



the PIPER

CMU'S NEWS SOURCE FOR FACULTY & STAFF

9/15 ISSUE

Carnegie Mellon University

- 2 GOOD AS GOLD
- 4 GROWING PAINS
- 6 ANDY AWARD NOMINATIONS
- 11 TROUBLE ON THE TRAIN TRACKS

Playfair Portraits

Parents' Perspectives

A New Orientation to CMU

■ Abby Simmons

Anne Witchner has been leading CMU's orientation for more than two decades, but this year, she arrived on Move-In Day with a different title: Mom.

Although she could have moved in her son, David, early, Witchner and her husband, Michael Levin, opted to navigate through the frenzied early morning traffic with fellow first-year parents.

Like Witchner, many faculty and staff across the university are seeing CMU through the eyes of parents this fall, some for the first time, and others as veterans. While the tuition benefit is attractive, parents cite numerous other

CONTINUED ON PAGE FIVE



PHOTO BY ERICA DILGER

SELFIES WERE RAMPANT AMONG PROUD FIRST-YEAR STUDENTS DURING PLAYFAIR ON THE CUT, WHERE THE CLASS OF 2019 CAME TOGETHER AS ONE GROUP FOR THE FIRST TIME. THIS YEAR'S CLASS OF MORE THAN 1,500 STUDENTS HAILS FROM 40 COUNTRIES AND 42 U.S. STATES. SEE THIS YEAR'S CLASS AT A GLANCE ON PAGE 5.

Gender Equity

CMU Expands Title IX Efforts

■ Kelly Saavedra

Reports of sex discrimination, sexual violence and harassment make the headlines nearly every day. But many people affected by misconduct never report it to anyone.

This year, the university has a new office with staff dedicated solely to these areas. Located in West Wing, Suite 102, on the Pittsburgh campus, the Office of Title IX Initiatives is expanding the university's efforts to raise awareness, change mindsets, provide support and effectively resolve issues that are reported.

"At Carnegie Mellon, we have long been committed to providing a safe environment to all community

CONTINUED ON PAGE TEN

TCS Invests in CMU's "Secret Sauce"

■ Bruce Gerson, Kelly Saavedra

Tata Consultancy Services (TCS) is the latest company to get a taste of Carnegie Mellon's "secret sauce." And it wants a whole lot more.

Millions of dollars' worth, in fact.

TCS — the fastest growing global IT and consulting company with offices in more than 46 countries and clients in every major industry — is tapping into the university's recipe for success with a donation of \$35 million to fully fund a new facility on CMU's Pittsburgh Campus and support students through CMU's Presidential Scholarships and Fellowships program.

It's the largest gift TCS has ever given to a university and CMU's largest corporate gift.

The company's CEO and managing director, Natarajan Chandrasekaran, said partnerships like this are critical



PHOTO BY KEN ANDREYO

PRESIDENT SUBRA SURESH AND TCS CEO NATARAJAN CHANDRASEKARAN CELEBRATE THE NEW PARTNERSHIP.

CONTINUED ON PAGE EIGHT



PO-SHEN LO (FAR LEFT) POSES WITH THE IMO CHAMPIONSHIP TEAM. THE TITLE WAS THE FIRST FOR THE U.S. SINCE 1994.

Good as Gold

Math Professor's Olympiad Team Takes Home Top Medals

■ Jocelyn Duffy

Every coach wants nothing more than to see his or her team succeed. As team leader of the United States' International Mathematical Olympiad (IMO) team, Associate Professor of Mathematics Po-Shen Loh proudly watched as his team achieved the ultimate success — winning the IMO.

A “mathlete” himself, Loh was a silver medalist at the 1999 International Math Olympiad. His experience in the realm of competitive mathematics was extremely influential in his life, and something he wanted to bring to other aspiring mathematicians.

In 2002, Loh began teaching at the Mathematical Association of America's Mathematical Olympiad Summer Program, which prepares students for the international competition. In 2010, he

was named the deputy team leader, and in 2014 he was appointed team leader — equivalent to the head coach — of the United States' IMO team.

As team leader, Loh brought the summer training program to Carnegie Mellon's Pittsburgh campus. Each summer, around 60 of the nation's top high school mathematicians participate in the three-week-long boot camp where they are immersed in creative problem-solving techniques.

The idea that math can be seen as creative problem-solving is something that Loh teaches all his students, those in the Olympiad program and those at CMU. He says that learning these skills will help students make the jump between what they have learned in their high school classes and the type of math that is done at

the college-level, and from college math to the type of math that is done in academia and industry. His hope is that he prepares his students to be successful not only in class or math competitions, but in their adult and professional lives.


“Mathematics is not just about memorizing a bunch of formulas, but in fact is as creative as the humanities and the arts,” Loh told NPR after the competition.

Six high school students from across the country are selected for each year's IMO team. In July, the team traveled to Chang Mai, Thailand, to compete against some of the world's best teen-aged mathematicians. In the two-day competition, each student did their best to complete six math problems in topics like algebra, geometry, number theory and combina-

torics. The problems are so hard, that often the best competitors complete only one. The difficulty is by design — the Olympiad aims to test students on creative problem-solving, not advanced techniques.

Loh and the team's other coaches prepared the students well. At the international competition, five of the six high schoolers won gold medals and one won silver for their individual results, and team U.S.A. was awarded first place overall — something that they hadn't accomplished since 1994.

“This historic result reflects an enormous amount of work by students, families, teachers and coaches, as well as an extensive national infrastructure for the cultivation of extraordinary mathematical talent,” Loh said.



the PIPER

9/15 Issue

PUBLISHER
Ken Walters

EDITOR
Bruce Gerson

MANAGING EDITOR
Kelly Saavedra

WRITERS

| | |
|--------------------|------------------|
| Denise Troll Covey | Kelly Saavedra |
| Jocelyn Duffy | Erin Keane Scott |
| Bruce Gerson | Abby Simmons |
| Lisa Kulick | Ken Walters |

DESIGNER
Melissa Stoebe
Communications Design and Photography Group

PHOTOGRAPHY
Ken Andreyo & Tim Kaulen
Communications Design and Photography Group

To contact The Piper staff, call 412-268-2900 or email bg02@andrew.cmu.edu.

Carnegie Mellon University does not discriminate in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex, handicap or disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Furthermore, Carnegie Mellon University does not discriminate and is required not to discriminate in violation of federal, state, or local laws or executive orders.

Inquiries concerning the application of and compliance with this statement should be directed to the vice president for campus affairs, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2056.

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.

Produced for Media Relations by The Communications Design and Photography Group, September 2015, 16-105.

Libraries Launches “#OpenCMU” Campaign To Benefit Researchers

■ Denise Troll Covey

University Libraries is hoping to engage CMU researchers in practices that will enhance the discovery, use and impact of their work.

With that goal in mind they have launched #OpenCMU, aimed at getting people to “open up” about openness. It's a university-wide campaign emphasizing the many ways in which open access, open data, open licenses and open peer review can benefit them.

“Some people don't have access to expensive books and journals, which hampers research worldwide, impedes the application of research findings and slows the pace of innovation,” said Keith Webster, dean of University Libraries. “Making the literature available with open access can turn these tides.”

Attempts to replicate research findings often fail, eroding the public's trust. But making research data openly available could facilitate reproducibility, deter research misconduct and accelerate the pace of scientific discovery. Open licenses granting designated usage rights also could speed things up, as would-be users wouldn't have to seek out copyright owners and ask and wait for permission.

Most importantly, openness is just plain good for researchers.

“More access means more users, more citations, greater impact and enhanced recognition,” Webster said.

Throughout the fall semester, #OpenCMU will teach researchers how to increase access to their work as well as how to get credit for their work. Every couple of weeks, the Libraries will tweet and post information on a

new topic, describing what it is, why it's important, how it will benefit you, CMU's position on it and what University Libraries is doing about it.

The topics will include discussion of ORCID IDs, CMU's Research Showcase, publishing, copyright, author's rights and licenses, and more.

Followers of the campaign on Twitter at <https://twitter.com/cmulibraries> and Facebook at www.facebook.com/CMULibraries will find information disseminated in bite-sized bits — quick to consume, and easy to digest.

To learn more about #OpenCMU, go to <http://goo.gl/30GYAS>. To schedule a presentation or Q&A for your department or class, contact Denise Troll Covey, Scholarly Communications Librarian, at troll@andrew.cmu.edu or 412-268-8599.

CMU to the OR, STAT!

FDA Clears CMU Robot for Surgery

■ Ken Walters

A robot developed at Carnegie Mellon soon will be working in an operating room near you.

CMU spinoff company Medrobotics Corp. received clearance from the U.S. Food and Drug Administration (FDA) to market its Flex® Robotic System, which is based on the research of CMU Robotics Institute Professor Howie Choset.

A flexible endoscopic system that enables surgeons to access and visualize hard-to-reach anatomical locations, the system extends the benefits of minimally invasive surgery — shorter hospital stays and recovery times — to a broader population of patients. Medrobotics initially has targeted the system for use in head and neck surgery, operating through the mouth.

The FDA clearance marks another high point for Carnegie Mellon and its successful entrepreneurial culture. Startup activity among the university's faculty, students and alumni has led to the creation of more than 215 companies since 2008. Choset serves as the company's acting chief technology officer and a partial owner.

"Pittsburgh is the ideal starting point for this technology, with the combination of our robotics expertise at CMU, the medical knowledge at the University of Pittsburgh, and the economic develop-



PROFESSOR HOWIE CHOSET'S WORK LED TO THE DEVELOPMENT OF THE FLEX ROBOTIC SYSTEM, WHICH ENABLES SURGEONS TO ACCESS AND VISUALIZE HARD-TO-REACH LOCATIONS THROUGH THE MOUTH.

ment support from the business community," Choset said. "In particular, we received great initial support and vision from Jim Jordan at Pittsburgh Life Sciences Greenhouse, which was essential in bringing the system to market."

Choset developed the surgical robot in collaboration with Dr. Alon Wolf, then an adjunct faculty member with the Robotics Institute and now a professor at the Technion-Israel Institute of Technology, and Dr. Marco Zenati, then a professor of surgery at the University of Pittsburgh School of Medicine, now at



Harvard Medical School. Choset, Wolf and Zenati co-founded Medrobotics as a Carnegie Mellon spinoff in 2005.

Today, the company is based in Raynham, Mass. It received European CE mark clearance in March 2014, which allowed for a limited commercial launch of the Flex® Robotic System in select European markets.

"The Flex® Robotic System is the first and only robot-assisted surgical platform with a flexible scope cleared by FDA for use during transoral procedures," said Samuel Straface, president

and CEO of Medrobotics. "The minimally invasive system enables surgical access and visualization in hard-to-reach locations through a single site. Doctors can then complete procedures that might otherwise be difficult, or even impossible, to perform due to inability to visualize or access the site."

For the surgical device, Choset and his research team designed a probe that could bend, but remain rigid. It thus combines the features of a laparoscope — a rigid, straight viewing device often used in minimally invasive surgery — with an endoscope, which is a flexible, non-rigid device for peering inside the body.

Physicians can use a joystick to steer the system around organs or other obstructions. It employs a "follow-the-leader" technique so that as the device is extended into the body, the mechanical linkages that follow behind automatically conform to anatomical curves.

The head of the device features a high-definition video camera. Ports on either side of the camera can accommodate tools for cutting or grasping tissue. Though initially developed and tested for heart procedures, Medrobotics has focused its marketing on head-and-neck surgeries accessed through the mouth.

"Intelligent" Training Tool To Improve Cancer Treatment

■ Lisa Kulick

Researchers at CMU have developed a new approach to improve training for cryosurgery, a procedure used to treat prostate cancer by freezing and destroying the diseased tissues.

The new approach will shorten the learning curve for surgeons and improve the quality of the minimally invasive treatment for patients by reducing complications, shortening recovery times and lowering health care costs.

Yoed Rabin, a professor of mechanical engineering and a board member of the American College of Cryosurgery, has led the development of this first computerized training tool. This intelligent training tool provides feedback to the trainee and offers advice on how to maximize the freezing of cancer tumors while preserving the healthy tissues surrounding the site.

Prostate cancer is the second leading cause of cancer death in men according

to the American Cancer Society, which predicts that one in seven men will be diagnosed with the disease during his lifetime and one in 38 will die from the disease.

"As engineers, we can take advantage of recent developments in computer hardware and computation techniques to help doctors develop education methods for minimally invasive thermal surgery," Rabin said.

In a recent article published in *Technology in Cancer Research & Treatment*, Rabin's team demonstrated how its intelligent tutoring approach could shorten the learning curve of surgical residents. The computerized system, which runs about 100 times faster than the actual cryosurgery procedure, uses novel algorithms to create 3-D thermal images of tumors in patients in a variety of scenarios. This allows the trainees to see firsthand the effects of the tissue they are freezing.



THE TRAINING TOOL PROVIDES FEEDBACK AND ADVICE FOR SURGEONS.

"Cryogenic technology today is far more advanced than the surgical treatment methods used by surgeons," Rabin explained. "As engineers and surgeons

collaborate, we can improve the quality of the applied methods and advance the widespread use of cryotherapy."

Growing Pains

Entrepreneurs' Drone Could Help Struggling Aussie Farmers

■ Kelly Saavedra

In their never-ending battle with harsh climates, farmers in Australia's Wine Country deploy a variety of technologies, such as automated irrigation systems and soil sensors, to combat the hot and dry summers of the growing seasons.

But without a lot of real-time data tracking on which to base their decision-making, problems often aren't being detected until after the damage has already been done. High costs and low returns have caused some growers to reduce operations, while others have been forced to shut down altogether.

James Laney, Constantin Baumgartner and Daniel Del Duca, former classmates at CMU's Heinz College in Adelaide, just might have the answer for these farmers with their research project that involves an unmanned aerial vehicle (UAV) and Big Data analytics.

"In Australia, the laws allow you to operate a UAV as a service, which is something that you currently can't do in the United States without obtaining the highly sought after FAA 333 exemption," Laney said. "So we were trying to come up with any and every excuse to build a business model around one during our time in Adelaide and while the FAA figured things out in the U.S."

They zeroed in on the agriculture industry, one of the few civilian industries that can really capitalize on the benefits of having autonomous systems, Laney said.

Through their research group, Aero Laboratories, the trio has begun gathering data and input from local Australian grape farmers. Equipped with the VADAR engine they are developing — the acronym stands for Vegetation Analysis and Data Regression — the drone surveys the farmland capturing real-time images, and turning the raw images into digital maps. These maps provide a way of summarizing and approximating

crop health and identifying in real-time anomalies within the field.

"The term that gets tossed around is precision agriculture," Laney explained. "It's the ability to take your large farm, segregate it and isolate different areas, and target the specific areas that may be lagging or experiencing crop stress. Then, you can try to fix just those areas versus applying a general treatment to the whole area."

For starters, this could mean less money spent on water and fertilizer.

VADAR also fuses existing infield data into the digital maps and displays the information in a report through an easy-to-use, interactive mobile platform or desktop app.

"VADAR will help farmers analyze how various factors in the field correspond to plant health, and over time, provide predictive modeling that may lead to better crop management strategies," Laney said. "Ultimately, we believe our system will help produce a more intimate growing strategy where crops are monitored on a plant-by-plant basis versus block-by-block or acre-by-acre strategies."

Laney says their biggest challenge so far has been the fact that the technol-

ogy industry grows rapidly, much faster than the agriculture industry — and plants, for that matter.

"It takes a full growing season before the benefit of new agriculture technology like ours can be measured. Many growers and producers already have a difficult time managing their crops and the technology they have already. They are hesitant to commit to a new technology that has yet to prove itself in the industry," Laney said. "It hasn't been easy to break this barrier to entry."

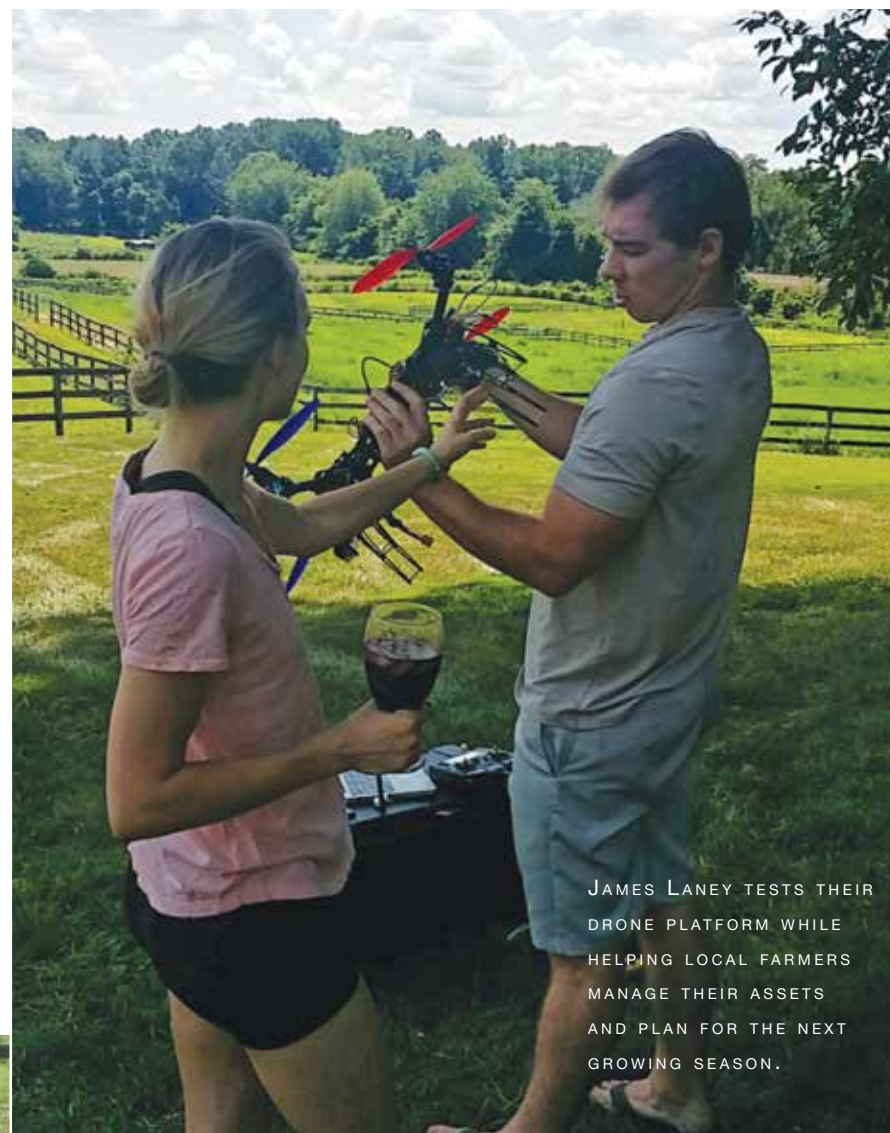
That being said, the months of September and October mark the beginning of the Adelaide's grape growing season, and plans are underway to work

alongside Adelaide growers to track the growth from the first bud break to harvest.

"This will allow us to compare our results to the previous harvests and show the benefits that Aero Laboratories can provide," Laney said.

Del Duca finished his Master of Public Policy and Management degree in Australia and is heading up Aero Laboratories' operations there, while Baumgartner and Laney are in Pittsburgh to finish up their coursework.

This fall, the team is hoping to recruit a few of their fellow CMU students to be part of their spring capstone project and soon-to-be business.



JAMES LANEY TESTS THEIR DRONE PLATFORM WHILE HELPING LOCAL FARMERS MANAGE THEIR ASSETS AND PLAN FOR THE NEXT GROWING SEASON.



reasons why their children decided to enroll here.

Witchner encouraged her son to explore options beyond CMU, and he applied to three schools.

“What sealed the deal was David’s experience with the Pre-College Program. He got a sense of what it is like to be here. He studied music but lived in a residence hall with athletes and scientists,” Witchner said.

David, who is pursuing a degree at the Tepper School of Business, grew up attending campus events like Greek Sing and Martin Luther King Jr. Day lectures, and many of his role models have been CMU students.

“I’m interested to see what will surprise him,” Witchner said.

The Pre-College experience also was a contributor to first-year Dietrich College student Silvia Giampapa’s decision to attend CMU.

“While the challenge seemed daunting at first, Silvia demonstrated to herself that she could work at the level CMU requires. She enjoyed the rapport with the professors and studying and hanging out with smart, motivated and ambitious classmates,” said Giampapa’s parents, Anna Maria Berta, a project manager at the Software Engineering Institute, and Joseph Giampapa, a senior project scientist at the Robotics Institute.

Although Berta and Giampapa had worked on projects with students and taught courses, interacting with students on a campus tour and attending admission presentations were enlightening.

“We enjoyed their comments and their perspectives and started to appreciate more of the ‘CMU experience.’ CMU is a rich world that contains many realities,” Berta said.

Joe Mertz, a professor at the Dietrich and Heinz colleges, has two kids at CMU now. His daughter, Maggie, is a first-year modern languages major, and his son, Joe, is a junior drama major. He said his children’s academic pursuits have inspired him to explore new disciplines.

“My wife and I have enjoyed learning more about drama and have had season subscriptions the past two years. It is especially interesting to see the cutting-edge of how technology can add to theater. I look forward to learning more about modern languages as my daughter begins her study,” Mertz said.

Conversations with Mike Steidel, director of admission, also were helpful to students and parents.

Mertz said that Steidel helped his son re-think how he could pursue his interests in video and media design at CMU. The outcome of that conversation set him on a path completely different from what he and his family had anticipated.

Chemistry professors Gloria Silva and Roberto Gil said their son Mauricio, a



PHOTO BY ERICA DILGER

RIGHT: ANNE WITCHNER, HER HUSBAND, MICHAEL LEVIN, AND SON, DAVID, TAKE A BREAK ON MOVE-IN DAY. ABOVE, WITCHNER (CENTER) JOINS THE CLASS OF 2019 AND ORIENTATION COUNSELORS AT PLAYFAIR.

first-year student, benefited from conversations with Steidel, as well as professors in the Mellon College of Science.

Mauricio and his older brother, Agustin, were attracted to CMU for its interdisciplinary approach to education and multicultural community. Agustin, a junior biological sciences major, plans to apply for a study abroad experience to immerse himself in the Japanese language and culture.

Faculty and staff parents say that setting expectations about how they will interact with their children while they are enrolled at CMU is important. Decisions can be based on a variety of factors — from individual preferences and cultural backgrounds to logistics, such as living on campus versus commuting from home.

“Our experience may be different from that of other families,” Silva said, noting that her sons welcome opportunities to interact with their parents while on campus.

While the Gil-Silvas will continue to interact frequently, the Mertz family is taking a different approach.

“We have learned that while I work on campus, and we live within 25 minutes, our children prefer my wife and me to treat it as if they were in college far away. No stalking, no surprise visits, no hovering,” Mertz said.

Witchner agrees that an away-from-home college experience while still living “in their families’ backyards” may be a desirable option for many students. Wearing her Student Affairs hat, she offers parents this advice:

“Encourage your children to stay on campus during the weekends. And make them do their own laundry.”



PHOTO BY ERICA DILGER

FIRST-YEAR CLASS AT A GLANCE

Number of Students: **1,590**
 Men: **857** (54 percent)
 Women: **733** (46 percent; most women in past six years)
 International Students: **326** (20.5 percent)
 Minority Students: **251** (16 percent)
 Countries Represented: **40** (China is tops with 168 students)
 American States Represented: **42** (excluded are Arkansas, Mississippi, Montana, New Mexico, South Dakota, Utah, West Virginia and Wyoming; California is tops with 217 students)

QATAR CAMPUS

Number of Students: **110**
 Men: **44 (40 percent)**
 Women: **66 (60 percent)**
 Nationalities Represented: **20**

FUN FACTS

Students with Perfect SAT Scores: **20**
 Highest Average SAT Scores Since 2009:
Verbal 700; Math 740; Writing 710
 Most Freshman Engineering Students Since 2009: **513**
 Most Popular Men’s Names: **David** and **Alexander**
 Most Popular Women’s Names: **Emily** and **Sarah**
 Youngest Freshman: **15 years old**
 Oldest Freshman: **21 years old**



THE ANDY AWARDS

"My heart is in the work."

Celebrating Staff

Twenty-three Carnegie Mellon staff members and five teams have been nominated this year by their co-workers for an Andy Award, a special honor that recognizes superior performance and commitment to the university community.

Awards are given in five categories: Commitment to Excellence, Commitment to Students, Innovative and Creative

Contributions, Spirit, and Teamwork and Collaboration.

The Andy Awards ceremony takes place at noon, Sept. 21 in McConomy Auditorium. A light reception in Rangos Hall will follow the ceremony. The campus community is invited to attend.

And the nominees are:

Commitment to Excellence



SHARON BLAZEVOICH
INSTITUTE FOR
SOFTWARE RESEARCH



DON CAMPBELL
UNIVERSITY POLICE



DONORA CRAIGHEAD
ACADEMIC DEVELOPMENT



LEIGH EDLEMAN
UNDERGRADUATE
ADMISSION



AMY FABER
FINANCE DIVISION



JENNIFER FRICK
CAREER AND PROFESSIONAL
DEVELOPMENT CENTER



BRUCE GRAFTON
FACILITIES MANAGEMENT
SERVICES



DANIEL KENNEDY
CAMPUS AFFAIRS
SYSTEMS



SCARLETT TOWNSEND
(DC 1993), HUNT
INSTITUTE FOR BOTANICAL
DOCUMENTATION



DEBORAH WILT
SCHOOL OF DESIGN



DEBORAH H. ZALEWSKI
ROBOTICS INSTITUTE



EMMA ZINK, INTEGRATED
INNOVATION INSTITUTE

Commitment to Students



BRIAN FERNANDES
ENROLLMENT SERVICES



WENDY FONG
INFORMATION
NETWORKING INSTITUTE



SUZIE LAURICH-MCINTYRE
OFFICE OF THE VICE
PROVOST FOR GRADUATE
EDUCATION



JANET PETERS
ELECTRICAL AND
COMPUTER ENGINEERING



KELLY DELANEY
(DC 2009), IDEATE



RHONDA KLOSS
SPONSORED PROJECTS
ACCOUNTING

Spirit



PAUL GERLACH
(A 1967, 1968, 1972),
OFFICE OF STUDENT
AFFAIRS



MICHAEL NEE
HUMAN RESOURCES



MIKE PAPUGA
FACILITIES MANAGEMENT
SERVICES



PATTYE STRAGAR
ATHLETICS AND
PHYSICAL EDUCATION



PAULA MARTIN
UNIVERSITY HEALTH
SERVICES

Teamwork and Collaboration

PRE-AWARD PROCESS STANDARDIZATION TEAM, COLLEGE OF ENGINEERING

FRONT ROW, FROM LEFT TO RIGHT:
ANGELA PUSATERI, BETH HOCKEN-
BERRY (HNZ 2015), DAVID DeLo
(E 1982, 1994, 1996; TPR
1984), TONYA BORDONARO (HNZ
2015)

BACK ROW, FROM LEFT TO RIGHT:
ANITA CONNELLY, BARBARA
BUGOSH, MEIGHAN HARDING,
CHARLOTTE AMBRASS (HNZ
2015), MICHAEL BALDERSON
(A 2005; HNZ 2015),
NATHAN KOTECKI (HNZ 2015),
CATHY SCHAEFER, MELISSA HYZY
(HNZ 2015)

NOT PICTURED: KERI BAKER,
ANISSA GREENFIELD



CMUWORKS PROJECT LEADERSHIP TEAM, HUMAN RESOURCES REPRESENTED BY

FRONT ROW, FROM LEFT TO RIGHT: LINDA SCHMIDT, BOB RIDDLE
BACK ROW, FROM LEFT TO RIGHT: DEANNE WEAVER, JEFF HOUSER, KIM ABEL
NOT PICTURED: KAREN ECK



ECE WEB TEAM, ELECTRICAL AND COMPUTER ENGINEERING

LEFT TO RIGHT: CHAD HILTON, DAVE DECKER, STEVE ELGERSMA, AYDAEN LYNCH



ACCELERATE LEADERSHIP CENTER TEAM, TEPPER SCHOOL OF BUSINESS

LEFT TO RIGHT: LAURA MAXWELL, JARRED LAZEAR, MICHELLE STONER



MODERN LANGUAGES STAFF TEAM, MODERN LANGUAGES

LEFT TO RIGHT: NANCY MONDA, CHRISTINE HUCKO, SUE CONNELLY, VERA LAMPLEY
NOT PICTURED: MARC SISKIN

Tata Consultancy Services Invests in CMU's "Secret Sauce"

CONTINUED FROM PAGE ONE

in today's world of rapid technological advances, and CMU researchers would give TCS great opportunities to tackle many industry problems.

"CMU is known for the best in education and research in machine learning, robotics, driverless cars, statistics, information management and other disciplines, and how these technologies can impact businesses," Chandrasekaran said.

The facility that will bear the TCS name will focus on education and research and provide collaborative space for faculty, students and TCS staff. It will be built along the Forbes Avenue corridor — between Morewood Avenue and Craig Street — that also will feature the new Tepper Quad and a new mixed-use facility across the hollow from the Robert Mehrabian Collaborative Innovation Center.

"Whether you're running a university or a global company, you want to find the best and the brightest people to do cutting-edge things," said CMU President Subra Suresh.

"With our shared commitment to education and research in areas that help address many challenges of our time, TCS' support of Carnegie Mellon is both natural and extraordinarily promising," he said. "Together, our two organizations have the capabilities to make breakthrough discoveries and the capacity to make societal impact on a global scale."

Pennsylvania Governor Tom Wolf attended the official announcement ceremony, held in late August, with several local government officials, including Congressman Mike Doyle, Allegheny County Executive Rich Fitzgerald and Pittsburgh Mayor Bill Peduto.

Wolf said the partnership "reflects well on CMU, one of the premier universi-



TCS'S NATARAJAN CHANDRASEKARAN, GOVERNOR TOM WOLF, PROVOST FARNAM JAHANIAN, DIETRICH COLLEGE DEAN RICHARD SCHEINES, JELENA KOVAČEVIĆ AND JAY WHITACRE (R-L) LISTEN TO REMARKS BY PRESIDENT SUBRA SURESH DURING THE CEREMONY ANNOUNCING THE GIFT AND PARTNERSHIP.

ties in the world; on TCS, one of the most distinguished companies in the world; and on Pittsburgh and Pennsylvania."

Wolf called CMU a "magnet" and a "catalyst" for leading businesses and organizations "that want to feast at CMU's academic table." He predicted that the partnership will foster ideas, products and services that will transform the world.

Following the announcement, Dietrich College Dean Richard Scheines moderated a panel discussion on "Industry-Academic Partnerships: A New Global Era."

Scheines led CMU professors and entrepreneurs Jay Whitacre and Jelena Kovačević, and TCS's Chandrasekaran in a discussion about partnerships. Topics included what role government should play, intellectual property, culture and engaging students.

Kovačević, who is working with UPMC Children's Hospital to develop mathematical models and software that can be used to diagnose middle ear infections, said industry-academic partnerships provide a mutually beneficial experience.

"Partnerships provide an opportunity for companies to get access to top talent and for faculty to get funding for research. It's a symbiotic relationship," she said.

Whitacre said he left his job at NASA's Jet Propulsion Lab to come to CMU because he wanted to work on something that had more of an immediate impact on society. In just six and a half years, he grew his idea for manufacturing sustainable energy storage systems into a multinational organization with 160 employees.

His company, Aquion Energy, is now producing clean and sustainable saltwater batteries that outperform traditional batteries and shipping them around the world.

"It's a dance to find the shortest path between invention and product," Whitacre said. "The key thing was recruiting the best possible teammates to move to Pittsburgh and make this happen, and continuing to garner the interplay between the stuff coming out of the university, the stuff happening at the research and development lab, and the stuff happening at the factory."

President Suresh echoed this team sentiment when he called innovation a "contact sport."

"[If] you increase contact, you increase innovation, and diversity brings different vantage points. Innovation is enriched and enhanced by diverse perspectives," Suresh said.

TCS joins a growing group of major technology companies moving to the Pittsburgh region in recent years. More than 350 companies now have partnerships with CMU.

Among the nation's major research universities, Carnegie Mellon ranks first in startups per research dollar, according to the Association of University Technology Managers. Since 2008, CMU faculty, students and alumni have created 215 new companies.

"With highly talented faculty, highly talented students, and with right conditions and resources, magic happens," Suresh said. "That's our secret sauce."



JELENA KOVAČEVIĆ (CENTER) MAKES A POINT DURING THE PANEL DISCUSSION THAT FOLLOWED THE CEREMONY. AT RIGHT IS TCS CEO NATARAJAN CHANDRASEKARAN AND AT LEFT IS CMU'S JAY WHITACRE.

PHOTO BY KEN ANDREYO

PHOTO BY KEN ANDREYO

Alumna Changes the World On “Sesame Street”

■ Erin Keane Scott

When Sonia Manzano left Carnegie Mellon in the late '60s to star in Stephen Schwartz' (A'68) off-Broadway production “Godspell” in New York, she knew she wanted to change the world with her art but wasn't yet sure how to make that happen.

As a child growing up in the Bronx with parents from Puerto Rico, Manzano says she remembers watching television and never seeing her life experience reflected in the shows of the time, offering “Leave It to Beaver” as an example.

“I had never seen any people of color on television, and on some level, I used to watch and wonder where I was going to fit into this world where I didn't see myself represented,” she said.

One gloomy day in Pittsburgh while in Carnegie Mellon's Skibo Café, she saw “Sesame Street” for the first time. The sight of James Earl Jones reading the alphabet to children intrigued her. Eventually, she saw the characters of Gordon, a schoolteacher, and his wife Susan, a nurse, African-Americans living in an urban atmosphere, and she found herself relating for the first time.

She auditioned for the role of Maria and went home with the job.



SONIA MANZANO STARRED IN THE ORIGINAL OFF-BROADWAY PRODUCTION OF “GODSPELL,” CREATED BY FELLOW CMU GRADUATE STEPHEN SCHWARTZ.



MANZANO STARTED ON SESAME STREET AS A PERFORMER AND WENT ON TO WIN 15 EMMY AWARDS AS PART OF THE SHOW'S WRITING STAFF.

The two were a match on many levels.

“Sesame Street was one of my first auditions in the city. I was coming of age at the time. It was the '60s. I wanted to change the world, and so did Sesame Street. I had an idealistic fervor, and I was lucky to find a platform that embraced that and wanted to change the lives of children.”

Manzano's work over the past four and a half decades has been tirelessly focused on this mission of bringing differing perspectives and views of the world to children.

“Sesame Street was an instrument of social change. The goal was to close the education gap and eliminate racism,” she said.

While she started on the show as a performer, her work evolved and she soon began writing scripts for the program. She won 15 Emmy Awards as a member of the show's writing staff.

“I feel like I blinked and the years have gone by,” Manzano said.

She recently announced her retirement from the show after 44 years. And while she may be closing a chapter on

her acting, it appears her writing pursuits will continue. Manzano has published four books since 2004, including her memoir, “Becoming Maria: Love and Chaos in the South Bronx,” which was released on Aug. 25.

Manzano's best advice for young people upon her retirement:

“I would say to be flexible. I didn't know I was going to end up on TV on a children's show. I always thought I'd try to do regional theater,” she said.

“You have to be flexible with your talents.”

Be Our Guest

Patrick Wilson Returns To Direct “The Full Monty”

■ Erin Keane Scott

The School of Drama has announced its 2015-2016 season, featuring guest directors Patrick Wilson (A'95) and Sasha Illiev.

Wilson will be directing “The Full Monty,” in which he starred on Broadway, and Illiev will direct a devised Commedia dell'Arte piece based on Flaminio Scala's “The Plague in Venice.”

“We're thrilled to announce our coming season, particularly because our own talented faculty will work hand-

in-hand with these wonderful guest directors,” said Professor Peter Cooke, head of the School of Drama. “That combination offers our students an incredible benefit, one that will enrich their education and experience, and best prepare them for careers beyond Carnegie Mellon.”

The Subscriber Series will open with William Shakespeare's “Much Ado About Nothing,” directed by faculty member Anthony McKay, Oct. 8 - 17. The school will present William Gold-

ing's “Lord of the Flies,” adapted for the stage by Nigel Williams and directed by Caden Manson, a faculty member in the John Wells Directing Program, Nov. 19-Dec. 5.

Wilson, who has found success on stage, screen and television, will direct “The Full Monty,” with book by Terrence McNally and music and lyrics by David Yazbek, Feb. 18-27. Faculty members Thomas Douglas and Tomé Cousin will music direct and choreograph, respectively. The season will finish with Illiev's adaptation of “The Plague in Venice,” April 7-23.

Students in The John Wells Directing Program, named for Hollywood producer John Wells (A'79), will direct the following productions:

- An adaptation of Shakespeare's “Antony and Cleopatra,” directed by Fellow Eleanor Bishop;
- “Milk Like Sugar,” the Obie Award-winning play by Kirsten Greenidge, directed by Fellow Terrence Mosley;
- “Bob and Dave and Ren” adapted and directed by Fellow Ben Gansky; and
- The Director Series, featuring “Cloud Tectonics” by José Rivera,

“Jet of Blood” by Antonin Artaud and “Eurydice” by Sarah Ruhl.

The New Works Series continues to develop the innovative work of the Master of Fine Arts dramatic writing students, showcasing three new plays in October and three new plays in April by playwrights Eugenie Carabatsos, Karina Cochran, Amy Gijssbers van Wijk, Mora V. Harris, Levi Jelks and Joe Necessary.

Additionally, the Horizons Reading Series will continue next season in December and February. Horizons, which features new voices in a staged reading setting, provides community access to plays that may not fit into the school's annual season; its aim is to broaden understandings of the range of theatrical writing, subject matter and stylistic form.

For package options or to place a subscription order, call the box office at 412-268-2407 between noon and 5 p.m., Monday through Friday. Special discounts are available to all Carnegie Mellon alumni.

All Subscriber Series performances are at 8 p.m., Tuesday through Friday, and 2 and 8 p.m. on Saturdays in CMU's Purnell Center for the Arts.



PATRICK WILSON (RIGHT) STARS ON FX'S “FARGO” THIS FALL.

Be S.A.F.E.

Campus Police Offer Women Two-Hour Safety Awareness Class

■ Kelly Saavedra

The signs are all over campus: there's a new crime prevention initiative in town.

Campus police are well aware that CMU faculty, staff and students have a lot of demands on their time, but they also want to be sure women are educated about safety.

So starting this fall, they're offering a two-hour safety awareness class, called "S.A.F.E.," as an alternative to their well-attended Rape Aggression Defense (R.A.D.) class, which requires much more of a time commitment.

"ALTHOUGH R.A.D. IS A POPULAR CHOICE FOR MANY ON CAMPUS, WE FEEL THAT A TWO-HOUR CLASS WOULD BE MORE ATTRACTIVE FOR A GOOD PORTION OF OUR STUDENTS, FACULTY AND STAFF, AND WE WANT TO REACH AS MANY PEOPLE AS WE CAN WITH THIS IMPORTANT SAFETY INFORMATION TO EDUCATE THEM." — LT. JOSEPH MEYERS

The S.A.F.E. program — an acronym for Self-defense Awareness and Familiarization Exchange — is an award-winning awareness and prevention program that provides women with information that may reduce their risk of exposure to violence and introduce them to the physical aspects of self-defense.

The program's purpose is two-fold: to prevent crimes of sexual violence in the community through education and training, and to educate women about realistic options that will help them avoid, escape and survive assaults if they do occur.

"The advantage of this class over R.A.D. is that R.A.D. is a 12-hour class," said Lieutenant Joseph Meyers. "Although R.A.D. is a popular choice for many on campus, we feel that a two-hour class would be more attractive for

a good portion of our students, faculty and staff, and we want to reach as many people as we can with this important safety information to educate them."

The S.A.F.E. class essentially focuses on three components: avoidance, escape and survival of physical attacks, particularly those of a sexual nature.

Participants of S.A.F.E. can expect:

- a dynamic, super-graphic 13-piece full color folio packed with safety information every woman should know;
- a 17-minute motivational video shown as part of every program, narrated by Emmy Award-winning actress Sharon Gless, who starred in "Cagney & Lacey" and "Burn Notice"; and
- a 1-1/2 hour familiarization with physical self-defense.

Meyers says this particular program has been very successful at other universities.

"In just two short hours, the S.A.F.E. class provides women with solid, public safety awareness information they can incorporate into their everyday lives," Meyers said. "It's based on the premise that 90 percent of self-defense is awareness, risk reduction and avoiding confrontation. Only 10 percent of self-defense is physical. The focus of the class is on ensuring that people are both mentally and physically prepared."

Security Officer Mikki Williams

is one of three CMU police officers who have been certified as S.A.F.E. instructors.

"There are a number of reasons why I am glad I am able to take part in the S.A.F.E. course," Williams said. "The main reason that I believe the course is so important is that it empowers women to take a stand for themselves."

Williams said women are often viewed as the weaker sex in any culture, and therefore are preyed upon more than men.

"The S.A.F.E. course arms women with some of the necessary tools to avoid harm and protect themselves in many different situations."

Police Officer Stacey Griffin and Security Officer Jim Moran also are certified to teach the class. Police officers Don Campbell and Leah Boehler and Security Officer Erick Canizales will assist the instructors in their presentations.

If you would like to schedule a S.A.F.E. class for your campus group or department, contact the CMU Police Department at campuspd@cmu.edu.

Gender Equity CONTINUED FROM PAGE ONE

members and a culture that does not tolerate discrimination of any kind," said Holly Hippensteel, who was appointed part-time interim director of Title IX Initiatives and Title IX Coordinator. "That said, there is always more that can be done."

Hippensteel has worked closely with many individuals committed to Title IX and gender equity issues at Carnegie Mellon over the years, and says she was more than happy to take up the charge of building on the strong foundation that already exists.

"I know how passionately folks at Carnegie Mellon are working to raise awareness, and I hope that our new office is able to channel all of the positive initiatives already happening while also taking advantage of the fact that we now have staff members dedicated solely to these areas so that we can build and grow our efforts," Hippensteel said.

In his announcement of the new office to the campus community, Vice President of Campus Affairs Michael Murphy praised Hippensteel for her exceptional contributions as a deputy Title IX coordinator. He described her as being "deeply committed to building a supportive climate in which each of our community members can thrive."

Serving alongside Hippensteel is alumna Jamie Edwards (DC'07), assistant director of Title IX Initiatives. Murphy said Edwards has established herself as "a rising leader in the field, demonstrating an enviable blend of a sharp analytical mind with strong interpersonal skills and a collaborative spirit."

To Edwards, Title IX means ensuring that community members are not being discriminated against, harassed, excluded or otherwise harmed because of their gender.

"I want everyone to feel supported and to know that they have equal access and support," she said.

Edwards is looking forward to implementing impactful prevention programs; connecting individuals with the support and resources they need; and ensuring a fair and just process for handling all claims of misconduct.

"Perhaps somewhat counter-intuitively, I expect that an increase in the number of reports over the next few years will tell us we are doing our job," Edwards said. "If we see an increase in reporting, we will know that more people are aware of the university's efforts in the Title IX space, and that they have faith in the process."

Hippensteel says the office's top



HOLLY HIPPENSTEEL (LEFT) AND JAMIE EDWARDS GAVE PRESENTATIONS ON GENDER EQUALITY TO STUDENTS DURING ORIENTATION WEEK.

priorities include the creation and launch of a comprehensive web-based resource and a focus on high-quality community education. She said Murphy; Gina Casalegno, Lucas Christain and Jess Klein from Student Affairs; Dan Munsch and Jim Mercolini from Legal Affairs; and Everett Tademy and Dan McNulty from Human Resources have been instrumental in helping her and Edwards establish goals for the coming year.

"We are taking lots of input as we

update our protocols and determine how our office can best support the work being done by others in units such as University Police, University Health Services, and Counseling and Psychological Services," Hippensteel said.

"Lastly, we are trying to just get the word out about our office so that folks understand who we are, how to contact us (tix@cmu.edu) and when we might be helpful. This is very important work."

Trouble on the Train Tracks

Drill Brings Staff Together for Emergency Response

■ Bruce Gerson

At 3 p.m., Aug. 10, a train pulling tanker cars of liquefied petroleum gas and other hazardous materials abruptly screeched to a halt and caught fire on the tracks under the bridge over Forbes Avenue near the Robert Mehrabian Collaborative Innovation Center (CIC).

Thick black smoke billowed into the air and Pittsburgh Emergency Management ordered University Police to evacuate the campus to a quarter mile from the area.

Several sports camps and pre-college classes were in progress, and an international cybersecurity conference was in session at the CIC.

CMU's Emergency Operations Center (EOC) sprung into action at the direction of Environmental Health and Safety Director Madelyn Miller, who was conducting her 10th annual Emergency Response Desktop Drill.

At tables spread throughout Rangos I, more than 45 staff members from across campus representing the EOC's Executive Policy Group, Unified Command, and Communications, Operations, Safety/Security, and Planning and Risk Assessment teams huddled and began to map out their emergency response strategies and activities.

A CMU-Alert message was drafted and sent to the campus community asking those in the affected zone to evacuate to their home or convene at the assembly area nearest them. Facilities Management Services moved to shut down air handling intake units in nearby buildings. The Student Health, Housing and Dining, and Safety and Security teams activated to accommodate for faculty, staff and students as well as the visiting campers, pre-college students and conference attendees.

After 15 minutes of planning each group gave an overview of what they discussed and what actions were taken,



CMU'S ANNUAL EMERGENCY RESPONSE DESKTOP DRILL FEATURED A TRAIN CATCHING ON FIRE UNDER THE BRIDGE NEAR THE ROBERT MEHRABIAN COLLABORATIVE INNOVATION CENTER.

in addition to raising issues and concerns.

After round one, new developments building on the existing scenario were introduced, followed by more team planning, group discussion and debate.

Representatives from the City of Pittsburgh, George Washington University and the University of Maryland, Baltimore County (UMBC), where a train pulling hazardous materials really did catch fire, attended the drill and were surprised by the involvement of so many

staff members in the room.

The drill included staff from Athletics, Computing Services, Conference and Event Services, Environmental Health and Safety, FMS, Housing and Dining Services, Marketing & Communications, Risk Management, Student Affairs, University Health Services and University Police.

"What was impressive about this was the number of groups that were at the table to bring up all the things that you don't normally think about in an emergency," said Patrick Wolf, assistant director of Environmental Health & Safety at UMBC.

"With any emergency response you're never going to have all the answers. The question is do you have the ability to communicate within your group to start talking about these issues ahead of time. This is what planning is all about," Wolf said.

Jonathan Henry, an emergency management specialist for the City of Pittsburgh, said he normally doesn't see participation from so many university components at desktop exercises.

"I was pleased to see the acknowledgement from Mr. Henry as to the turnout from the many different departments. I think that shows the seriousness with which we take emergency response and planning," said Vice President and

General Counsel Mary Jo Dively of the Executive Policy Group.

"As in every one of these that I've attended in a decade, I learned new things that we can do better. They're always valuable."

The 10th annual drill was a first for Vice Provost for Research Gary Fedder.

"It's always useful to bring people together from across the university to think about these types of things that otherwise we wouldn't necessarily take the time to think about, and to learn of all the different connections we can make," Fedder said.

George Nunez, director of Emergency Management at George Washington, said being able to assess what you can't do is just as important as assessing what you can do.

"Any institution or organization needs to recognize what resources it has to be able to handle incidents and emergencies, but also when we don't have the resources we must look outward to our colleague institutions, across the county or nationally for help," he said.

Miller said it was heartening to see so many people participating and communicating.

"You can't respond to a complex emergency if you don't get people together," she said.

REGISTER FOR CMU-ALERT

Faculty and staff are encouraged to register for CMU-Alert, the university's emergency notification service. In the event of a campus emergency, CMU-Alert sends voice and text messages to your registered phone number.

Your contact information will be treated confidentially. You will be contacted by the CMU-Alert service only if there is an incident or event (including severe weather) that threatens public safety, or during tests of the system in the spring and fall semesters.

Note that the text and voice options may carry a nominal fee for recipients, depending on your mobile phone carrier and mobile phone plan. Questions or concerns about the service can be emailed to cmu-alert@andrew.cmu.edu.

More information on registering for CMU-Alert is available on the Environmental Health & Safety website.

Register for CMU-Alert today!



Professor Puts Talents on Ice

Ventura Joins Penguins as Analytics Consultant

■ Bruce Gerson

The Pittsburgh Penguins have signed Carnegie Mellon's Sam Ventura.

He's not a play-making forward, a hard-hitting defenseman or a lightning quick goaltender, but the 27-year-old junior faculty member in the Statistics Department is hoping to make a big impact nonetheless.

Ventura is among the growing breed of statistical analysts in professional sports, an industry proliferated by Moneyball, the book and subsequent movie, about the Oakland Athletics' reliance on data analytics to build a successful baseball team. Last year, Karim Kassam, a former CMU professor of social and decision sciences, joined the Pittsburgh Steelers as their analytics and research coordinator.

"In any field, if you can objectively back up your decision with data, you're doing yourself a favor," said Ventura, who earned his bachelor's and master's degrees and Ph.D. in statistics at CMU.

A Pittsburgh native and lifelong hockey player and enthusiast, Ventura's appointment as a consultant with the Penguins stems from his senior year at CMU and Andrew Thomas, a professor who taught a class about applying statistical methods to the sporting world.

Ventura said he and Thomas, a native of Toronto, had a mutual interest in hockey. They put their heads together on a project rating players in the National Hockey League that incorporated statistical properties that went beyond the standard plus-minus rating, which assigns a value to a player based on the total number of goals his team scores and the opponent scores while that player is on the ice.

The project led to a paper that was published in The Annals of Applied Statistics and a panel discussion at the Joint Statistical Meetings, the annual major statistics conference. Ventura was a panelist for "Advances in Methods for the Analysis of Ice Hockey."

"It was a good discussion with a big Q&A with the audience. The conclusion was we thought our work was very good, but the common and advanced fans didn't have access to it. There was no public presentation of our results," Ventura said.



SAM VENTURA IS AMONG THE GROWING BREED OF STATISTICAL ANALYSTS IN PROFESSIONAL SPORTS.

Enter War-on-Ice.com, a comprehensive visually appealing website that Ventura and Thomas co-developed to introduce fans to more statistical metrics. WAR is an acronym that stands for Wins Above Replacement, which measures how many wins a player helps a team achieve over someone who would be his replacement.

While fans can go to NHL.com for

Ventura said another big predictor is the total number of shots a team takes during a game, even the ones that are blocked and not officially logged as shots on goal.

"The idea is that the more shots a team takes, the more puck possession time they have. That's a good predictor of wins and losses and future success," Ventura said.

"WE'RE EXCITED TO ADD SOMEONE OF SAM'S TALENT TO OUR ORGANIZATION. ADVANCE STATS DATA CONTINUES TO EMERGE AND EVOLVE DAILY, AND SAM WILL BE INSTRUMENTAL IN HELPING US INTERPRET NEW FINDINGS IN THAT AREA."

— JASON KARMANOS, PENGUINS' VP OF HOCKEY OPERATIONS

player and team statistics, Ventura says War-on-Ice.com is different in two ways.

"War-on-Ice is geared to the more advanced fan, who is interested in stats that are good descriptors of what happened in the past but also good predictors of what will happen in the future," Ventura explained.

"That's what's behind the core tenet of modern hockey stats. We like to present the metrics that are predictors, like WAR."

Ventura feels the website and the Pittsburgh Hockey Analytics Workshop, hosted by War-on-Ice and the Statistics Department at CMU last November, piqued the Penguins' interest in him.

"We're excited to add someone of Sam's talent to our organization," said Jason Karmanos, the Penguins' vice president of hockey operations. "Advance stats data continues to emerge and evolve daily, and Sam will be instrumental in helping us interpret new findings in

that area."

Ventura said areas in which quantitative analysis could provide value include research about which players play well with each other and against each other, and if it's advantageous to play your starting goaltender in games on consecutive days.

This fall, Ventura will juggle his consultant duties with his responsibilities at CMU. As a freshly minted Ph.D. and visiting faculty member, he'll be teaching Probability Theory and Random Processes, an introductory course aimed at computer science and engineering students.

He's also a faculty co-adviser for the undergraduate Sports Analytics Club at CMU, and will be assuming his role behind the bench as an assistant coach for the CMU Hockey Club. Last year he helped the Tartans win its league championship.

"I only scored one goal and was injured. But I helped the team in other ways.

"That's what statistical analysis is all about. You have to find niches where you can provide value," he said.

The Penguins are counting on it.