



the PIPER

CMU'S NEWS SOURCE FOR FACULTY & STAFF 10/14 ISSUE

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Victorious Veterans



PHOTO BY TIM KAULEN

AT THIS YEAR'S ANDY AWARDS, TWO MEMBERS OF THE PHYSICS DEPARTMENT WERE HONORED FOR YEARS OF SERVICE, DEDICATION AND CITIZENSHIP. CHUCK GITZEN (LEFT), STOREROOM MANAGER, RECEIVED THE ANDY AWARD FOR DEDICATION AND WAS HONORED FOR HIS 45 YEARS AT CMU. JOE RUDMAN (RIGHT), A SCIENTIFIC PROJECT ADMINISTRATOR, EARNED THE ANDY AWARD FOR UNIVERSITY CITIZENSHIP AND WAS CELEBRATED FOR HIS 55 YEARS AT THE UNIVERSITY. READ ABOUT THE ANDY AWARD WINNERS ON PAGES 6-7.

"It's Incredible!"

Shaw Elated With White House Honor

Byron Spice

President Barack Obama has selected Carnegie Mellon's Mary Shaw as a recipient of the National Medal of Technology and Innovation — the nation's highest honor for achievement in technology, innovation and invention.

"It's incredible! What a superb recognition for my students and colleagues, for CMU, for software engineering, as well as for me," Shaw said. "The university has provided me with a rich and fertile intellectual environment with wonderful colleagues and students. I doubt that I could have been as successful anywhere else."

The Alan J. Perlis University Professor of Computer Science is a leader in software engineering research. She has been a member of CMU's computer science faculty since 1971. Her work on software architecture touches everything from the anti-lock braking systems in

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Uplifting

Tartans' Little Captain Is Inspirational

Lauren Butler

Team captains lead by example, and such is the case with Brock Kitterman, a 9-year-old who is the youngest Tartan football player and co-captain in school history.

Brock, who "officially" became a member of the team last spring after signing a letter of intent in front of the players and staff, was paired with Carnegie Mellon by Team IMPACT, an organization that matches courageous kids facing life threatening or chronic illness with collegiate athletic teams to help lift their spirits and improve their quality of life.

At 12 weeks old, Brock's parents were told he was completely blind and the doctors diagnosed him with Bilateral Retinoblastoma, an incredibly rare eye cancer. During chemotherapy treatments, one of the agents he received to fight the

disease significantly compromised his hearing.

Brock is legally blind with 20/200 vision in his right eye and 20/400 vision in the left. He can hear without his hearing aids, but misses a lot.

When his mother, Tammy, realized that he was struggling with his peers, she

decided to reach out to Team IMPACT, which placed him with CMU.

"We were certainly skeptical at first, but after meeting the guys from the team and the coaching staff, we knew we had been paired with a great team at a great school," she said.

CONTINUED ON PAGE TWO

A Hot Topic



Bruce Gerson

Richard Caruso (above), fire safety manager for Carnegie Mellon's Environmental Health & Safety Department, conducted two mock dorm room fires

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Hillman Gives \$5 Million Boost to BrainHubSM Initiative

■ Ken Walters

Carnegie Mellon's BrainHubSM initiative got a boost in September in the form of a \$5 million gift from Pittsburgh business leader Henry L. Hillman and major recognition from the White House.

The Hillman gift will provide endowment funds to help support presidential graduate fellowships in areas broadly connected to brain research. And it will provide seed grants through Carnegie Mellon's ProSEED program for innovative research projects that will connect faculty from disciplines across the university.

The gift also will help support the training of the next generation of brain researchers on a global scale; as part of BrainHub, Carnegie Mellon scientists will work with university partners from China, India and the United Kingdom, and the Hillman gift will be matched with other sources of BrainHub support.

Carnegie Mellon established BrainHub to bring together global strategic partners from government, public, private and philanthropic sectors to develop innovative computational and technological approaches for studying the links between brain and behavior. This effort will lead to new insights into topics such as cognition, learning and perception, and will shed light on brain disorders such as autism and Parkinson's disease.

The BrainHub initiative leverages the university's well-known interdis-



ciplinary culture, bringing together computer science, humanities, science, engineering, business, public policy and the arts to conduct research on the brain and the related fields of data science and the science of learning.

"Understanding how the brain works is among the great challenges of the 21st century, with results that promise to improve human health and well-being in dramatic ways," said Carnegie Mellon President Subra Suresh. "Carnegie Mellon can make a unique and distinctive contribution to this global effort by bringing together our strengths in neurobiology, computation, data sciences, human learning and behavioral science to create urgently

needed research frameworks, tools and technologies, and by working in close concert with the network of BrainHub universities around the world. We are deeply grateful to Henry Hillman for supporting our vision with this magnificent new gift."

The afternoon of the gift announcement, Carnegie Mellon scientists Nathan Urban, Marlene Behrmann and Michael Tarr attended an event at the White House, where CMU's work to advance brain research was recognized by the Office of Science and Technology Policy (OSTP) in its update on President Barack Obama's BRAIN (Brain Research through Advancing Innovative Neurotechnologies) Initiative.

In its report, the OSTP noted CMU's support of the federal effort through BrainHub, stating that "linking brain science to behavior via the application of machine learning, statistics and computational modeling will be a hallmark of CMU's efforts, along with commercialization of new technologies and applications."

Carnegie Mellon researchers are recognized for their expertise in areas that promise to pave new avenues for methods to measure and analyze both brain activity and behavior and then to link these domains through the application of cutting-edge computational tools. BrainHub will promote the dissemination and commercialization of the most promising of these advances so that they are widely used, furthering brain research, policies and practices across the globe.

Carnegie Mellon's BrainHub connects global partners including the University of Warwick, which has a concentrated expertise in the field of digital health; Sun Yat-sen University, whose medical school has broad clinical expertise in Alzheimer's and autism; Oxford University, through its International Brain Mechanics and Trauma Lab; and the Indian Institute of Science, which recently launched its own brain research center.

For more information on BrainHub, visit www.cmu.edu/brainhub.

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Carnegie Mellon University publishes an annual campus security and fire safety report describing the university's security, alcohol and drug, sexual assault, and fire safety policies and containing statistics about the number and type of crimes committed on the campus and the number and cause of fires in campus residence facilities during the preceding three years. You can obtain a copy by contacting the Carnegie Mellon Police Department at 412-268-2323. The annual security and fire safety report is also available online at www.cmu.edu/police/annualreports.

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Uplifting: Tartans' Little Captain Is Inspirational CONTINUED FROM PAGE ONE

Brock has been immersed in the entire Carnegie Mellon football team experience. He attended and participated in picture day. He hangs out with his "teammates" on and off the field, and helps get out the pads and pants for the team. He even gets to ride in the golf cart used to transport equipment.

Outside of school and attending football practices, Brock enjoys spending time with his family, friends and pets. He also likes competing in triathlons, playing video games, listening to books, and is a rollercoaster enthusiast.

A group from the Tartan football team surprised him at one of his triathlon races when they arrived to cheer him on. After the race was over, they again surprised Brock with a trip to Kennywood.

"I have never let Brock go anywhere without me, but the guys have been so great and I knew they would have a great time and take good care of Brock," Tammy said.

At Kennywood, Brock rode the Black Widow seven times in a row.

"He had our stomachs turning," said football senior and co-captain Dustin Schneider. "Brock is an amazing kid. He went through more struggles prior to his first birthday than some people experience in a lifetime, and the fact that every



TARTAN CAPTAINS FRED BOLIO (83), TIM SWANSON (2), DUSTIN SCHNEIDER (49) AND ALEXANDER D'ANGELO (54) STAND IN SOLIDARITY AND SUPPORT OF THEIR NEWEST CO-CAPTAIN, BROCK KITTERMAN (CENTER), WHO WAS PAIRED WITH CMU THROUGH TEAM IMPACT, AN ORGANIZATION THAT MATCHES KIDS FACING LIFE-THREATENING OR CHRONIC ILLNESS WITH ATHLETIC TEAMS TO HELP LIFT THEIR SPIRITS AND IMPROVE THEIR QUALITY OF LIFE.

time he is around the team he is smiling ear-to-ear is truly inspirational."

Players and coaches say Brock has been an incredible addition to the Carnegie Mellon football team, and they are looking forward to having him around for many years to come.

"The Carnegie Mellon football team is thrilled to add Brock to the Tartan football family," said head coach Rich

Lackner. "I hope that our team has made as big an impact on Brock as he has made on us."

"Brock is an inspiration to all those associated with the Carnegie Mellon football team," Lackner continued. "We are ALL blessed to have Brock in our lives."

For more about Team IMPACT, visit www.goteamimpact.org/.

Center Focused on Brain Research Celebrates 20th Anniversary

■ Shilo Rea

Some marriages just get better with time.

That would describe the ongoing collaboration between Carnegie Mellon and the University of Pittsburgh who, side by side, have been tackling the mysteries of the brain for 20 years through the Center for the Neural Basis of Cognition (CNBC).

The center got its start with a \$12 million gift from the Richard King Mellon Foundation. The CNBC combines Pitt's strengths in bioengineering, math, psychology and neuroscience with Carnegie Mellon's strengths in psychology, computer science, biological sciences and statistics to investigate the neural mechanisms that give rise to human cognitive abilities.

The White House recently recognized neuroscience research programs at CMU and Pitt for their support of the federal BRAIN Initiative.

"To have two universities across the street from each other and to have them decide to collaborate rather than compete is very special," said Peter L. Strick, Pitt co-director of the CNBC, distinguished professor and chair of the Department of Neurobiology at Pitt.

The center also trains the next generation of neuroscientists through an interdisciplinary graduate and postdoctoral training program and fosters close collaborations between faculty.

"The CNBC has an open architecture that allows interactions between scientists and colleagues — regardless of their home institution. Students can seamlessly move between Pitt and CMU labs and draw on the expertise of faculty at both institutions. This cross-discipline and cross-university atmosphere has allowed the CNBC — and therefore CMU and Pitt — to recruit and keep scientists and researchers and attract the brightest students," Strick said.

Marlene Behrmann, the CMU co-director of the CNBC and the George A. and Helen Dunham Cowan Professor of Cognitive Neuroscience, said that it is a really exciting time to be a neuroscientist — especially in Pittsburgh.

"We have the perfect confluence of all of the building blocks — technology developments, incredible equipment and computational and theoretical advances — along with a strong ethic of working collaboratively," Behrmann said.

"I believe we really are poised to continue making significant scientific progress," she added, "and that progress will begin to bear fruit for understanding the relationship between the brain and behavior, and using this knowledge to improve the diagnosis and treatment of people with various brain-based impair-

ments. CMU and Pittsburgh are so well situated to push forward in these areas."

Major Milestones

CNBC researchers have made an impact across the spectrum of neuroscience, from understanding how neurons behave to the discovery of the consequences of brain injury, diseases and disorders.

Highlights include:

- CMU neuroscientist Alison Barth invented a mouse model that allows researchers to visualize, identify and study individual neurons as they are activated in a living animal. These mice were the first fluorescent reporters of neural activity to be developed and remain widely used by neuroscientists today. Barth's model has been licensed for use by every major pharmaceutical company in the U.S. and by scientists worldwide to study a variety of topics including sleep, addiction, learning, memory and spinal cord injuries.
- CNBC researchers at Pitt — Andy Schwartz, Mike Boninger and Elizabeth Tyler-Kubera, with support from Rob Kass and Valerie Ventura at CMU — made a major breakthrough in the field of brain-computer interfaces when they enabled a quadriplegic woman to control a robotic arm and hand, and achieve her goal of feeding herself a chocolate bar after 11 years of nearly total paralysis.
- CMU's Byron Yu and Pitt's Aaron Batista and Patrick Sadtler found for the first time that there are limitations on how adaptable the brain is during learning and that these restrictions are a key determinant for whether a new skill will be easy or difficult to learn. Understanding the ways in which the brain's activity can be "flexed" during learning could eventually be used to develop better treatments for stroke and other brain injuries.

The success of the CNBC has led to dramatic growth since its inception. Programs have been added in neural computation, multimodal neural training, brain and behavior, and neurobiology of disease. Its number of graduate students has increased from 11 in 1994 to 139 in 2014, and many alumni from this program have gone on to prestigious positions.

"NEURONS AND OTHER MEMORIES" ART ON THE BRAIN

Carnegie Mellon's Miller Gallery is featuring "Neurons and Other Memories ... Work In and Around the Brain" now through Sunday, Oct. 26.

Curated by Adjunct Associate Professor Patricia Maurides in collaboration with the Center for the Neural Basis of Cognition (CNBC), the exhibition features investigations, translations and reflections of neural mechanisms by artists and neuroscientists.

The exhibit coincides with the CNBC's 20th anniversary celebration.



"NET GENERATION MEMORY PALACE"
BY AARON REGAL, ARCHIVAL INKJET
PRINT



"SYNAPTOGENESIS" BY GREG DUNN, ENAMEL ON COMPOSITION GOLD LEAF



"ONE, NO ONE AND ONE HUNDRED THOUSAND NO. 24" BY JOANA RICOU,
MIXED MEDIA ON WOOD

“The Book of Mormon” Gives Back to Drama

■ Erin Keane Scott

Carnegie Mellon’s School of Drama has given a lot of talent to the hit Broadway production “The Book of Mormon.” And over the past couple of weeks, “The Book of Mormon” has been giving back.

Since it premiered in 2011 with three School of Drama grads in originating principal and ensemble roles, several more alumni have joined the cast. In late September, when the national tour rolled into town, the New York producers invited current Carnegie Mellon students to attend a performance at Heinz Hall.

Denee Benton (A’14), who stars as Nabulungi in the national tour, noted that her castmates could tell how much the Pittsburgh house loved her during these performances.

Benton and her co-star, David Larsen (A’02), gave a post-performance talkback for Carnegie Mellon alumni moderated by Professor and Head of the School of Drama Peter Cooke on Sept. 29.

During the conversation Cooke asked Larsen what he thought distinguished the School of Drama from other conservatory training programs. Larsen

replied that it was the strong foundation in acting theory that set School of Drama alumni apart in the musical theater world.

“To tell the story of the song is more important than hitting the notes,” Larsen said. “I mean, you’ve gotta hit the notes but I would rather see a story told.”

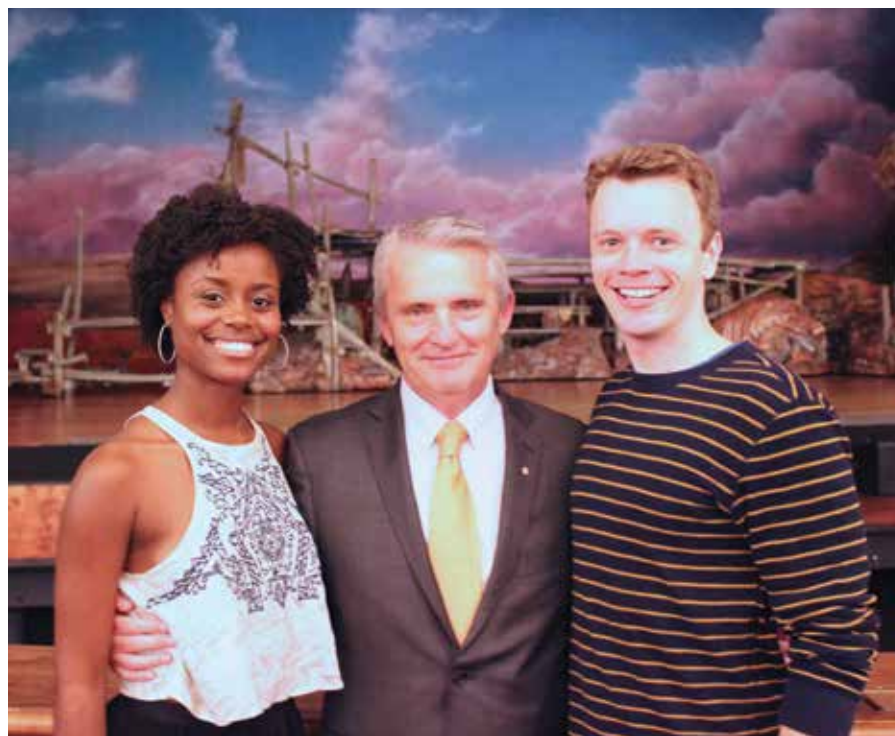
Before their two weeks in Pittsburgh were over, Larsen and Benton made their way back to Oakland for a visit to the Purnell Center for the Arts, where they spoke to current School of Drama students about their work in “The Book of Mormon.”

Many students were curious about Benton’s recent transition from the conservatory to the professional atmosphere.

Benton suggested to students that they never get too comfortable, that they take directorial advice with grace and that they always believe in the innate gifts that helped them win the role.

Larsen also offered up some wisdom from his 12 years as a working actor.

“You should never need to take



DENEEO BENTON (A’14) AND DAVID LARSEN (A’02), CO-STARS OF THE BROADWAY HIT “THE BOOK OF MORMON,” RETURNED TO THEIR ALMA MATER FOR A TALKBACK, MODERATED BY PETER COOKE (CENTER), HEAD OF THE SCHOOL OF DRAMA.

extra classes if you continue to apply what you learned here,” Larsen said.

“It’s those who stick around, it’s those that persevere, that’s who ‘makes it.’”

Mock Dorm Room Fire Emphasizes Safety

CONTINUED FROM PAGE ONE

last month on the CFA lawn to help spread the word to students about the importance of smoke detectors and sprinkler systems.

The first fire, portrayed to be in a Carnegie Mellon-owned student residence, was quickly extinguished by the installed sprinkler system, but the second fire in an off-campus facility fully engaged the entire dorm room within a minute.

“Fire sprinkler systems offer residents an additional level of safety

because they can contain and control the fire immediately in the room of origin, and often extinguish the fire before the fire department arrives,” said Caruso, who noted that all CMU-owned residence halls are equipped with smoke detectors and sprinkler systems.

Caruso encouraged students living in off-campus housing to investigate to see if their residence has a fire alarm or sprinkler system, or that smoke alarms on every floor, at the very least, are present. He said the batteries in the smoke

detectors should be checked frequently to make sure the detector is in good working condition.

“There is no such thing as a ‘safe’ city or town when it comes to avoiding the risk of fire for college students. Fire safety should be something that goes with you wherever you reside, particularly in off-campus housing,” Caruso said.

To see a video of the mock dorm room fires, go to www.cmu.edu/ehs/. For more on the EH&S Fire Safety program, go to www.cmu.edu/ehs/fire/index.html.

Open Enrollment Begins Nov. 3

Plans Available with Highmark, UPMC, HealthAmerica

■ Emily Baskin

Open Enrollment for 2015 benefits will take place from Monday, Nov. 3 until 5 p.m. (ET) on Monday, Nov. 17.

During this time, employees have the opportunity to review benefit options and make new elections for 2015. Employees who do not elect their benefits during this period will be automatically enrolled in the same benefits they currently have in 2014 (except flexible spending accounts, in which employees must actively enroll each year to participate).

Elections made during Open Enrollment are effective on Jan. 1, 2015, and will remain in effect for the entire calendar year. Employees can only change benefit elections during Open Enrollment, unless they experience a qualified life or family status change during another time of the year.

CMU will continue to offer plan options with Highmark, UPMC and HealthAmerica. Most of the contracts between Highmark and UPMC will end on Dec. 31.

The state of Pennsylvania has enforced a “Consent Decree,” which may



A MOCK DORM ROOM FIRE WAS CONDUCTED ON THE CFA LAWN TO HIGHLIGHT THE IMPORTANCE OF SMOKE DETECTORS AND SPRINKLER SYSTEMS.

CONTINUED ON PAGE TWELVE

Empowering Intervention

Students, Alums Tackle Sexual Assault with Mobile Technology

■ Kelly Saavedra

Lisa is at a party with her friend Danielle. It's getting late, and a guy they met when they arrived now has Danielle cornered in the crowded room. He's getting physical and trying to take her outside to his car.

Two mobile apps created by graduate-student teams at Carnegie Mellon's Integrated Innovation Institute are aimed at empowering friends and bystanders, like Lisa, to intervene in situations such as this.

With the "NightOwl" app, Lisa could have reported the behavior — in her own words or via the app's prewritten messages — directly to the host or other guests, and sparked action.

Or, using "SPOT (A Problem)," she could have sent information about the aggressive behavior in real-time to designated risk managers at the party, who would have been alerted through a wristband that vibrates and emits light.

The Carnegie Mellon graduate-student teams used their engineering, design and business backgrounds to develop prototypes as part of their capstone projects underwritten by the institute. The university has filed provisional patents on both prototypes on the students' behalf.

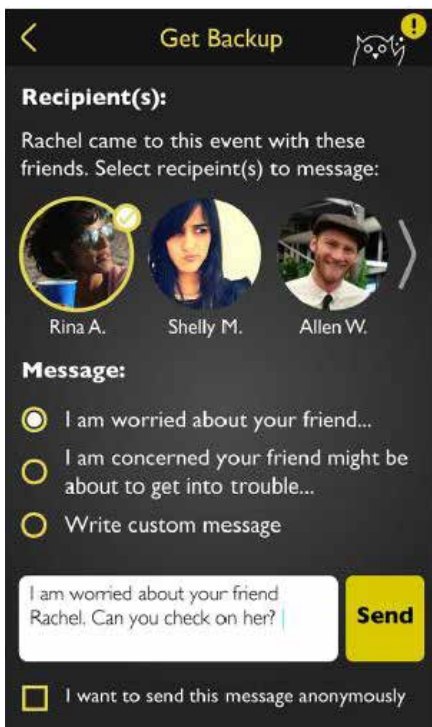
"Finding solutions to on-campus sexual assaults is as complicated as the issue itself and education-focused efforts need to be amplified with action-based solutions," said Integrated Innovation Institute Co-Director Eric Anderson, an associate dean of the College of Fine Arts and an associate professor in the School of Design.

"Those emerging from among the affected demographic may hold the most promise to engage peers and resolve the situation," Anderson said.

For many reasons that are widely debated, including the role of intoxication, fewer than one in 20 attacks are reported, according to the U.S. Department of Justice, and those that are have proved difficult to prosecute.

Carnegie Mellon's Interim Provost Nathan Urban calls this a "critical moment" as universities across the country confront the issue.

"We are extremely proud to see



potential solutions to this nationwide problem developed here at the Integrated Innovation Institute," Urban said. "Products such as NightOwl and SPOT could provide students and administrators with tangible but simple means to collectively reduce sexual misconduct. They represent an important first step toward changing student attitudes and



reducing the incidence of rape, on campus and off."

When Carnegie Mellon alumnus Leah Yingling (E'13) was attacked, she wasn't at an on-campus party. She was jogging on a secluded path in her hometown, a path she'd run on hundreds of times before. She somehow managed to dial 911 on the mobile phone in her pocket while being held at knifepoint. An alert sounded when the dispatcher answered and spooked the attacker, who ran off and later was apprehended by police.

"What if I'd been able to discretely activate a loud alert, a strobing light, a mobile response to my loved ones? Emergency responders may have come to the scene. My family may have been notified that I was in danger. Others on the running trail may have been notified that a distressing situation was occurring nearby," Yingling said.

This kind of brainstorming with friends led three of her fellow Carnegie Mellon alumni — Jayon Wang (E'13), Siri Ramos (E'13) and Alan Fu (E'13), founders of LifeShel — to create Whistl, a smartphone case with an embedded alarm. Currently in its testing phase,

ABOVE: (LEFT TO RIGHT) CMU ALUMNI ALAN FU (E'13), AMANDA YUAN (DC'14), JAYON WANG (E'13), ELIZABETH KRAMER (DC'14), KATHERINE ZITTERBART (DC'94) AND SIRI RAMOS (E'13) COMBINE THEIR TALENTS AND SKILLS AT LIFESHEL, ONE OF 16 ALUMNI STARTUPS TO RECEIVE FUNDING FROM CMU'S OPEN FIELD ENTREPRENEURS FUND.

THE NIGHTOWL (FAR LEFT) AND SPOT (LEFT) APPS ARE DESIGNED TO EMPOWER FRIENDS AND BYSTANDERS TO INTERVENE IN POTENTIALLY DANGEROUS SITUATIONS.

Whistl enables users who feel they are in danger to send a digital cry for help to emergency responders, campus police and a predetermined network of friends and family. In the event of an active shooter, or a fire, the message would alert people nearby to move away from the area.

"Not only can these tools empower the user," said Yingling, "there is also a potential for them to make would-be attackers think twice, and I think that in itself can be a very powerful thing."

LifeShel is one of 16 alumni startups this year to receive funding from CMU's Open Field Entrepreneurs Fund, which provides early-stage business financing to recent Carnegie Mellon alumni entrepreneurs.

Peter Boatwright, a co-director of the Integrated Innovation Institute and the Carnegie Bosch Professor of Marketing at the Tepper School of Business, said, "No single entity can solve this issue, but the combined efforts and skill sets of nonprofits, businesses, academic institutions, activists, social organizations and others can help end sexual assault by addressing it from all angles."

LIFESHEL IS MAKING NOISE

In the past six months, LifeShel has:

- been endorsed by President Barack Obama;
- visited the Office of Science and Technology Policy to discuss strategies for combatting sexual assault with a dedicated White House task force;
- hired CMU alumni to join their team;
- been awarded funding from CMU's Open Field Entrepreneurs Fund; and
- had July 8 proclaimed "LifeShel Day" by Pittsburgh City Council for their efforts toward combatting sexual assault.

Form and Function

Andy Award Winners Are University Role Models

■ Bruce Gerson

Bodies in motion tend to stay in motion. Even for 100 years.

That law of physics appropriately rings true for two members of the Physics Department, who enjoyed the distinction of winning Andy Awards and Years of Service citations for their combined 100 years at Carnegie Mellon at this year's staff recognition ceremony on Sept. 30.

Joe Rudman, scientific project administrator, earned the Andy Award for University Citizenship and was celebrated for his 55 years at the university. Chuck Gitzen, storeroom manager, received the Andy Award for Dedication and was honored for his 45 years at CMU.

Joining Rudman and Gitzen as 2014 Andy Award winners were Tresha Wade for Innovation; Leon "Pete" Smith and William Taylor for Community Contributions; Diane Stidle for Culture; and Rubab Jafry O'Connor for Commitment to Students.

Here's a look at this year's honorees.

University Citizenship: Joe Rudman

Rudman has been a valuable member of the Physics Department for more than five decades, but it's his many efforts outside of the department that made him this year's choice in the University Citizenship category.

He has presented more than 100 etiquette dinners for undergraduate and graduate students; delivered talks during Family Weekend, Homecoming and Orientation; and has served on numerous university committees, including the commencement student speaker selection committee and the student disciplinary committee. He has served as an adviser to students seeking prestigious national scholarships and fellowships. And he's volunteered as the assistant golf coach for more than 30 years.

Rudman, who has a Ph.D. in English, has taught classes as an adjunct faculty member at the Tepper School and Dietrich College. He is an expert in authorship attribution and specializes in 18th century author Daniel Defoe. He has given talks around the world on the subject and has been cited in many international publications.

"To Physics, he is a constant. To campus, he is who you can call," wrote his nominator Anne Witchner, assistant dean of Student Affairs. "Joe is unique and special, and Carnegie Mellon has benefited greatly from his decision to remain here for 55+ years."

"Over the years, the name Joe Rudman has been synonymous with

caring and commitment," wrote Vice President for Campus Affairs Michael Murphy in a supporting letter. "He makes people around him better than they would have been, and he never gives up on those in whom he believes.

"Joe is inordinately dedicated not just to the tasks or responsibilities under his purview, but also to the university as a whole," Murphy added. "He is ever present at university events and programs, and he is a staunch advocate of the many and varied campus activities that make this such a rich community."

Dedication: Chuck Gitzen

Gitzen wears many hats for the Physics Department. He is the storeroom manager, purchasing agent, Mr. Fix-It, Mr. Mover and the "general go-to-guy" for more than 150 faculty members, post-doctoral researchers, graduate students and staff.

"Chuck is thoroughly committed to serving our department. Day in and day out, he just gets the job done, no matter what it is," wrote his nominator Stephen Garoff, professor and head of the Physics Department. "In everything he does, Chuck is committed to doing a quality job."

Garoff said that although the department has grown significantly over the past few years, Gitzen has continued to perform his duties at the highest level, while always remaining calm, professional and friendly.

"He is dedicated to his work and performs every task with care and creativity," Garoff said.

Professor Sara Majetich recalled that when she arrived at CMU in 1990, Garoff told her that Gitzen was the best thing about the department. "[And] he's absolutely right," she wrote in a supporting letter.

"In the other places I've been there's no equivalent. There may be a supply room, but there's no one to promptly and reliably place the orders and keep track of the paperwork. There's a reason that so many of my grad students have acknowledged Chuck Gitzen in their Ph.D. theses. My students all hope to graduate before Chuck retires. I don't know how we will ever replace him," Majetich said.

She also noted his pleasant demeanor.

"He's always cheerful and helpful to others, even when I know he's had tough times in his own life. He never complains — even when the rest of us would," Majetich said.

Physics Business Manager Patrick Carr calls Gitzen's job performance "nothing but impeccable."



LEON "PETE" SMITH (LEFT) AND WILLIAM TAYLOR, BUS DRIVERS FOR THE GELFAND CENTER, WON ANDY AWARDS FOR COMMUNITY CONTRIBUTIONS.

"His commitment to his job is like no one I have ever seen before. Chuck possesses the attitude of 'Let's get 'er done,'" Carr said in a supporting letter.

Community Contributions: Leon "Pete" Smith and William Taylor

Simply put, Smith and Taylor, bus drivers for the Leonard Gelfand Center for Service Learning and Outreach for a combined 35 years, make a large percentage of the outreach and service activities of CMU faculty and students possible.

"These drivers go above and beyond, taking care of the buses as if they were their own — cleaning them and checking mechanical elements regularly to ensure that passengers are transported in safe vehicles," wrote nominator Judith Hallinen, assistant vice provost for Educational Outreach. "Most service programs take place in the evening and on weekends, and the drivers are flexible to meet the needs of the users."

Susan Polansky, faculty liaison for the Modern Languages Tutoring for Community Outreach course, praised them for their dedication and dependability.

"Without fail, through rain and snow, very early in the day or late in the day, they have met us at the appointed hours and often waited for us to make the return trip to campus if the visits have been short. They have just been wonderful: punctual and congenial as well as excellent, safe drivers," she wrote in support of their nomination.

Satvika Neti, a member of Moneythink, a student organization that works with urban youth to help educate them about personal finances, said Taylor and Smith were vital to its success.

"The Gelfand drivers were absolutely essential to our organization hav-

ing such remarkable growth in its first year," Neti wrote. "It was imperative that we had at least one site that didn't need Port Authority ... and because of the flexibility of the Gelfand Center drivers, we ended up having two."

Minnar Xie, former president of FORGE, called their services "invaluable" in helping the organization to build its roster of student mentors for local refugees and in providing a space [the bus] each week for student volunteers to bond and share their experiences immediately after visiting refugee homes.

"We are so grateful for the service Bill and Pete have offered us, especially in picking up our Saturday afternoon shifts," Xie said.

Commitment to Students: Rubab Jafry O'Connor

As associate director of the Undergraduate Business program for the Tepper School, O'Connor is an adviser and confidant to business majors and minors, exchange students and to various business clubs. With more than 200 students in the program each year, it's not an easy task, but her commitment to students is exceptional.

"She rises to the challenge and far beyond, being proactive in reaching students who may be struggling, affirming those who are doing well, and urging many to participate in program events that help them build their professional development," wrote her nominator Stephen Pajewski, director of the Undergraduate Business program.

Pajewski specifically noted a monthly brunch she created called "Waffles, Coffee and Professors," which gives students the opportunity to meet with faculty and to talk about their courses and interests; her work in planning networking events with employers;

and her efforts in planning the school's etiquette dinner and business fashion show.

He also praised her for her willingness to help international students far from home.

"Rubab is from Pakistan, and she has had advisees from Pakistan, and recently one exchange student from the Doha campus," Pajewski recalled. "She builds relationships with these students from her home country, making them feel comfortable in Pittsburgh and at CMU, and at times conversed with them in their native language of Urdu. On numerous occasions she has invited students to her home for a home-cooked dinner."

Student Melissa Dileo calls O'Connor a mentor and role model. "She is honestly one of the most caring individuals I have ever met and continues to guide me every single day, whether it is in schoolwork or in life," wrote Dileo in a supporting letter.

Alysia Finger (TPR'14, A'14) said O'Connor played a critical role in her academic, professional and personal development.

"I know I speak for the majority of business undergraduates when I say that Rubab's trust, support and mentorship have been crucial to my growth at this university," she wrote.

Innovation: Treshea Wade

Wade, assistant director of Alumni Communication and Online Services at the Tepper School of Business, is being recognized for her leadership role in helping to design and launch new

alumni communication tools, including the "Tepper Ticker" electronic newsletter, the Alumni Reunion Weekend App, the Tepper Online Magazine App, and a new annual giving social media campaign.

"An incredibly hard worker, she has earned a reputation for her imagination, creativity and innovative ideas especially related to online communication with alumni and social media," wrote her nominator John Sengenberger, executive director of Alumni Relations at the Tepper School. "A skilled artisan of her craft, she is always learning the latest trends and has applied the insights she is learning in her courses at the Heinz College to her work in the office."

In a supporting letter, Meghan Bollens, director of Annual Giving for the Tepper School, praised Wade for her innovative approach to alumni relations and fundraising, her positive attitude, flexibility and creative thinking. Bollens noted Wade's work to strategically improve the Tepper School's LinkedIn presence, her critical role in bringing the Tepper Ticker to fruition and her key role in launching a webinar series.

"Treshea is a student of communication, social media and marketing, and she is constantly reading expert commentary, attending webinars, collaborating with colleagues from other top schools and searching for best practices. She brings this knowledge base to the table, helping to shape our online strategy with not only her expertise but the data to back it up," Bollens said.

Ann Powers, senior executive



DIANE STIDLE, (CENTER), BUSINESS AND GRADUATE PROGRAMS MANAGER IN THE MACHINE LEARNING DEPARTMENT, WON THIS YEAR'S ANDY AWARD FOR CULTURE. PICTURED WITH HER ARE DEB CAVLOVICH AND GEOFF GORDON.

director of Individual Giving and Alumni Relations for the Tepper School, credits Wade for her work in improving communication with younger alumni.

"Her social media fundraising campaigns have enabled us to increase annual support from a very key demographic that has helped us to continue to break fundraising records from year to year," Powers said.

Culture: Diane Stidle

The Ph.D. students in the Machine Learning Department fondly call Stidle the "mom of the department." Faculty members call her the department's "heart and soul."

That's why Stidle, the business and graduate programs manager in the Machine Learning Department, is this year's Andy Award winner for Culture.

"Diane makes everybody feel wel-

come not only with her warm personality and light-hearted sense of humor, but also with her genuine human touch," wrote Professor Christos Faloutsos in a nominating letter.

Since becoming the Machine Learning Department's first staff member in 1997 (it was then called the Center for Automated Learning and Discovery), Stidle has worked to make the office environment "home" to faculty, staff, students and alumni.

"Since that day she has worked enthusiastically and consistently to foster a wonderfully positive and supportive department culture, consistently exceeding expectations along every dimension," wrote eight professors in a supporting letter — Tom Mitchell, William Cohen, Geoffrey Gordon, Robert Kass, Barnabas Poczos, Alex Smola, Larry Wasserman and Eric Xing.

The professors noted her "self-defined role as a helper and confidant" to students and her "superb community-building skills." They credited her for creating an engaged and loyal alumni group; for instituting weekly departmental teas for students, faculty and staff; for encouraging students to organize retreats; and for recently organizing a reunion for students, faculty and alumni at a major Machine Learning conference in Chicago.

"Diane Stidle has demonstrated the highest standards of CMU, a genuine concern for every person she interacts with, and an amazing ability to foster a culture in which we all feel we belong," they wrote.

In a supporting letter signed by 33 Ph.D. students, Stidle was called "the glue that holds the department together."

"She knows us all personally, her door is always open and she receives everyone with warmth," they said.



TRESHEA WADE (LEFT) AND RUBAB JAFRY O'CONNOR WERE THIS YEAR'S RECIPIENTS OF THE ANDY AWARDS FOR INNOVATION AND COMMITMENT TO STUDENTS, RESPECTIVELY.

Students Get Personal in Public Performance

■ Bruce Gerson

The backstory is often the best story.

That's the premise behind *The Story Collider*, a storytelling group that recently teamed up with Carnegie Mellon's Public Communication for Researchers, a graduate student group, to stage a live show at the Rex Theater on Pittsburgh's South Side.

Titled "Reactions," the show featured the humorous, triumphant, emotional and personal backstories of five CMU grad students — four Ph.D. candidates and one master's degree student.

Let the show begin.

Adam Foote, a Ph.D. student in biology who studies evolution, told a tragically funny story of how a January FedEx delivery of 30 sea urchins for an experiment went awry. Due to extremely frigid temperatures, the delivery from San Diego to Pittsburgh was delayed.

"The urchins were sitting in a box in Indianapolis at temperatures that could freeze whiskey. By the time they got to me, there was absolute chaos in the box. Many of the urchins were angrily shedding eggs and sperm in copious amounts, covering the inside of the box with orange and white goo," Foote recalled. "And about five were frozen."

After failed attempts to revive the terribly smelly urchins, including putting them in a tub of warm water, washing them off and giving the two that were in the best shape — "George and Georgina" — cocktail shrimp, the subjects were lost and his experiment doomed.

But, Foote chalked it up to a learning experience.

"Since then, all of the urchins that I have gotten shipped to me have stayed alive. In death, those urchins helped their friends and neighbors live through the shipping process. As long as it doesn't get down to -5 Fahrenheit for the high again," he said laughing.

Casey Canfield, a Ph.D. student in engineering and public policy, wanted

to work in Antarctica after earning her bachelor's degree from Olin College near Boston, but she ended up working as a marine technician on a sea vessel off the coast of Hawaii. Her role was to maintain the science equipment, help the scientists on board and deploy equipment into the ocean using a pulley and A-frame that extended out from the ship over the ocean.

"[Operating the pulley and A-frame] was a more complicated version of rubbing your stomach and patting your head at the same time. Luckily I never broke anything," Canfield said.

While she admits her reputation as a marine tech was less than stellar, it was her engineering skills that brought her to the forefront when the Internet connection was lost.

"Some would argue that my most important job was that I was in charge of the Internet. The Internet was kind of a big deal, because for the crew — they're at sea for months at a time — this is their only connection to the outside world," she said.

During her midnight to noon shift she used her Linux administration handbook to figure out the code to get the firewall to work properly.

"It was my proudest moment on the ship, because not only had I in one night learned what a firewall was and how it worked, I also fixed it. And I proved I was valuable ... even if I made mistakes all the time," she said.

Vrushali Fangal, a master's degree student in computational biology, told an emotional story of how she followed her research into neuroscience from humble beginnings in India to Germany, France, Italy, Luxembourg, Sweden, Switzerland, Australia and now to Pittsburgh. And it's taken her from being timid and introverted to "normal," she says smiling.

"My research took me to so many places. I started interacting with people and I changed as a person. When I was a kid I used to be alone. I did not talk to



many people, unless they talked to me. So, now I can strike up a conversation with people, you know. I'm normal," she said.

Fangal said she also gained an inner strength from experiencing racial discrimination first-hand during a trip to Switzerland, where her friend was badly beaten.

"I went into my shell, again," she said. "But then I just decided I had to do something about it, I had to get my life balance back. I started to read a lot about life ... about psychology."

"It's because of my research that I went to all these places and I had all these experiences and I know myself better now. I know how to handle myself," she said.

Matineh Eybpoosh, a Ph.D. student in civil and environmental engineering, had an epiphany while studying at CMU. She realized she was trying to be "the perfect person" to please everyone, except herself.

"When I came to CMU [from Iran] I thought I was following my plans and dreams but this was what everyone else had in mind for me. It was all about what others thought I should do."

"I started to see how free people were here. I saw their imagination, their ambition, their ideas. And I started to focus on what I wanted to do," she said.

Her new focus led to several important changes in her research and in her personal life. She is now studying structural monitoring of pipelines.

Eybpoosh said making the changes was very challenging, but she's glad she did.

"I've changed much for the better. It's been a life-changing experience. It sounds simple, but it was difficult to realize and then more difficult to make the changes," she said.

Anvesh Komuravelli, a Ph.D. student in computer science, is singing at Indian festivals thanks to a reality TV show and the Melody Voice Clinic in his native India.

As a teenager, Komuravelli's voice remained at a high pitch for several years. It even cracked and progressed to the point that it became difficult to pronounce words, let alone full sentences.

"It was an unusual problem and no one knew what to do about it. We had no clue what was happening," he said.

But one day, while watching a reality TV show, a doctor from India's Melody Voice Clinic told a very familiar story.

"He spoke about how he had the same problem that I had. So we went to the center to see what to do about it," Komuravelli said.

The diagnosis was puberphonia, the persistence of an adolescent high-pitched voice after puberty. Komuravelli explained that there was a gap between his vocal chords that caused air to escape.

He opted for voice therapy over surgery, and over the next several months his voice began to improve. His voice dropped in pitch and he was able to speak clearly.

Komuravelli will be singing Bollywood hits and Indian Classical tunes at the Diwali Indian Festival of Lights on campus later this month.

Fade to black.

"It's Incredible!" Shaw Elated With White House Honor

CONTINUED FROM PAGE ONE

cars to the international banking system.

"Building the reliable software systems that are the bedrock of commerce and communication today would not be possible without the engineering principles for large-scale software architecture pioneered by Mary and her colleagues at Carnegie Mellon," said CMU President Subra Suresh.

"Her hard work as a software engineer and educator has made CMU a leader in the field," Suresh added. "This national recognition for her contributions to technology and society is richly deserved and all of us at CMU join in congratulating her."

Shaw also is an educational innovator who has developed computer science



MARY SHAW

curricula from the introductory to the doctoral level, including graduate programs targeted at software professionals.

"The award is a significant landmark, showing that this work is going in the right direction," Shaw said.

Shaw was one of eight recipients.

They will receive their medals at a White House ceremony later this year.

"These scholars and innovators have expanded our understanding of the world, made invaluable contributions to their fields, and helped improve countless lives," President Obama said. "Our nation has been enriched by their achievements, and by all the scientists and technologists across America dedicated to discovery, inquiry and invention."

The medal is awarded annually to individuals, teams, companies or divisions of companies for their outstanding contributions to America's economic, environmental and social well-being. It recognizes those who have made lasting contributions to America's competitive-

ness, standard of living and quality of life through technological innovation, and those who have made substantial contributions to strengthening the nation's technological workforce.

Previous winners include CMU alumnus Charles Geschke, co-founder of Adobe Systems and a 1973 Ph.D. graduate in computer science; the late Watts Humphrey, a fellow of CMU's Software Engineering Institute; the late alumna Stephanie Kwolek, the inventor of Kevlar who earned her bachelor's degree in chemistry in 1946; and Gordon Bell, a renowned computer designer at Digital Equipment Corp. and Microsoft, and a former computer science faculty member at CMU.

Eyes On The Road

Smart Headlights To Help Drivers in Rain and Snow

■ Byron Spice

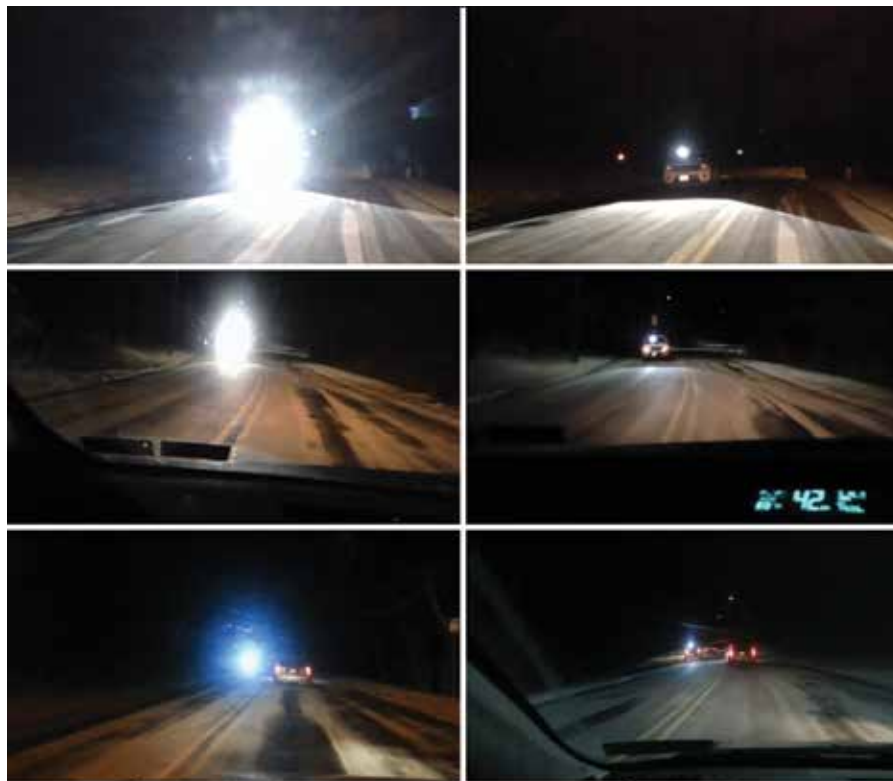
Driving at night can be challenging, and poor weather only complicates matters. Those behind the wheel can find their visibility dangerously impaired by the glare of rainwater, oncoming headlights or falling snow, particularly if the drivers are using their high beams.

A smart headlight developed at Carnegie Mellon's Robotics Institute could make concerns like these a thing of the past. During snow or rain showers, the headlight tracks individual snowflakes and raindrops in the immediate vicinity of the car and blocks the narrow slivers of headlight beam that would otherwise illuminate the precipitation and reflect back into the driver's eyes.

The headlight also can sense and track the number of oncoming drivers, blacking out only the small parts of the headlight beam that would normally shine into the driver's eyes.

"Even after 130 years of headlight development, more than half of vehicle crashes and deaths occur at night, despite the fact there is much less traffic then," said Srinivasa Narasimhan, associate professor of robotics. "With our programmable system, however, we can actually make headlights that are even brighter than today's without causing distractions for other drivers on the road."

Robert Tamburo, the project's lead engineer, presented findings from tests of the system at the European Confer-



THE RESEARCH TEAM ASSEMBLED THEIR EXPERIMENTAL SYSTEM FROM OFF-THE-SHELF PARTS AND MOUNTED THE SYSTEM ATOP THE HOOD OF A PICKUP TRUCK, SERVING AS THE EQUIVALENT OF A THIRD HEADLIGHT DURING STREET TESTS.

ence on Computer Vision in Zurich, Switzerland, in September.

Instead of a standard headlight or cluster of LEDs, the system designed by Narasimhan, Tamburo and the team uses a DLP (Digital Light Processing) projector. This enables the researchers to divide the light into a million tiny beams, each of which can be independently controlled by an onboard computer.

In addition to preventing glare, the projector can be used to highlight the

traffic lane — a helpful driving aid when roads have unmarked lanes or edges, or when snow obscures lane markings.

When tied to a navigation system, the programmable headlights also can project arrows or other directional signals to visually guide drivers.

"We can do all this and more with the same headlight," Narasimhan said.

That's in contrast to new headlight systems that some automakers are installing.

The research team assembled their experimental system from off-the-shelf parts and mounted the system atop the hood of a pickup truck, serving as the equivalent of a third headlight during street tests. The team plans to install a smaller version next year in the headlight slot of a truck.

Though currently larger than standard headlights, Narasimhan said the smart headlights could be accommodated by trucks and buses, whose headlights are especially prone to causing glare because they are positioned high off the ground. Eventually, miniaturization should make the smart headlights compatible with smaller vehicles.

The research team includes Takeo Kanade, professor of computer science and robotics; Anthony Rowe, assistant research professor of electrical and computer engineering (ECE); Abhishek Chugh, a master's degree student in computer science; Subhagato Dutta and Vinay Palakkode, both master's degree students in ECE; and Eriko Nurvitadhi and Mei Chen of Intel Research.

The research was supported by Ford Motor Co., the Intel Science and Technology Center for Embedded Computing, the Office of Naval Research and the National Science Foundation. It is part of the Technologies for Safe and Efficient Transportation Center, a U.S. Department of Transportation Center at Carnegie Mellon.

Breathing New Life Into Artificial Lungs

■ Daniel Tkacik



Keith Cook (left) is working to extend the life of artificial lungs for patients waiting for lung transplants.

For the last 20 years, artificial bridge lungs have lasted days to a couple weeks before failure and require close monitoring inside a hospital. Cook, now supported by a four-year, \$2.4 million grant from the National Institutes of Health, is looking to extend the life of the artificial lung to three months and make it so patients can use it in the comfort of their own home.

"That's the holy grail — three months," said Cook, an associate professor of biomedical engineering. "Two is probably acceptable, but for quality

of life, you don't want a patient having to keep coming back to the hospital."

Cook, who is collaborating with researchers from the University of Washington, Columbia University and Allegheny General Hospital in Pittsburgh, said promising initial results show a substantial decrease in the formation of blood clots inside the artificial lung, one of the largest hurdles in building a reliable long-term device.

"Anytime blood comes in contact with artificial materials, it starts to clot," Cook explained.

One way in which Cook's team was able to decrease blood clots was through the design of the device. The fact that design was critical occurred to him about a year ago, when his team developed a novel design that prevented blood from pooling and forming clots. That device reached his team's goal of lasting two weeks without forming significant amounts of clotting, but Cook



KEITH COOK SAYS THE DESIGN OF THE DEVICE AND THE COATINGS ON THE SURFACES ARE CRITICAL BECAUSE THEY CAN HELP STOP THE FORMATION OF BLOOD CLOTS.

thinks it may have lasted up to a month if the team had lengthened its testing period.

Coatings on the device's artificial surfaces also can help fight clotting, and this will be Cook's focus under the NIH grant. To do this, the team must combine several coating techniques that mimic what human blood vessel cells — called endothelial cells — are doing to prevent blood clots. Once this is perfected, Cook

believes the longevity of the artificial lung can increase to three months.

Cook believes that patients could be using one of these artificial lungs in the next five to 10 years.

"It was completely unheard of a few years ago, and there are people who will tell you it's unheard of now. I think it will happen, and I want to be the guy to do it," he said.

From The Trenches

History Course Inspires Alumnus To Reproduce Great-Grandfather's World War I Photo Album

■ Shilo Rea

When Carnegie Mellon graduate Dean Putney (DC'11) saw his family for Thanksgiving in 2011, his mother showed him his great-grandfather's old World War I photo album that had been hiding in his grandmother's closet.

Walter Koessler was a lieutenant in the German army during World War I and had carried a camera throughout his service. Looking at the album he'd made after the war, Putney recalled what he learned in his History of Photography class at CMU and knew it was something special.

Now, as the world marks the 100th anniversary of "the war to end all wars," Putney has reproduced his great-grandfather's album into a book, "Walter Koessler 1914-1918: The personal photo journal of a German officer in World War I." A corresponding exhibit, "Photography in the Trenches, 1914-1918," is running at the Carnegie Museum of Art through December 2014.

"Taking Linda Benedict-Jones' class on the history of photography was

instrumental in bringing this album to life," said Putney, who majored in the Dietrich College's Information Systems Program and is now a software engineering consultant for large publishing websites like Boing Boing and Reddit. "Without her class, I wouldn't have felt that this was unusual or that people would care about it."

Putney reached out to Benedict-Jones, adjunct professor of history and curator of photography at the Carnegie Museum of Art, for her input and expertise. Benedict-Jones was fascinated with it because it represented a unique, one-of-a-kind object.

"There's something so rich in this story — a CMU student studying information systems, who happens to take an elective in the history of photography, had his eyes open and knew what his grandmother found was something important," said Benedict-Jones, who wrote the foreword in the book. "It became a passionate project for him, and it's wonderful that Carnegie Museum of Art is the first to exhibit these photographs."



ABOVE IS AN ACTUAL PHOTO TAKEN DURING WWI BY WALTER KOESSLER.

FOR MORE INFORMATION ON THE BOOK, "WALTER KOESSLER 1914-1918: THE PERSONAL PHOTO JOURNAL OF A GERMAN OFFICER IN WORLD WAR I," VISIT [HTTP://WALTERKOESSLER.COM/](http://walterkoessler.com/).

FOR MORE INFORMATION ON THE CARNEGIE MUSEUM OF ART EXHIBIT, "PHOTOGRAPHY IN THE TRENCHES, 1914-1918," VISIT [WWW.CMOA.ORG/](http://www.cmoa.org/).

Benedict-Jones gave Putney general advice on how to remain as faithful as possible to the album's original contents and how to convey scale and authenticity in a book. Putney took it from there and began researching the photographs.

To support the project, Putney created a Kickstarter campaign with a \$50,000 goal. He ended up raising nearly \$115,000, making it one of the most-funded publishing projects on Kickstarter.

"With WWI's centennial coming up, people were really interested in it," Putney said. "It became a topic of conversation."

The end product is a book containing 107 pages and approximately 670

photographs. The photos candidly show Koessler and his comrades as they faced long stretches of inactivity coupled with bursts of violence.

Adam Ryan, curatorial assistant for the art museum's photography department, worked with Putney to develop the exhibit. Housed in the museum's space dedicated to 1860-1920, the photos provide an aesthetic alternative to the fine art displays. Twenty-three of the album's pages are showcased.

"The album itself is remarkable — it contains very early examples of aerial surveillance photographs taken of a battlefield," Ryan said. "It also includes formal portraits of officers but most are spontaneous snapshots."

Innovation Palooza

Engineering Students Offer Solutions for the Homeless

■ Tara Rae Moore

Forecasts of another particularly cold winter have raised concerns about space in Pittsburgh's homeless shelters, which contain only 375 beds. There are an estimated 1,500 homeless individuals in the city.

Carnegie Mellon students addressed this concern by putting their technical and creative skills to good use. Their results were on display during the College of Engineering's Impact-a-Thon, part of the Innovation Palooza event that took place in early October.

Student teams that participated in the competition were given less than a week to research the problem and come up with temporary and economically viable shelters that could be erected during cold weather.

Each group approached the challenge in a unique way, with ideas that ranged from converting old public buses

into portable homes to outdoor shelters that can be folded up and carried like a backpack during the day.

"The most difficult part was trying to grasp the problem in such a short time," said Rajlakshmee, who is working on her master's degree at CMU's Integrated Innovation Institute. "We had to go from understanding the problem to building the prototype in five days."

The teams were required to have at least one engineering student, but many were interdisciplinary groups with students from across the university, like Rajlakshmee's team, which won second place and \$600 in the competition with members Alex Surasky-Ysasi from the Integrated Innovation Institute; Priya Ganadas from the School of Architecture; and Linh Thi Do from the Tepper School of Business.

"You need the diversity of perspectives," said Surasky-Ysasi. "Linh Thi

reminded us, 'Don't forget about cost!' and I would ask, 'Mechanically, does this work?' and Raj would say, 'But the fabric!'"

The students presented their solutions to judges, who determined which teams would receive the three prizes.

The third-place prize of \$400 went to Porchlight, the truly innovative idea of not building shelters at all. After careful research, the group discovered that a major hurdle for many of the individuals in need is the stigma of homelessness. They also found that it is very hard to open new shelters, but that 68 percent of the people they surveyed said they would harbor those in need in their own homes. Based on this information, the team developed a third-party service that would match up willing hosts with those needing a place to stay.

"We introduced the concept of having a third party — a caseworker

— who does a background check, so there's a great degree of confidence that the people in your house are reputable people that don't have any problems," said Michael Richardson, a graduate student in human-computer interaction (HCI) whose team included fellow HCI students Katarina Shaw (CS'15), Jason Azares (CS'15), Ron Kim (CS'15), Jim Martin (CS'15) and electrical and computer engineering student Joseph Carlos (E'15).

The second-place team developed a product called a Satellite Shelter. The structure is flat when folded, but it can be laid on the ground and opens into a tent-like sleeping bag. It is insulated with Mylar, an affordable polyester material used in space blankets, and has a waterproof layer with ventilation. Wool blankets also keep occupants warm and make the space more comfortable.

Green Residence won \$1,000 for first place. The team included graduate students Wei-Hsun Chen (CMU'15), Fan Sai Kuok (CMU'15), Vanessa Li (CMU'15), Hongqiao Lu (CMU'15)

Cohon University Center

A New Name, Now a New Beginning

■ Bruce Gerson

After receiving a new name and months of preparation and anticipation, the Jared L. Cohon University Center addition will soon begin in earnest. The start is tentatively scheduled for late November with completion anticipated in late Spring 2016.

The 62,000 square feet of space being added to the CUC will bring new fitness facilities, swimming pool enhancements, a new studio theater for student performance groups and a stunning university presence along Forbes Avenue.

At a town hall meeting about the project, Bob Reppe, director of design for Campus Design and Facility Development, explained that the front door and lobby area to the CUC will sit along Forbes in front of the current loading dock and service area. The current turnaround will be removed to allow for new construction.

Reppe said the lobby would be easy to navigate with plenty of natural light and a main hallway, or “spine,” that will lead you by the bookstore to McConomy Auditorium and the Information Desk.

Director of Athletics Josh Centor and Director of Student Activities Elizabeth Vaughan gave a preview of the new fitness and studio theater components.

Centor said the new facilities would include a weight room with heavy and light free weights, a service area and locker room on the first level. The second floor will feature a large area with 70-75 pieces of technology-equipped cardiovascular machines, a personal training and fitness area, two exercise studios for group exercise classes and a dedicated cycling, or spinning classroom.

The current fitness center will be transformed into meeting space and the existing exercise studio will remain as such and will be shared by Athletics and Student Activities. The squash court that has been filled with cardio equipment is expected to revert back to being a squash court.

A balcony with about 120 seats will be added above the swimming pool. The pool area also will be renovated with HVAC upgrades.

“When the pool area closes for renovations in early spring 2015, we’re making arrangements with Chatham University, the Jewish Community Center in Squirrel Hill and Club One in East Liberty to accommodate our recreational swimmers,” Centor said.

He noted that while the current locker rooms will close in early spring, locker facilities would be available in Skibo Gym.

Vaughan said the studio theater would be a “highly functional, multipurpose space that will answer the prayers of many of our students.”

The theater will be used by CMU student performance groups, including Scotch’n’Soda, the All University Orchestra, the Kiltie Band and several dance organizations.

Vaughan said the theater will be equipped with 100 seats in a “telescopic format.” She said the theater would be easily reconfigured to accommodate various types of performances.

For example, she said one full side of the theater will be lined with mirrors for dance groups. But, when musical groups are performing soundproof curtains can be pulled across the mirrors.



THE RENOVATION WILL BRING A STUNNING UNIVERSITY PRESENCE TO FORBES AVENUE.



The theater will feature a “tension wire grid” for greater safety and flexibility in lighting, a control booth, conventional and LED light fixtures, and user-friendly in-room technology, such as plug-ins to play music from iPods.

Vaughan said the project will also provide “shell space” on the lower level and third level. She said the third floor space might be used for a graduate student lounge and for undergraduate needs to be determined by Student Senate. The lower level space will be used by the bookstore, copy center, dining services and CUC operations.

The addition also will cause the East Campus Garage entrance/exit to be reconfigured. A new driveway to and from Forbes to the garage with single lanes for entry and exit will be constructed across from Devon Road. Once completed, all permit holders will be required to exit the garage from Beeler Street during the rush hour, between 4 and 6 p.m.

Cannon Design of New York City is the architectural firm leading the project and the construction manager is Mosites Construction. Adam Homer of Campus Design and Facility Development is the project manager.



RAJLAKSHMEE (E'15), A MASTER'S DEGREE STUDENT IN THE INTEGRATED INNOVATION INSTITUTE, DEMONSTRATES HER TEAM'S PROJECT, THE SATELLITE SHELTER, WHICH IS DESIGNED TO KEEP THE HOMELESS WARM.

and Ruyao Wu (CMU'15), all from the Integrated Innovation Institute. Their project was a structure that could be set up in Pittsburgh's parks.

During the day, the structure folds up into a billboard, which the team proposed selling for \$100 per month to cover maintenance costs. Homeless individuals can reserve one of these structures after 8 p.m., using an ID system that tells them which units are available and swiping the ID card to open the temporary residence. Inside, there is a heating element and fan that can be plugged into the city's lampposts. The ID system also assists homeless individuals with job placement.

The Impact-a-Thon was part of a larger College of Engineering event called the Innovation Palooza, which highlighted faculty research such as 3-D bioprinting from Adam Feinberg, professor of biomedical engineering and materials science and engineering, and included a lesson on how to make butter from heavy whipping cream using mechanics from Mechanical Engineer-

ing Professor Phil LeDuc and Chemistry Professor Subha Das.

The Palooza also showcased demos and lightning talks from industry leaders, such as Merline Saintil, head of operations for mobile and emerging products at Yahoo! and Bill Fuller of Big Burrito, who put an innovative spin on mealtime by making Asian-style lobster tacos with wasabi guacamole.

The College of Engineering plans to host the Innovation Palooza and Impact-a-Thon annually, something that teams said will help them immensely as they move forward in their careers.

“The biggest value of this project was that, rather than just designing a solution, we went out and talked to people. We got a survey, and we were able to get a good sense for what people cared about and what the issues actually are by talking to people in those situations,” Richardson said.

“That makes our opportunities in industry much better because decisions informed by research have good results.”

#HashtagInventor

Alum's Idea Now A Cultural Icon

■ Kelly Saavedra

The hashtag.

Love it or loathe it, the little pound sign is preceding words and phrases everywhere. By turning any words that directly follow it into a clickable link, hashtags initially made it possible for Twitter users to organize content, track discussions and easily follow topics of interest.

developed over time, but the relevance to spreading news was there from the outset," he said.

Messina argues one of the most important aspects of the hashtag is that it can be used both humorously and for purposes where life and death are concerned, such as when a child goes missing.

MESSINA'S TWEET SUGGESTING FIRST USE OF THE HASHTAG, AUG. 23, 2007.



Since then, the hashtag has exploded. People are using it to advertise, carry out social movements around the world and frequently convey humor. Its popularity once prompted late night talk show host Jimmy Fallon to parody its use — and misuse — for laughs in a sketch with singer Justin Timberlake.

"I thought that sketch was awesome," said hashtag creator Chris Messina, who earned a bachelor's degree in communication design from Carnegie Mellon in 2003. "Here are these Hollywood types making fun of an idea some geek had in Silicon Valley. It just shows how much cultural relevancy us geeks now wield in the world."

Looking back on the trajectory the hashtag has taken — from organizational tool to cultural icon — Messina says the uses we see today echo its very first uses, just on a much broader and widespread level.

"The tongue-in-cheek usage

"It means the hashtag can't be owned or tamed by anyone. It is an artifact of digital communication that needed to exist, and now it does," he said.

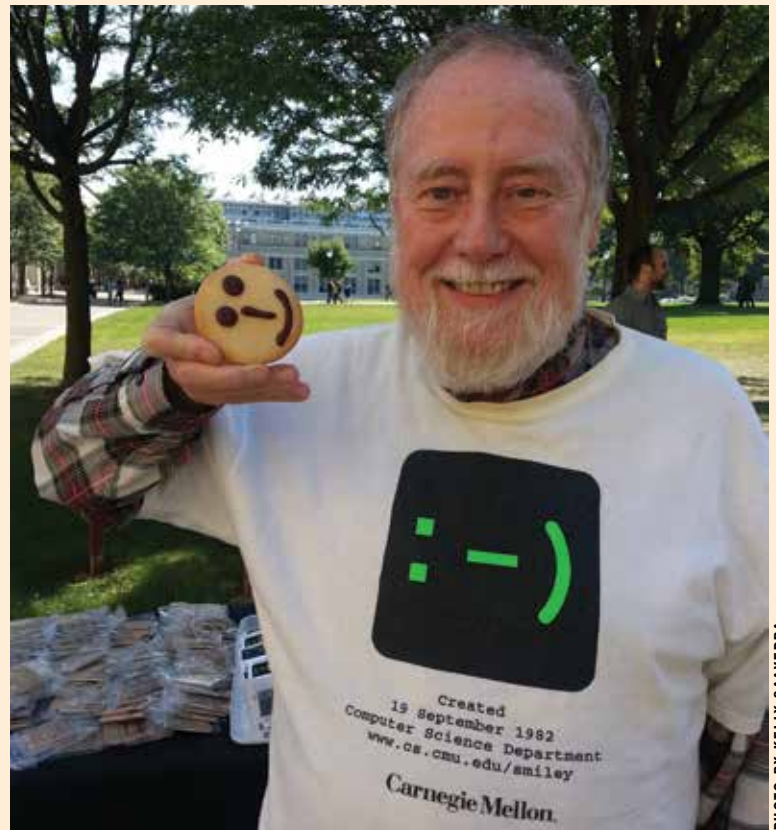
Messina also feels the life that the hashtag has taken on is a reflection of our increasing dependence on digital media and mobile devices.

"It's really something of the post-PC era. When you no longer have a keyboard to type out sentences, everything is about brevity and efficiency. And the hashtag is, quite frankly, about as condensed as you can get," he said.

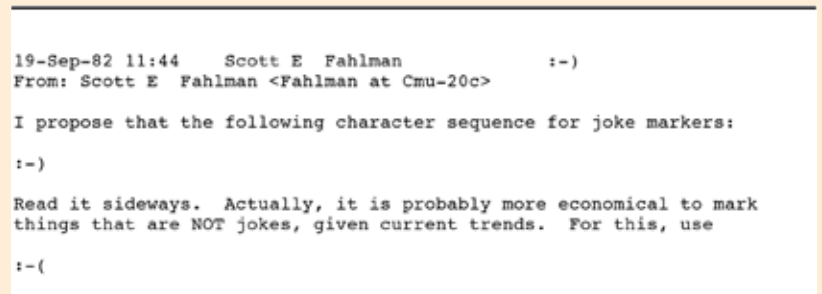
Nonetheless, Messina still admits to be taken aback when he sees a hashtag where he wouldn't have thought of putting one.

"I wouldn't have expected the hashtag to show up on taxi cabs, billboards or album artwork," Messina said. "A lot of people complained it was ugly, but now it connotes hipness and modernism."

All Smiles!



The Smiley emoticon, another cultural icon with CMU roots, turned 32 this year. Scott Fahlman (above), a professor of computer science, first proposed the marker to convey humorous content in discussions.



FOOD DRIVE

Carnegie Mellon's 21st annual food drive, sponsored by Staff Council, begins Monday, Nov. 3 and runs through Friday, Nov. 14. Look for the collection containers across campus. Bring donations to the "One Day, One Can" event during the Benefits and Fitness Fair on Nov. 5 in Rangos Hall, Cohon University Center, or to the annual "Cans Across the Cut" event on Nov. 17.

Open Enrollment Begins Nov. 3 CONTINUED FROM PAGE FOUR

protect UPMC in-network access for some Highmark members. More information can be found online at <http://stayinformed.pa.gov/>. Employees with concerns about network access in 2015 should contact the health plan provider directly.

Medical plan changes for 2015 include changes to the PPO 1 and PPO 2 plans and the elimination of the PPO 3 plan.

Detailed plan information and rates are available to view at www.cmu.edu/hr/benefits/OE. Questions can be directed to the HR Benefits Office at 412-268-2047 or hrhelp@andrew.cmu.edu.

Upcoming Events

Staff Council's Benefits Open Forum

Tuesday, Oct. 28

Noon-1 p.m.

McConomy Auditorium, Cohon University Center

2014 Benefits & Fitness Fair

Wednesday, Nov. 5

10 a.m.-3 p.m.

Rangos Ballroom, Cohon University Center

SEI Open Enrollment Presentation

Monday, Nov. 10

10-11 a.m.

SEI Building, A.J. Auditorium

Benefits and fitness vendors are available to answer your questions. The fair also includes fitness demonstrations, free health screenings and flu shots, raffles and giveaways. For more information, visit www.cmu.edu/hr/benefits/fair.html.