented learners from all corners of the university a chance to excel in the classroom, laboratory, community—or halfway across the world. Here are a few students who shone particularly bright this past year.

**OUR STELLAR STUDENTS**

**CHINESE INTERPRETER**
Economics major and globe-trotter **CASEY ROTHBERG** is the second UB student ever to win the David L. Boren Scholarship, a highly competitive, international research fellowship for undergraduates studying overseas. Rothberg traveled this fall to Capital Normal University in Beijing, China, to study Mandarin, which she plans to use to help facilitate U.S.-Chinese relations.

**OUR STELLAR STUDENTS**

**ORGANIZATIONAL STRUCTURE**

**Casey Rothberg**

**MAKING THEIR CASE**
They may have been first-year students, but that didn’t stop **ROHIT SALLAGUNDA, ERIN DINGS, RYAN FOGLE** and **SEONG HEE (LUKE) KIM** from taking first place in the prestigious Whitman Competition in March—the fifth consecutive year a UB School of Management team has placed in the top two at the national business case competition. Another UB team took third place this year.

**ACING THEIR “ORALS”**
If at first you succeed, why not keep doing it? This year, **ALL UB DENTAL STUDENTS** achieved an impressive 100 percent pass rate on the National Board Dental Examination, a rigorous, two-part test that dentists must pass in order to be licensed. The entire class of 2016 passed Part I of the challenging exam, while all members of the class of 2015 passed Part II.

**TAKING PHYSICS FOR A SPIN**
Math and physics whiz **SEAN BEARDEN**, a recent UB graduate and Goldwater Scholarship recipient, is propelling his love of quantum mechanics into a brilliant future. Armed with a prestigious, three-year National Science Foundation (NSF) Graduate Research Fellowship, Bearden headed to the University of California-San Diego this summer to study spin lasers—futuristic gadgets that could pave the way to faster data transfer in computers.

**FAR-FLUNG FULBRIGHTS**
Our 2015 Fulbright scholars are taking their talents around the globe. **ABIGAIL LAPLACA**, a UB Presidential Scholar, is teaching young children in Panama, while anthropology major **ANNA PORTER** explored a major archeological site in the United Kingdom as part of the selective Fulbright Summer Institute. **SAMAH ASFOUR** (pictured), a recent graduate in political science and global gender studies, is in Jordan this fall on an English teaching assistantship.

**A HEAD FOR NUMBERS**
Three students majoring in mathematics/physics, computational physics and aerospace engineering—**DANTE IOZZO, NIGEL MICHII** and **ANDREW HARRIS**, respectively—formed an unstoppable interdisciplinary team whose project modeling the eradication of Ebola, based on a hypothetical cure, landed them a spot among 10 “outstanding winners” at the 2015 Mathematical Contest in Modeling. The competition, hosted by the Consortium for Mathematics and Its Applications, drew more than 7,600 applicants from 17 countries.
That is the goal, as stated by UB President Satish K. Tripathi, of three new Communities of Excellence—an initiative that will harness the strengths of hundreds of faculty from across the university. Through the Communities, multidisciplinary teams will work together to push the boundaries of human knowledge, create new educational opportunities and develop innovative ways to address the most critical problems facing humanity.

The three Communities, chosen over a yearlong process from nearly 100 initial proposals submitted by faculty, are:

1. **THE GENOME, THE ENVIRONMENT AND THE MICROBIOME (GEM):** advancing development of personalized medicine and empowering individuals to have greater control over and understanding of their health, the human genome and the human microbiome

2. **GLOBAL HEALTH EQUITY:** focusing on the social, economic, political and environmental conditions that lead to inequities, and tackling problems ranging from a lack of access to sanitation to high rates of disease

3. **SUSTAINABLE MANUFACTURING AND ADVANCED ROBOTIC TECHNOLOGIES (SMART):** developing the next generation of manufacturing technologies, processes and education that enable sustainable, cost-effective production of high-quality, customizable products

UB is investing $25 million over the next five years in these three Communities and RENEW (Research and Education in eNergy, Environment and Water), which was launched last year and was the university’s model for the Communities. The initiative emerged from the UB 2020 plan to advance our academic and research strengths in key areas.
Engineering alumnus Marcus Yam adds a Pulitzer to his collection of awards

**AN AMERICAN FLAG** popping up through the remnants of a flattened home.

A rescue worker’s mud-stained hands clutching a Bible.

A head bowed in prayer.

These are a few of the gripping images captured by Marcus Yam—the only photographer on duty for The Seattle Times when reports of a deadly landslide sent him rushing to the scene. He ended up spending days at the site, documenting the Oso landslide’s devastating effects in photos that would be shared around the globe.

The Times’ coverage of the tragedy—including Yam’s photos—earned a Pulitzer Prize, widely considered the highest honor in the country for journalism.

“It has been a very humbling experience. You don’t expect to win anything like that in your lifetime,” said Yam, who discovered his interest in photojournalism while taking photos for UB’s student newspaper, The Spectrum. He earned his degree in aerospace engineering from UB in 2006, and while his engineering background might seem unrelated, it actually informs his work on a daily basis. “I take a very analytical and technical approach to everything that I shoot,” said the photojournalist, who now works at the Los Angeles Times. Yam has also contributed regularly to The New York Times, and has earned numerous accolades, including a 2011 Emmy for “A Year at War,” a NY Times interactive feature documenting a year in the life of a U.S. battalion in Afghanistan.

**UB grad shares Pulitzer Prize for coverage of Washington landslide**

UB and Roswell Park receive $1.85M grant to launch stem cell research program

UB anthropology student receives prestigious Fulbright to UK

Smoking and drug abuse could more than triple annual ER visits

UB’s Warm Weather Wednesdays are back with more seasonal fun

UBThisSummer is back with something for everyone

With one false tweet, computer-based Hack Crash led to real panic

In consumers we trust: Customer reviews boost online shopping

This Slinky lookalike ‘hypertens’ helps us see tiny objects

Musicians and audience members share the stage for unique program of music and history

Aging well: UB pharmacologist’s book discusses the science of aging for the rest of us

UB’s Canty named SUNY Distinguished Professor

Pre-Seed Workshop will assess the viability of new startup concepts

Research unravels a link between a genetic mutation and autistic behaviors—and a way to undo it

UB School of Management certifies inaugural Health Care Management class

Six first-year MBAs win Verney case competition

UB graduating senior dedicated to worldwide gender equality wins Fulbright Scholarship to Jordan

Bulls post seventh straight 3.0 semester

NSA expands Internet spying that poses serious threat to American civil liberties,” UB expert says

UB Articulation Boot Camp addresses common speech difficulties

UB’s Rowe receives New York State Public Health Association award

Free health screenings and family fun at first Health Mall Community Day

Data breach that exposed millions is just ‘tip of the iceberg,” UB expert says

Study supports early intervention for prostate cancer patients who experience significant emotional distress

UB neurology chair receives Doctor of the Year award from Myasthenia Gravis Foundation

MORE ACCOMPLISHED ALUMNI
Among the 240,000 Bulls in 146 countries around the world, our graduates have gone on to do great things, like becoming Hollywood’s top talent manager (Shep Gordon, BA ’68), founding China’s leading search engine (Robin Li, MS ’94) or serving as chief education/medical officer for NASA’s Astronaut Office (Ellen Shulman Baker, BA ’74). Below are others in our talented alumni network who have accomplished great things in the past year.

**REAR ADM. REBECCA MCCORMICK-BOYLE (BS ’81)**

Capping a distinguished military career that has taken her around the world and back, nursing major McCormick-Boyle has been the U.S. Navy’s top nurse since 2013. In 2014 she became deputy chief, U.S. Navy Bureau of Medicine, Education and Training, and commander of Navy Medicine Education and Training Command. The UB Alumni Association recognized her achievements with a 2015 Distinguished Alumni Award.

**ALEJANDRO RIVERA BECERRA (PHD ’01, ME ’98, MS ’93)**

With four graduate degrees—including three from UB in industrial and environmental engineering—and a determination to use his education to help his home country, Rivera Becerra joined the Mexican foreign service in 2000. For the past two years, he has served as Mexico’s chief negotiator in the Durban Platform of the United Nations Framework Convention on Climate Change. He received UB’s International Distinguished Alumni Award in 2015.

**NICOLE C. LEE (JD ’02)**

Recipient of the UB Law School’s 2015 Distinguished Alumni Award for Public Service, Lee has spent much of her career working in human rights law around the world as president of TransAfrica Forum Inc. She stepped down in 2014 to start her own consulting firm, The Lee Bayard Group, through which she now focuses on human rights violations in the U.S.

**ADAM WEINBERG (MFA ’82)**

As Alice Pratt Brown Director of the Whitney Museum of American Art in New York City since 2003, Weinberg led the Museum’s capital campaign for a new 220,000-square-foot building in the Meatpacking District, which opened to critical and public acclaim on May 1, 2015. During his tenure, he has also overseen the organization of numerous exhibitions, award-winning educational programs and dramatic growth in the collection.

**THOMAS CURLEY (BA ’00)**

After earning a film studies degree at UB, Curley moved to Los Angeles, where he has spent the past 14 years working as a production sound mixer on more than 150 films and television shows. He got a chance to be in front of the cameras this year, nabbing a BAFTA Award and then an Academy Award for his sound-mixing work on “Whiplash.” He was also recently inducted into the Academy of Motion Picture Arts and Sciences.

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**DAVID F. MITCHELL (BS ’84)**

Mitchell, who studied mechanical engineering at UB, tested rockets for the Navy and worked on several launch vehicle and spacecraft programs at NASA’s Goddard Space Flight Center before serving as the lead project manager for the MAVEN mission—the first devoted to understanding Mars’ upper atmosphere. The spacecraft entered orbit around the Red Planet last fall. Mitchell is now the director of flight projects at Goddard.

**SARA CZAJA (PHD ’80, MS ’77)**

Czaja, recipient of two graduate degrees in industrial engineering from UB, is co-director of the Center on Aging at the University of Miami and director of the NIH-funded Center on Research and Education for Aging and Technology Enhancement (CREATE). A renowned expert on quality-of-life issues for the elderly, she was invited to join a panel of leading scientists at this year’s Nobel Prize ceremonies in Stockholm to discuss global challenges facing an aging society.
June in Buffalo: A creative explosion

For 35 of the past 40 years, some of the world’s most visionary musicians and composers have gathered here for a week to explore the boundaries of new music. “It would be hard to name more than a handful of major composers of the past 30 years who have not appeared on its faculty roster,” stated The Wall Street Journal in a June 8 article about UB’s June in Buffalo festival—an event so influential it has spawned dozens of imitators around the country.

Presented as a leading component within UB’s Robert and Carol Morris Center for 21st Century Music, June in Buffalo features master classes, lectures and workshops during the day, with concerts and recitals open to the public in the afternoons and evenings. Throughout the weeklong event, dozens of new and adventurous works are performed—some by the typically outstanding lineup of faculty composers (including, this past year, four Pulitzer Prize winners), and some by emerging composers in attendance. June in Buffalo prides itself on providing these young and upcoming artists with the rare opportunity to hear their works performed by established ensembles, and to get feedback from some of the field’s leading artists.

This year also marked the 30th anniversary of SUNY Distinguished Professor David Felder’s tenure as artistic director of the festival. Felder restarted the event in 1986 after several years of dormancy; it was originally founded in 1975 by the revered American composer and UB faculty member Morton Feldman.

“We’ve probably done performances of around 700 or more young composers’ pieces. I think those performances, and the help we’ve given to people over the years, have been really important to the profession.”

—DAVID FELDER
Data is more than numbers. Facts and figures tell a story too—in this case, of UB’s depth and breadth in terms of people, scholarship and the constellation of degree programs we offer students from all parts of the world. As we look to our future, we see increased academic and economic opportunity, along with the commitment of our faculty, staff, students and alumni to finding solutions for society’s most critical issues.

A WEALTH OF ACADEMIC OPPORTUNITIES
As the largest public research university in New York State, UB offers the most comprehensive array of academic programs—more than 100 undergraduate and combined degree programs, and more than 300 graduate and professional degree programs and certificates—giving students the broadest opportunity for scholarly exploration and success in life.

AFFORDABILITY AND IMPACT
The Business Journals ranked UB among the nation’s TOP 50 public universities for exceptional education, strong graduation rates and affordable tuition. The average debt load for UB students at graduation is $21,228, compared to the average national student loan debt of $28,400. UB students’ debt load on federal loans is $19,896, or $10,000 less than the national average.
A TIMELY PATH TO COMPLETION
Our dedication to providing the resources our students need to finish their degrees on time has resulted in UB far exceeding the national average for graduation rates. Among public universities, our four-year graduation rate is 53 PERCENT, compared to a national average of 33 percent; our six-year graduation rate is 72 PERCENT, compared to a national average of 57 percent.

AN ECONOMIC POWERHOUSE
UB and its affiliated entities generated approximately $1.6 BILLION in revenues from all sources last year, making the university one of the leading economic engines in the state and region.

MORE OPPORTUNITY FOR MWBES
UB is the leader among its SUNY peers for the largest spending percentage with businesses certified in New York State as Minority and Women-Owned Business Enterprises (MWBES), having spent more than $17 MILLION in fiscal year 2014-15.

AT A GLANCE
NAME
University at Buffalo
The State University of New York

LOCATION
Three campuses: North, South and Downtown

AFFILIATION
A flagship institution in the State University of New York system, UB is the largest and most comprehensive campus in the 64-campus SUNY system. It is a member of the Association of American Universities.

FOUNDED
1846

RESEARCH
$386.6 million

STUDENT BODY (HEAD COUNT)
29,944 (2014-15 academic year)
19,829 undergraduate
10,115 graduate and professional

STUDENT BODY (GEOGRAPHIC REPRESENTATION)
Western New York: 36 percent (2014-15 academic year)
Other New York: 38 percent
Out of state: 3 percent
International (at WNY campuses): 17 percent
External (offshore): 6 percent

DEGREES AWARDED
8,742 (2014-15 academic year)

DEGREE PROGRAMS
More than 100 undergraduate degrees, including combined degrees
More than 300 graduate and professional degree programs

EMPLOYMENT
6,788 full-time equivalent employees (FY 2014)

FACULTY
2,844 total faculty
Ratio of undergraduate students to undergraduate instructional faculty: 13 to 1

ALUMNI
More than 240,000 in 146 countries
More than 128,000 in New York State

ANNUAL BUDGET
Operating revenues: $664 million (FY 2014)
Financial statement revenues: $1.204 billion (FY 2014)

ENDOWMENT
$624.8 million (2013-14)

ATHLETICS
Division I, Mid-American Conference

MASCOT
Victor E. Bull

AN UNMITIGATED ENTHUSIASM FOR A UB EDUCATION
UB experienced a record high enrollment of nearly 30,000 students in fall 2014 and awarded 8,742 degrees in 2014-15, representing a 12 PERCENT increase in the number of diplomas granted over the previous year.

A GLOBAL PERSPECTIVE
Since our founding in 1846, when two Canadians were among the first class of 18 students, a global outlook has formed the core of our heritage and strength as an institution. Today, we have 83 exchange agreements with universities abroad, and are ranked among the nation’s TOP 20 universities for the enrollment of international students. This rich diversity of people and ideas ensures that our students, faculty, staff and community play an active and impactful role in a world without borders.

ALUMNI AROUND THE WORLD
More than 240,000 UB alumni live in every state and 146 countries.
The Ways We Support

Donors to UB offered support in various ways for varied purposes in 2014-15. Their collective generosity encompassed a whirlwind online campaign, private foundation support, faculty philanthropy and more. With each gift, our contributors demonstrated their commitment to excellence in teaching and research, and their understanding that the best public universities have the strongest private support.

Spurring Global Health and Travel

Roberta (MLS ’74, BA ’70) and George Stevens are passionate about addressing global health issues. They also want to share their love of travel. Half of the couple’s $2 million bequest commitment is earmarked for vision research, especially on macular degeneration, which affects 20 million people worldwide and is prevalent in Roberta’s family. The remainder will support study abroad for students in the College of Arts and Sciences.

Solar Endurance Test

The School of Architecture and Planning benefitted from a spirited student-driven crowdfunding campaign to support its entry in the U.S. Department of Energy’s biennial Solar Decathlon competition. Monies raised supported student competitors and went toward the GRoW Home, a 1,100-square-foot solar-powered structure that is vying with entries from 15 other schools in an elite, international competition to create energy-efficient homes of the future.

Beat-the-Clock Fundraising

In just 25 hours, the first Day of Giving smashed its goal of $25,000, raising $80,805 from 454 donors. The fast-paced appeal on June 2-3 was spurred by a $25,000 challenge commitment from the UB Alumni Association board of directors. It drew gifts of all sizes in a campaign that emphasized participation over dollar amount, although one donor gave $10,000. More typical was the alumna who hadn’t given in several years and put a $300 gift on her credit card.

A Big Boost for Physics

John Ho, SUNY Distinguished Service Professor of Physics, and his wife, Martha Leung, wanted to celebrate their long association with UB, as well as enhance future development of the graduate program in physics. The couple expressed their enduring appreciation with an endowed fund supporting graduate students in the department.

A Record Award for Nursing

The New York City-based Helene Fuld Health Trust Scholarship Fund has committed to a three-year grant of $600,000, the largest private grant ever awarded to the School of Nursing. Established by Dr. Leonhard Felix Fuld and his sister, Florentine, in their mother’s memory, the Fuld Trust Scholarship Fund assists students in the Accelerated Second Degree Baccalaureate Program in Nursing, as they prepare for careers in an increasingly complex health care field.

Class Action

Eight classes of alumni have stepped forward to support a campaign to sponsor signature learning stations in the auditorium of the new downtown School of Medicine and Biomedical Sciences building. Each class has met the $25,000 threshold for this giving opportunity, helping to launch a new era of medical education, clinical care and research in Buffalo.

Bringing Prosperity Home

The Prentice Family Foundation awarded fellowships to a record class of 34 UB students this year. The Western New York Prosperity Fellowship supports students who are committed to improving the region once they graduate through job creation and economic development. It represents the largest annual gift given to the university, amassing more than $500,000 per year, and advancing a range of career aspirations to further the area’s economic growth.

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As a premier, research-intensive public university with $386.6 million in annual research expenditures,* UB is committed to supporting the work of our faculty and students, whether they’re scientists, social workers, lawyers or linguists. As the academic health center continued to take shape in downtown Buffalo, we took our research power to the next level by investing $25 million over five years in the Communities of Excellence—a grand vision to amplify UB’s ongoing efforts to solve the challenges facing society, while simultaneously creating new multidisciplinary learning opportunities for students. Here are some additional highlights from the year’s successes in research and scholarship.

**Wiping Out Infectious Disease**

Building on its extensive experience with global HIV research, the UB School of Pharmacy and Pharmaceutical Sciences received a $12 million grant from the National Institutes of Health (NIH) to help ensure the quality of NIH-funded clinical research on the world’s most widespread and stubborn infectious diseases. The seven-year contract renewal will continue the school’s work to provide vital quality assurance for international clinical studies, including antiretroviral strategies, the prevention and eradication of HIV, and developing urgently needed treatments for viral hepatitis, tuberculosis and related diseases.

**Powering the U.S. Research Community**

Used worldwide by academia, industry and government, a supercomputing management tool developed in 2010 for the National Science Foundation (NSF) by UB’s Center for Computational Research (CCR) has helped maximize the country’s research supercomputing efficiency over the last decade. Based on that success, this year the NSF awarded the CCR a $9 million, five-year federal grant extension to improve the tool, which was originally designed to monitor the performance of the NSF’s supercomputers and their software programs, and which has since been expanded into an open-source version for global distribution.

**Translating Other Cultures**

An award-winning poet and scholar of the history and rhetoric of science, Douglas Basford received one of 20 coveted National Endowment for the Arts (NEA) Literature Translation Fellowships to support his translation of sonnets by the 15th-century Italian poet Domenico di Giovanni. The NEA calls its support of projects like Basford’s “one of the most important ways we can broaden our nation’s perspectives while also making the work of these talented writers and translators more available.”

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*Reported to the NSF, 2013-14