

THE STEVENS INDICATOR

SPRING / SUMMER 2017 ♦ THE MAGAZINE OF THE STEVENS ALUMNI ASSOCIATION



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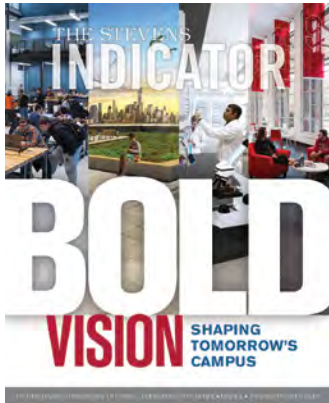
THE MAGAZINE OF THE STEVENS ALUMNI ASSOCIATION
 SPRING / SUMMER 2017

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<p>SPRING / SUMMER 2017 VOL. 138, NO. 2</p> <p>Assistant Vice President, Alumni Engagement & Annual Giving Executive Director, Stevens Alumni Association Melissa Fuest</p> <p>Executive Director Emeritus Anita Lang</p> <p>Editor Beth Kissinger bkissing@stevens.edu</p>	<p>Assistant Editor Rebecca Markley rmarkley@stevens.edu</p> <p>Contributors Joe Arney Stevens Office of Academic Communications & Marketing</p> <p>Paul Karr Stevens Division of Communications & Marketing</p> <p>Lina Kirby Stevens Office of Academic Communications & Marketing</p> <p>Alan Skontra Office of Development</p> <p>Young Soo Yang Stevens Division of Communications & Marketing</p>	<p>Art Direction/Design www.DanFlintDesign.com</p> <p>Additional Art Direction/Design Michael Hofmann Simone Larson</p> <p>Published three times a year by The Stevens Alumni Association, member of the Council for Advancement and Support of Education. © 2017 Stevens Alumni Association</p> <p>Indicator Correspondence The Stevens Indicator 1 Castle Point Terrace Hoboken, NJ 07030 Phone: (201) 216-5161 Fax: (201) 216-5520</p>	<p>Letters to the Editor editor@alumni.stevens.edu</p> <p>Class Log submissions alumni-log@stevens.edu</p> <p>General SAA inquiries Contact the Alumni Office Phone: (201) 216-5163 Fax: (201) 216-8247 alumni@stevens.edu</p> 
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PRESIDENTS' CORNER

MANY THANKS FOR YOUR DEDICATION — AND FOR MOVING US FORWARD



As my tenure as president of the Stevens Alumni Association winds down, I would like to express my profound appreciation and thanks to the multitude of alumni who supported me and, more importantly, our beloved alma mater. The remarkable amount of time and talent that you have generously contributed over the past two years is truly inspiring and serves as a beacon for current and future generations of alumni.

It is because of our tremendously devoted and active graduates that the SAA has been able to accomplish a number of key initiatives that not only strengthen our relationship with the university, but also bring us into the 21st century. As many of you are aware, the SAA Constitution and Bylaws by which the association is governed were drafted more than 100 years ago, in 1906. While many of the articles outlined in the original document have proven to withstand the test of time, a few critical elements were in dire need of improvement — in particular, the way in which the association conducts its voting process.

The association's leadership was delighted with the overwhelming response from the alumni body to the recent amendment ballot. With nearly 3,500 ballots cast, the amendments passed with 95 percent voting in the affirmative to allow the association to conduct its business in a manner that befits the digital age, by allowing electronic voting for future elections and amendment changes. To all of you who cast your vote, thank you for helping to demonstrate what we alumni can accomplish when we act on our commitment to Stevens and take an active interest in our association.

As we move into the second phase of modernizing the SAA, we will continue to communicate regularly with you and welcome your input and engagement. By keeping yourselves informed, by sustaining your involvement and by investing your time, talent and treasure, I am confident that the SAA can become a model for alumni volunteer organizations — yet another way in which Stevens is garnering the recognition and reputation we all know it deserves.

Thank you, again, to each and every one of you who are helping to lead Stevens and the Alumni Association into the 21st century.

Per aspera ad astra,

A handwritten signature in dark ink, appearing to read "Joe DiPompeo". The signature is fluid and cursive, with a long horizontal line extending to the right.

Joe DiPompeo '98 M.Eng. '99
President, Stevens Alumni Association

P.S. I look forward to seeing you at Alumni Weekend — June 2 to 4. And don't forget, with the end of the fiscal year fast approaching on June 30, to make your annual gift to Stevens.

REMARKABLE PROGRESS AND THE ROAD AHEAD

Five years ago, the university community set forth on an ambitious journey: a 10-year strategic plan titled, *The Future. Ours to Create*. This plan charted a course toward a future that builds upon our historic legacy and leverages our distinctive strengths to become a premier, student-centric, technological research university. We have arrived at the midpoint of the implementation of the strategic plan, and I am proud to report some of the remarkable and unprecedented progress that has been achieved across all areas of the university during the past five years:

- ▶ Undergraduate applications have increased 106 percent; undergraduate enrollment has increased 28 percent; and undergraduate admissions selectivity has reached 39 percent;
- ▶ Middle 50 percent SAT scores have increased from 1190-1390 to 1260-1440;
- ▶ The first-year retention rate rose from 92 percent to 95 percent and the six-year graduation rate rose from 79 percent to 83 percent;
- ▶ 96 percent of the Class of 2016 secured career outcomes in intended fields within six months of graduation, with an average starting salary of \$67,100;
- ▶ Graduate applications have increased 139 percent, and graduate enrollment has increased 16 percent;
- ▶ The full-time faculty body has increased 23 percent, with new faculty members hailing from institutions such as Harvard, MIT, Princeton, Stanford, Carnegie Mellon and UNC-Chapel Hill;
- ▶ Sponsored research awards have increased by 17 percent to \$35.6 million;
- ▶ Gifts and pledges increased 338 percent;
- ▶ Stevens' rankings continue to rise, with a notable 17-place improvement from 88th to 71st in *U.S. News & World Report's* "Best Colleges" rankings, National Universities category, making Stevens the third-fastest-rising university among the top 100 universities in the nation;
- ▶ Standard & Poor's raised its bond rating of Stevens to "A-" with a stable outlook, and Moody's upgraded the university's outlook from "stable" to "positive"; and
- ▶ Our IT infrastructure and enterprise systems have been transformed from archaic to cutting edge.



PHOTO: ARON HOUSTON

In just five years, the collective dedication and investment of the university community has enabled these critical advances toward our strategic goals and laid the foundation for realizing our vision for the future. The next five years promise to be equally transformative as we build a world-class physical infrastructure befitting our university's ascent.

Bright and innovative students have inspired modern spaces that cultivate interdisciplinary collaboration, like the ABS Engineering Center; that nurture entrepreneurial ventures and ideas, like the Stevens Venture Center; and that provide dedicated resources, like the Lore-El Center for Women's Leadership, which will be renovated and

relaunched to support women's programs on campus. Forward-thinking faculty members are the impetus for new, cutting-edge laboratory spaces that will facilitate boundary-pushing research across diverse domains, from alternative energy to music and technology, healthcare, cybersecurity and urban resiliency. Dedicated alumni are setting the standard with strategic investments in modern facilities. From the Ruesterholz Admissions Center, to the Hanlon Laboratory for Financial Analytics and Data Visualization (Hanlon 2), which expands the university's strengths in high-tech financial systems, to the Gianforte Academic Center, which will provide state-of-the-art space for teaching, learning and research, these investments ensure that areas of critical importance to the university will continue to flourish.

As you will read in this issue of *The Indicator*, renewed energy, dedicated focus and elevated measures of excellence across our community are raising the bar for the necessary and exciting developments that will define the future of our university.

I offer heartfelt thanks to each and every member of the Stevens community for all that you do to advance our journey toward becoming a world-class university.

Per aspera ad astra,

Nariman Farvardin
 President, Stevens Institute of Technology
 president@stevens.edu
 201-216-5213

LETTERS TO THE EDITOR

ILLUSTRIOUS EXXON ALUMNUS

Nice ExxonMobil piece; I delayed noticing it. (*Editor's Note: See the Spring 2016 issue of The Indicator, which includes a story on the active ExxonMobil/Houston-based alumni group.*) But you missed bragging about a Class of '55 person, Edwin J. Hess; see my career biography on Ed a few issues back. (*Editor's Note: See the 1955 Class Log in the Fall 2014 issue of The Indicator.*) Ed was a senior vice president and a member of the executive committee that ran the world-wide Exxon Corporation (now ExxonMobil).

Harvard also has "bragging rights"; Ed's MBA is from there, and he is a past president of the Harvard Business School alumni. At Stevens, he was head of the student body and salutatorian of our Class of '55. In 1993, he received the Stevens Honor Award.

Ed is the model of what Harvey Nathaniel Davis, Stevens' third president (who, when in leaving Harvard, chose Stevens to continue and expand his broadening of engineering education), wanted to produce.

Davis, and his product Hess, should be projected as "North Stars" for young Stevens alumni, and not just in Houston. — *Jim Spady '55*

(*Editor's Note: Since 1971, Dr. Spady has served as class secretary and Indicator log writer for the Class of 1955. He served as president of the Stevens Alumni Association from 1970 to 1971.*)

The Indicator invites you to share your feedback and thoughts about the magazine with a Letter to the Editor. Please contact us at editor@stevens.edu.

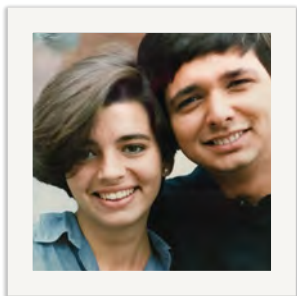
SOCIAL MEDIA

The Stevens Alumni Association requested alumni share their Stevens love stories using #StevensAlumniCouples.



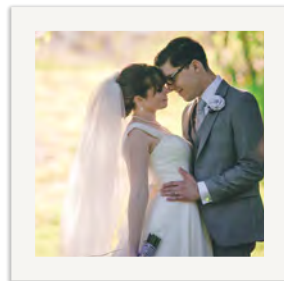
Ann Azevedo '79 and Donato T. DiGenova '76

"We met at the start of Ann's freshman and Don's senior year when Don was laying his rug out to dry on the lawn in front of Palmer dorm. (Someone had turned a firehose on during orientation weekend.) We were friends all through that year, and performed in 'A Funny Thing Happened on the Way to the Forum' together. We became a couple as the year ended. Three years later, just before Ann's graduation, we got married at the Newman Center on campus. 38 years later, here we are!" (*See page 32 for more on Ann Azevedo.*)



Victoria '10 M.Eng. '13 and Joe Manfredonia '12

"We met in 2008 when I was working at DeBaun as an usher for 'Seussical the Musical' and he was playing in the pit band. A few weeks later, we became friends when he was acting in SDS' show 'The Mystery of Edwin Drood,' and I was the costume designer. We started dating soon after. We dated all throughout college, and he proposed at Castle Point at sunrise."



Maria '89 and Hermes Gonzalez '89 M.S. '95

"It was the summer of 1984 and the SIT STEP Program was the 'bridge' to our lifelong inseparable love journey together. Instead of sending a wedding picture, I chose to send a picture that was taken at Stevens, and since this first date in 1986, we have been holding hands ever since. We have two beautiful, smart, wonderful children with extraordinary human qualities. We have traveled the world and just recently relocated to Southern California. We look forward to many more memories to be made, always having SIT as our place where we found each other and fell in love."



Continue to share your stories using #StevensAlumni

STEVENS ON THE STREET

Close to 80 alumni who work on Wall Street returned to campus this past January for a special “Stevens On the Street” event, where they saw a demonstration of the new Hanlon Lab for Financial Analytics and Data Visualization, attended a talk by keynote speaker John Schwall ’95 M.S. ’98, a co-founder and chief operating officer of IEX, and enjoyed an evening of networking. ❖

Right: President Nariman Farvardin and Sean Hanlon ’80 welcome alumni to the new finance lab, made possible by the generosity of Hanlon and his wife, Cathy. To learn more about the new lab, see page 18.



HOUSTON CLUB

More than 40 Houston alumni and guests welcomed Gregory Prastacos, dean of the Stevens School of Business, at the State of Stevens Series event on Feb. 7 at the Sam Houston Hotel in downtown Houston. Dean Prastacos shared the impressive progress the school has made in the past five years along with the many accolades Stevens has received in recent years. ❖ — Frank Roberto ’76



CALENDAR




JUNE 2-4
FRIDAY-SUNDAY
 Alumni Weekend 2017
stevens.edu/alumniweekend


JUNE 14-15 **WEDNESDAY-THURSDAY**
 The 4th Stevens Conference on Bacteria-Material Interactions, Stevens campus,
stevens.edu/biomaterials2017



JUNE 17
SATURDAY
 “It’s a Shore Thing,” Jenkinson’s Inlet Restaurant, Point Pleasant Beach, NJ



JUNE 21
WEDNESDAY
 Stevens Venture Center Speaker Series presents Nick Landry, Microsoft: “Building a Startup for the Mobile-First, Cloud-First World”



JUNE 21
WEDNESDAY
 15th Annual Stevens Athletics Golf Outing, Arcola Country Club, Paramus, NJ

JULY 19 Stevens Venture Center Speaker Series, Robert W. Walsh, HELP USA Fund
WEDNESDAY

 For all Stevens events, visit www.stevens.edu/events

GRIST FROM THE MILL

STEVENS NAMES NEW SES DEAN

Dr. Jean Zu, an accomplished scholar of mechanical vibrations and dynamics, and mechatronics, has been named the new dean of the Charles V. Schaefer, Jr. School of Engineering & Science (SES) at the university following an international search.

Zu, who most recently served as chair of the Department of Mechanical and Industrial Engineering at the University of Toronto, began her appointment at Stevens on May 1.

Christophe Pierre, Stevens' provost and vice president for academic affairs, says, "As an accomplished academic administrator and a leading scholar in her field, Dr. Zu is poised to nurture the growth of SES and inspire collaboration across all four schools of Stevens. I'm confident that her vision, experience, drive and commitment to excellence will position her to build upon the excellent work of our faculty, staff and students, and raise the profile of the school to its full potential."

Zu's research interests reside in mechanical vibrations, dynamic analysis, design and mechatronics of various mechanical systems. She has successfully collaborated with many different companies on research projects with a focus on automotive applications. Zu recently extended her research to biomedical instruments and vibration-based energy harvesting. She has published more than 300 refereed papers, including 160 journal papers, and attracted numerous grants and contracts from government and industry to support her research.



Dr. Jean Zu

"I am honored and excited to join the Stevens community as dean of the Schaefer School of Engineering & Science," Zu said in a statement. "I am deeply impressed by Stevens and the school's upward trajectory, momentum and student-centric, technological innovation-focused culture. I look forward to collaborating with my new colleagues to develop new innovative interdisciplinary research and programmatic opportunities. With its world-class faculty, impressive students, newly planned research facilities and premier location proximate to New York City, SES is poised to continue on its track of excellence."

Zu graduated with B.S. and M.S. degrees from Tsinghua University in China. She traveled to Canada and obtained her Ph.D. from the University of Manitoba. Zu joined the University of Toronto's Department

of Mechanical and Industrial Engineering in 1994 and was soon promoted to associate professor in 1999, and to full professor in 2004. Zu had served as chair, Department of Mechanical and Industrial Engineering, since July 2009.

Zu's contributions to her profession outside of the university are extensive. She served as the president of the Engineering Institute of Canada (EIC) from 2012 to 2014, and is a fellow of the Canadian Academy of Engineering (CAE), the American Association for the Advancement of Science (AAAS), the American Society of Mechanical Engineers (ASME) and the Canadian Society of Mechanical Engineering. Zu succeeds longtime SES dean Michael Bruno. The school has been operating under the leadership of interim dean Keith Sheppard. ♦

PDLs BRINGS GOOGLE RESEARCH DIRECTOR TO CAMPUS

Peter Norvig, director of research for Google, was the ninth speaker in the university's President's Distinguished Lecture Series and gave a stimulating lecture titled "Creating Software with Machine Learning: Challenges and Promise" on April 24 that drew a record number of Stevens community members to DeBaun Auditorium.

Introduced by Stevens President Nariman Farvardin as the "superguru of artificial intelligence" and clad in his trademark Hawaiian shirt, Norvig co-authored *Artificial Intelligence: A Modern Approach*, the leading textbook in the field. Prior to becoming director of research at Google, he presided over the search giant's core search algorithms group, and was also previously head of NASA's Ames Computational Sciences Division as the agency's senior computer scientist.

Norvig's talk, which centered on the possibilities and unique challenges posed by machine learning, demonstrated the compelling advantages machine learning-created programs have over traditional software development.

Advances in technology, he says, are now making it possible for computers to take the place of humans in writing programs. Using the meta-



Dr. Peter Norvig, second from right, at a reception following his lecture on April 24.

PHOTO: JEFF WOCK

phor of a "black box" to describe artificial intelligence, Norvig explained how a computer can now be fed large numbers of examples or quantities of data until it learns to complete a task itself without human direction.

The most obvious advantage from this shift in the way software is built is the speed in which tasks can be performed.

STEVENS' CREDIT PROFILE UPGRADED

As part of their ongoing review of the university's credit profile and in connection with Stevens' upcoming bond issue, the two major rating agencies have both upgraded their credit assessments of Stevens, reaffirming the considerable progress at Stevens, exceptional performance and financial strength. Standard & Poor's raised its bond rating of Stevens from "BBB+" with a positive outlook to "A-" with a stable outlook. Moody's Investors Service affirmed the current "Baa2" rating but upgraded its outlook from stable to positive.



Both Standard & Poor's and Moody's cited a number of positive credit characteristics for Stevens, including: healthy student demand evidenced by ongoing increases in freshmen applications; improvements in selectivity and academic success and commensurate growth in net tuition revenue; high-quality niche programs in STEM; consistently strong operating margins; and a seasoned and experienced senior management team. The reports provided by both Standard & Poor's and Moody's are available at stevens.edu/credit_ratings. ❖



PHOTO: JEFF VOOK

For more information or to purchase tickets, please visit stevens.edu/onstage

JAZZ HITS THE STEVENS STAGE

OnStage at Stevens, the university's performing arts and cultural series, will close out its inaugural season with a performance by the New Jersey Symphony Orchestra on June 2 at DeBaun Auditorium. The program, *When Classical Music Meets Jazz!*, will showcase a collaboration among NJSO musicians and New Jersey's best jazz musicians. The evening will feature jazz greats Rufus Reid, Sara Caswell and Charles Pillow. Previous NJSO performances for OnStage included a holiday concert in December and a *Tribute to Broadway* in March. ❖

"[Machine learning] allows you to go fast," Norvig noted. "Instead of having the programmer spend days and weeks developing the program, you can throw some data at the machine and you can instantly get a response."

But this breathtaking speed can come at a steep cost — the greater the speed, the greater the crash when a problem develops, he cautioned. Another issue that arises in machine learning-created software is the increased difficulty in isolating bugs. Not being able to see into the "black box" makes debugging a great deal more challenging.

"There aren't established and proven debugging tools and processes, as there are with traditional software," he explained.

Perhaps the most exciting possibility of AI is its capacity to skip step-by-step instruction entirely and "surprise" us with the results.

"We're telling the machine, 'I can't tell you how to do it, I may not even know how to do it,' but I do know how to train a computer to do that task by showing them examples."

While the promise of machines learning to think for themselves creates great excitement among technology professionals, it causes anxiety

for others. Still, Norvig makes a clear distinction between intelligence of the human kind and machine intelligence. He is adamant that the goal of machine learning is not to duplicate humans, but instead to team humans and machines together to do things each cannot do on their own.

"We build these tools to serve us. To the extent that they're useful, we use them, and to the extent they free up time for us to do other things means we can do other things, and there are a lot of cases where you want to have a combination of humans and computer tools," he noted.

President Farvardin presented Norvig with Stevens' President's Medal and announced a new student scholarship named in Norvig's honor.

Dr. Oren Etzioni, chief executive officer of the Allen Institute for Artificial Intelligence, will be the next series speaker on Oct. 4. ❖



To view the lecture video and a special Q&A with Dr. Norvig, and for more on the President's Distinguished Lecture Series, visit stevens.edu/lecture

PHOTO: JEFF VOCK



Dr. Shaun Harper

SCHOLAR SPEAKS OF A CAMPUS OF INCLUSION

Dr. Shaun Harper, professor and executive director of the Center for the Study of Race & Equity in Education at the University of Pennsylvania, gave a thought-provoking lecture to the Stevens community on Jan. 26 as part of Stevens' Excellence Through Diversity Lecture Series. The new initiative is designed to introduce ideas and perspectives to increase understanding of the value of diversity and enhance the university's efforts toward inclusive excellence in STEM.

Titled "In Pursuit of Excellence: Critical Perspectives on Racial Equity," the lecture centered around the findings of a racial climate study Harper and his research team conducted over a ten-year period at 41 predominantly white college campuses. Survey responses from students of color — African Americans, Asian Americans, Latinos and Native Americans — offered a vivid snapshot of systemic challenges and disadvantages that can, over time, impact students in dangerous and lasting ways, leading to anxiety, depression and lowered confidence, explained Harper.

"Central to Stevens' core mission of educating outstanding students and addressing global challenges through research and innovation is offering an academic environment where everyone is fully engaged," Susan Metz, executive director of diversity and inclusion at Stevens, said. "Our aim is to provide an exceptionally strong and positive educational experience for all students, and Dr. Harper's research informs programs, processes and a strategy that can benefit our community." ❖

 To read more about Dr. Harper's talk and the Excellence Through Diversity Lecture Series at Stevens, visit stevens.edu/diversityseries



PHOTO: GRAY MORRISON

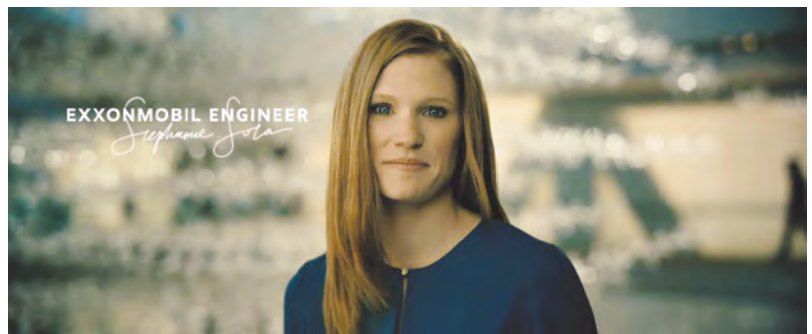
▲ Fifteen different student organizations, including the Student Government Association, Amnesty International and WCPR, joined efforts to stage the Stevens For Solidarity rally on March 22. The event was organized to take a stance against hate and discrimination, and to promote unity across campus. Above, students express their thoughts on the America they believe in.

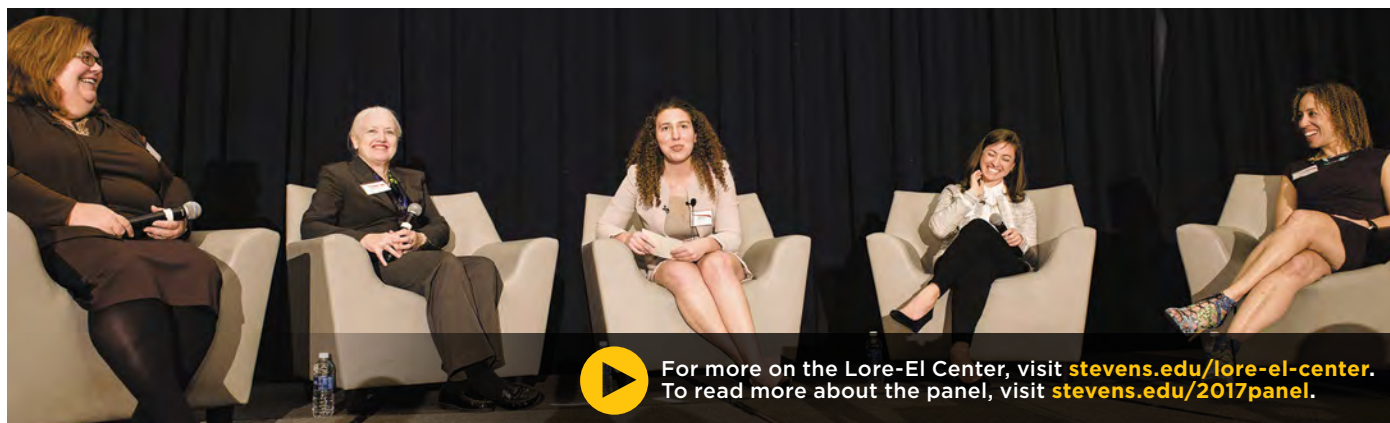
GRAD BUSINESS SCHOOL NO. 1 IN EMPLOYMENT

The 2018 *U.S. News & World Report* rankings of graduate business schools are in, and the ratings say that when it comes to student employment at graduation, nobody does it better than Stevens. With a 94.9 percent employment rate at graduation, the School of Business at Stevens is ranked No. 1 in the country. Career success at Stevens isn't limited to graduate students — 100 percent of business graduates in the Class of 2016 were employed in the field of their choice or enrolled in graduate school within six months of commencement. *U.S. News* rated Stevens No. 83 overall in its ranking of the country's best business schools for graduate students. The rankings consider factors such as selectivity, employment rates and salaries. It's the first time the School of Business has been ranked by the magazine, following its accreditation by the Association to Advance Collegiate Schools of Business in 2015. For the past two years, *U.S. News* has also ranked the Stevens online MBA No. 1 in New Jersey. ❖

ALUMNA APPEARS IN NATIONAL COMMERCIAL

ExxonMobil mechanical engineer Stephanie Sota '11 M.Eng. '11 recently flexed her voiceover chops and made an appearance in a commercial for the company, which focused on the oil giant's efforts to create energy industry jobs while reducing U.S. emissions. "I was one of the lucky engineers from the [North American Growth Project] that got selected to be part of the ad campaign," Sota says. "More and more individuals around the office are recognizing me and it's definitely an interesting experience for so many new people to know who I am." The commercial aired nationally, most notably during the NCAA Division 1 Men's Basketball Tournament in March. ▼





For more on the Lore-El Center, visit stevens.edu/lore-el-center. To read more about the panel, visit stevens.edu/2017panel.

WOMEN LEADERS CELEBRATED

A “Celebration of Women in Leadership at Stevens” on March 30 marked the relaunch of the Lore-El Center. The 4,500-square-foot Victorian-style house on Castle Point Terrace, which provides a unique living and learning experience for undergraduate women, will undergo renovation this summer to become a vibrant hub for women’s programming. The evening’s marquee event was a panel discussion featuring, from left: Mary Anne Cannon ’86; Martha Connolly ’75; student moderator Olivia Schreiber ’18; Suzanne D’Addio ’07; and Laura Dorival Paglione ’90. ❖

DEAN, STUDENT SPEAK AT SXSW

South By Southwest was a hot spot for Stevens in March when College of Arts and Letters Dean Kelland Thomas and business student Ibrahim Abukwaik ’19 spoke on panels at the annual Austin, Texas, event. Thomas was a panel participant in “Every Little Thing’s Gonna Be AI” on March 16, where he discussed, among other things, how artificial intelligence will affect the way we experience music. Abukwaik shared entrepreneurial advice on a panel at SXSWedu, which brings together diverse stakeholders in the education field to discuss entrepreneurship in K-12 schooling. Abukwaik, who sold his campus tour company, BluTours, to Campus Sherpa, a leader in the campus tour industry, offered this advice to budding entrepreneurs: “You don’t have to wait until you’re 25, or have ‘x’ amount of experience to start something. If you’re interested in something, and are genuinely passionate about it, go out and do it.” ❖



PASSING OF AN ADMISSIONS ICON

Robert H. Seavy M.S. ’48, who spent four decades at Stevens as a student, chemistry professor, administrator and dean of admissions and played a critical role in the historic decision to admit Stevens’ first class of undergraduate women, died on Jan. 4. He was 95. Seavy joined Stevens in 1943 and taught chemistry to student Navy officer candidates in the V-12 program. After enlisting in 1944 and serving in the Army Medical Corps during World War II, he returned to Stevens in 1946. He earned his master’s degree in chemical engineering in 1948 and later was named assistant professor of chemistry. He spent the majority of his Stevens career with admissions, as assistant director of admissions, director of admissions and later dean of admissions. Seavy retired in 1986 and was named dean of admissions emeritus. As director of admissions, his strong support and charisma helped to convince the Board of Trustees and faculty to welcome Stevens’ first class of undergraduate women in the fall of 1971. He was very proud of that pioneering class of women, says Edwina Fleming, the retired director of international admissions at Stevens who

worked for Seavy and knew him for 40 years. “He was very supportive of them and he never treated anyone other than equal, and I think that they appreciated that,” Fleming says. “I think that the thing that people remember about him was his kind spirit.” ❖



Robert Seavy M.S. '48



Dr. Julie Pullen (right) will travel to the Philippines in 2018 on a Fulbright scholarship to teach, perform research and refine extreme weather models and forecasts that can save lives.

PHOTO: JEFF VOCK

CRACKING THE WEATHER CODE

FULBRIGHT RECIPIENT KNOWS WHY WIND AND WATER MOVE

Imagine a killer, super-Sandy-sized hurricane bearing down on a coastal city with just a few days of advance warning. How will the resulting rain, wind, waves and tides affect everything from drinking water to subway service? How should residents and planners prepare?

Stevens Institute of Technology ocean engineering professor Julie Pullen can help.

Now imagine a canister of toxic substances, released during an 18-wheeler crash on the FDR Drive — or, worse, released by a terrorist's helicopter, drone or plane above the city. Few would be able to judge which neighborhoods were in danger as wind rapidly dispersed the poison.

Yet, once again — with a little information about the time of year and the day's weather — Pullen can make a very strong educated guess.

"Julie is one of those rare individuals who is equally comfortable tackling hard science questions about how the ocean and atmosphere interact and leading high-profile, impactful international policy forums," says Alan Blumberg, director of Stevens' Davidson Laboratory and a longtime collaborator.

Now Pullen, a leading expert on fluids,

winds, oceans and weather — and, importantly, the ways in which those systems continuously interact with one another — has received her latest significant honor, a Fulbright scholarship to travel, teach and perform research abroad. Beginning next January, she will spend five months teaching at the University of the Philippines Diliman (UPD) and refining models and forecasts that will save lives.

"The timing of your visit coincides with expanding regional, country and university efforts to advance prediction and monitoring of natural hazards," noted UPD professor Olivia Cabrera, who will collaborate in the creation of new meteorology and other coursework at the university, in the official invitation to Pullen to join UPD's faculty as a visiting professor. "And I'm confident that we can achieve so much more by your presence."

DISCOVERING HOW MOUNTAIN WINDS FUEL KILLER STORMS

Typhoons and heavy rainstorms are common in the Philippines, creating floods and landslides and necessitating evacuations. As one of the world's ten nations most impacted

by extreme weather-related disasters, its government has begun building an early-warning system that can predict floods and warn residents in affected areas. But there's still more to be done.

Pullen was drawn both by the urgency of the threat and by scientific curiosity.

"Island environments are really interesting focal points for coastal urban sustainability challenges," she notes.

During previous research with the U.S. Office of Naval Research (ONR) in the region, Pullen had already unlocked a key dynamic for the first time: The shapes of the islands of the Philippines, it turns out, significantly influence the weather that swirls around them. Wind jets passing through the islands, shaped by mountains, send huge, deep whirlpool-type systems swirling out to sea, driving ocean currents and affecting everything from local deadly rainfall events to regional fisheries and global weather.

"When strong winds blow through island systems," she explains, "they create patterns of intensified winds in the gaps between islands and weaker winds in the lees of the islands. You get these strong-weak-strong-weak pat-

terns, and the ocean responds really strongly to that type of forcing” with large-scale eddies.

It was a remarkable insight, connecting several dots. Forecasters, taking into account these new findings, can now more accurately predict strong downpours in the region year-round by applying integrated models that account for the influence of air temperature, river flow, ocean salinity and other variables on one another.

will perform an ONR field research trip, continuing ongoing Stevens collaborations with the Navy as it maps oceanographic conditions and collects data in the region.

And that broader project, assisted by NASA measurements of the atmosphere, will soon help scientists worldwide build better models to predict extreme weather in their local areas — one reason nations as far afield as Australia, the United Kingdom and Japan are planning

chemical, biological, radiological and nuclear substances would spread in those cities. She also served, for a time, as director of Stevens’ Maritime Security Center, a Department of Homeland Security-affiliated National Center of Excellence, and plans to revisit the work soon in the metropolitan New York region.

“There’s a surprising lack of data about dispersion in urban environments,” she points out. “So I’m looking to work on that, partnering with the emergency-response community.”

In addition to planning new experiments updating the science — releasing harmless gases or powders on the ground or in the air in the city, then tracking their movements — Pullen also hopes to train local response agencies to make field observations that can help improve forecasting and future planning for potential disasters.

“It does take a lot of work with local partners to be able to predict on a very local scale,” she notes. “The work that’s been done here in the Davidson Laboratory by Alan Blumberg and colleagues has really pioneered that path to show street-scale, neighborhood-scale impacts. This really shows us the way forward.”

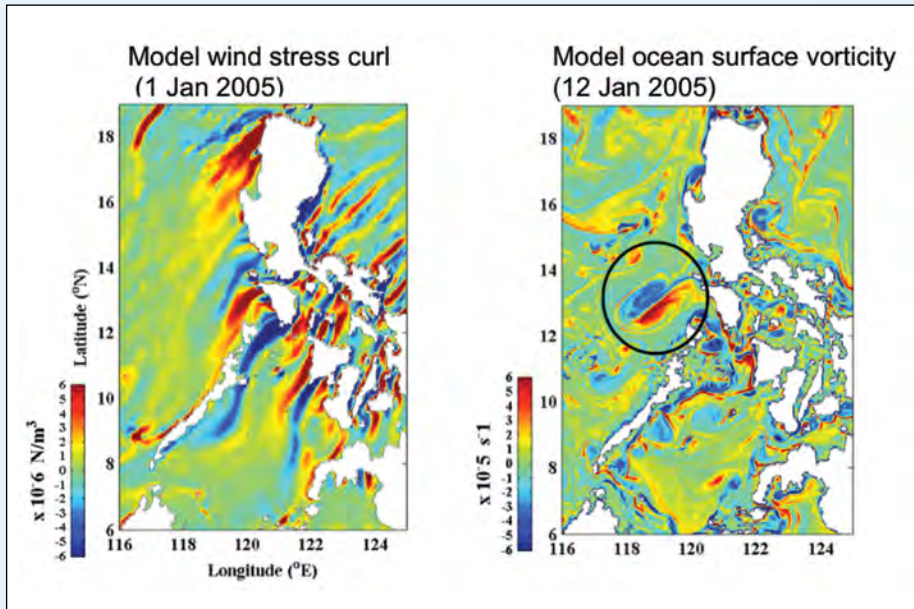
TEACHING SCIENTISTS, FORGING COLLABORATIONS

After returning to Stevens from the Fulbright, she’ll continue to balance research with teaching.

“I enjoy teaching,” she says. “I enjoy the dialogue, I enjoy the conversation and I enjoy seeing students develop as independent thinkers. That’s just a great thrill to me. I tend to really emphasize conceptual insights from them to be able to make those leaps and apply those ideas in different contexts. I think that is the essence of learning.”

Pullen will also continue a busy schedule of international travel and advocacy, bringing together scientists from diverse backgrounds and nations in the collective interest of creating ever-better forecasts and public awareness.

“All of these models have extraordinary fidelity,” she says, “but they have to be connected. [We] have to exchange the information, and I think that’s the biggest challenge of the field that I work in right now.” ♦ — Paul Karr



▲ Above: Pullen’s research revealed how winds passing through mountainous Philippine islands (above left) create large, whirlpool-like eddies (circled, at right) in the South China Sea.

The tremendous volume of water pouring into rivers during storms, for example, empties into the South China Sea, lowering its salinity and stratifying the near-shore ocean water and preventing heat from being naturally generated. This, in turn, creates new dynamics, triggering weather effects that may now be more knowable.

“Putting that whole picture together is a really exciting aspect of this work,” enthuses Pullen, “not just the modeling but bringing together those observational data sets that include the rain gauges, the river discharge data, satellite images, as well as new and emerging measurements [such as] radar measurements of rainfall.”

Following her Fulbright residency, Pullen

to send government research vessels to assist.

“The tropics are key. They’re a ‘hot spot’ for propagating features that influence the whole planet,” explains Pullen.

WEATHER AS SECURITY INFORMATION

In the wake of the 2001 terrorist attacks on New York City and Washington D.C., Pullen has also turned her expert knowledge of weather systems to a number of security issues, including research on Manhattan wind patterns and the 2011 Fukushima, Japan, radiation-release disaster.

As a Fellow at Stanford’s Center for International Security and Cooperation, she was one of the first to link air/sea models to homeland security studies predicting how



To watch an interview with Dr. Pullen, visit stevens.edu/pullen_video

ABS ENGINEERING CENTER





The new ABS Engineering Center includes the Systems Integration Laboratory, a dedicated workspace for students to collaborate on senior design projects.

STEVENS



THE LAUNCH OF A HISTORIC CAMPUS REVITALIZATION

Explore the Stevens campus today and you will perceive a physical revitalization, surely and steadily unfolding, one never before experienced in the university's 147-year history.

Enter some buildings and you will discover newly renovated classrooms and labs; a new finance laboratory unlike any other in the nation; or the transformation of a former naval research space into modern labs, offices and a striking, wide-open space for student collaboration. Still other buildings reveal bold, inviting new spaces for students to study, meet and dream.

Come later this year, the changes will become even more visible on the exterior, and will soon alter the Castle Point landscape. And some truly game-changing infrastructure projects wait just on the horizon.

More than 50 projects — from major construction like the ABS Engineering Center and the North Building to a slew of renovated classrooms and laboratories; from the new Hanlon Laboratory for Financial Analytics and Data Visualization to a vibrant new lobby for the Schaefer Athletic Center

tant research areas; to attract and retain some of the best students and faculty in the world; to make a global impact by tackling some of the most challenging and complex problems of our time.

So the revitalization of Stevens' physical infrastructure is happening to allow the university to become what President Nariman Farvardin says it was always meant to be — a powerhouse.

“The revitalization of our campus will enable Stevens to achieve the ambitious

room, laboratory, and study space renovations, and many other projects in the pipeline — these are all physical embodiments of the excellence Stevens is building, both literally and figuratively. The campus will provide the physical environment for our students and faculty to achieve their goals.”

The physical transformation of the campus touches all aspects of life at Stevens: academic, research, student life, faculty well-being, staff who support the university. But benefiting and elevating the education and lives of students and faculty will be the guiding light. *(Please see the accompanying stories on several new facilities that are having a direct impact right now on student learning, teaching and research.)*

While dozens of projects large and small have been completed or are under way, these are the major construction projects that will help transform the research, learning and living environment at Stevens:

“The revitalization of our campus will enable Stevens to achieve the ambitious goals we have set for ourselves through our ten-year strategic plan – providing the environment and facilities to become a premier, student-centric, technological research university.” – President Nariman Farvardin

— have all been completed in the last two years, with major projects like the Gianforte Academic Center now on deck.

The exciting flurry of projects can be traced from late 2014, with the opening of the Ruesterholz Admissions Center, and will continue as Stevens closes in on its 150th anniversary in 2020. The transformation of the Stevens infrastructure is specifically designed to support the university's ambitious ten-year strategic plan. That plan: to grow Stevens in student size and in prestige; to strengthen impor-

goals we have set for ourselves through our ten-year strategic plan — providing the environment and facilities to become a premier, student-centric, technological research university,” he says.

“To become a world-class university, Stevens needs world-class facilities — technology-infused classrooms; state-of-the-art laboratories; modern housing for our students; and interactive spaces for collaboration among students and faculty,” Farvardin says. “The Gianforte Academic Center, the ABS Engineering Center, dozens of class-

The Gianforte Academic Center

This 89,500-square-foot, four-story academic building at 6th and Hudson streets — made possible by a gift from major benefactors Susan and Greg Gianforte '83 M.Eng. '83 Hon. D.Eng. '12 — will house state-of-the-art classrooms, teaching and research labs, offices and seminar space. Occupancy is planned for July 2019. *(See accompanying story on Greg Gianforte on page 20.)*

The North Building

This three-story, 15,000-square-foot, first-ever modular construction on campus will initially serve as “swing space” for the

TIMELINE

COMPLETED PROJECTS



Ruesterholz Admissions Center dedication, Oct. 29, 2014

McLean, Burchard classroom renovations, January 2015 (part of annual classroom upgrades)

EAS Building classroom renovations, Summer 2016

Charles V. Schaefer Jr. Athletic and Recreation Center Lobby renovation, Summer 2016

America's Cup renovation, Summer 2016



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©KAT KENDON/KENDON PHOTOGRAPHY

The renovated Schaefer Center lobby celebrates Stevens athletics and provides a bright and airy space for students to study and relax.

Computer Science Department, when it moves from the Lieb Building and awaits its new home in the Gianforte Center. Construction on this permanent academic classroom and office building, located on the campus' north side, is to be completed

this spring, with a targeted move-in date during the summer.

Babbio Parking Garage extension

A four-story addition and long-awaited completion of the garage will add 266 new parking

spaces. But the area will also become a beautified public space, with a plaza and a viewing platform offering those sweeping views of the Hudson and New York City skyline that so many students and alumni treasure. Completion is targeted for January 2018.



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Gatehouse reconstruction and restoration, Summer 2016

S.C. Williams Library study space expansion, Summer 2016



©KAT KENDON/KENDON PHOTOGRAPHY

Pierce Dining Hall Cafe, Summer 2016

The Hanlon Laboratory for Financial Analytics and Data Visualization (Hanlon 2) opens, August 2016



The Gianforte Academic Center, above, with a planned completion date of July 2019, will provide much-needed academic and research space, including 15 teaching and research labs. At right, proposed common spaces inside the center will include areas for student collaboration and study.

The proposed student housing and university center

An 80,000-square-foot university center with a student housing component targeting 1,000 beds is now in the planning stage. Targeted completion is 2020.

“Any one of these projects would have been significant just five years ago and now, we are doing them simultaneously,” says

Robert Maffia, Stevens’ vice president for facilities and campus operations.

The strategic plan and its goals have certainly been a major factor and consideration in the design of the Stevens infrastructure plan, Maffia says.

“The driving force is to create more academic space to support our growth and the key elements of our strategic plan,” Maffia

says. “This includes more classrooms, labs, study space, faculty offices and all of the ancillary spaces to support this mission.”

So far, funding for the projects has come mostly from current capital funding, with some support from grants and gifts from alumni and other supporters. Alumni support will be vital to the completion of future infrastructure projects, though, as one of



ABS Engineering Center dedication, Nov. 17, 2016

Technology Resource and Assistance Center dedication, February 2017

WHAT'S COMING



Lore-El Center (Phase I) targeted completion, Summer 2017

the three priorities of the *Power of Stevens* fundraising campaign is a vibrant campus.

So many of the projects will be defined by their student impact.

Gregory McNeil '18 says that he appreciates the smaller changes already happening on campus, whether it's new seating in a Burchard lecture hall or the renovation of the America's Cup student café. But it's the future campus — the Gianforte Academic Center, the proposed university center and student housing — that really fills him with excitement.

"It's a beautiful design," he says of the Gianforte Center. "I love the futuristic architecture." A uni-

versity center and student housing is long overdue, he says, and it's major changes like these that will help propel Stevens to become a premier university that he'll be

even more proud of in the future.

"I'm always pro-construction, to make the campus nicer while keeping its vibe," he says. "I want my campus to look beautiful,

and I think that President Farvardin is hitting the nail on the head with these improvements."

Another student-focused project to watch: the Lore-El Center for Women's Leadership. Located in a gracious Victorian-style home on Castle Point and first launched in 1999, the center serves as a residence for women and offers programs

that encourage them to seek leadership roles and explore STEM careers. A two-pronged renovation, slated to begin this summer, will include interior renovation work on the first floor to allow for a better environment for Lore-El programming, and construction of a new exterior terrace.

In the end, the physical transformation of the Stevens campus will honor the legacy of its founders and of its past, while looking to the current and future needs of its students and faculty. It is an exciting time to be on campus.

"When you see things coming from the ground and steel going up, there's an excitement," Maffia says. "Students will see buildings start to go up and be completed while they're still at Stevens." ❖ — *Beth Kissinger*

"The driving force is to create more academic space to support our growth and the key elements of our strategic plan. This includes more classrooms, labs, study space, faculty offices and all of the ancillary spaces to support this mission." – Robert Maffia, vice president of the Division of Facilities & Campus Operations



Babbio Garage extension targeted completion, January 2018

Alexander House (interim Student Center) targeted completion, April 2018

Pond House (Wellness Center) targeted completion, March 2018



Lore-El Center (Phase II) targeted completion, Summer 2018

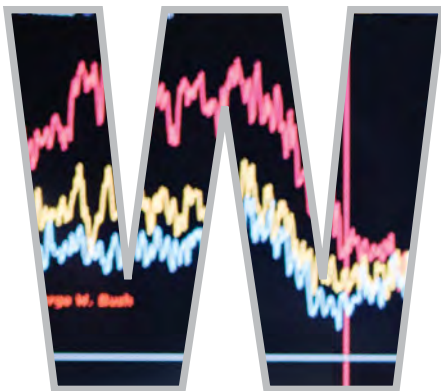
Gianforte Academic Center targeted completion, July 2019

Student Housing-University Center targeted completion, July 2020



NEW LAB IS SECOND TO NONE

'Hanlon 2' prepares students for data-driven workforce



When Stevens opened the Hanlon Financial Systems Lab in 2012, it demonstrated the university's leadership in teaching students about, and powering research into, how technology and data were poised to create upheaval for managers in finance.

Not even five years later, the continuing evolution of that technology — and the creative ways it is disrupting finance — has driven the launch of the new Hanlon Laboratory for Financial Analytics and Data Visualization. It's a testament both to how fast technology is causing seismic changes in this industry and to Stevens' leadership in thinking about how tech-savvy managers can make smarter decisions faster in a data- and analytics-driven world.

"Data coming through the financial markets today is immeasurably faster and more detailed than just ten years ago — humans are unable to analyze this information alone in time to think strategically or react to major events," said Dr. George Calhoun, director of the Hanlon Financial Systems Center and of the undergraduate quantitative finance program at the School of Business. "People must be able to use analytic engines to visualize the data, or they will be unable to respond to fast-developing market opportunities."

The new facility — called Hanlon 2 for short — was made possible through the continued generosity of Sean Hanlon '80 and his wife, Cathy, whose support also enabled the construction of the first Hanlon lab.

"This new lab will improve how students learn, enhancing both their technology and business skills and better positioning them to manage evolving technologies when they enter the workplace," said Hanlon, a Stevens trustee and chairman and CEO of Hanlon Investment Management.

Business students said they're acutely aware of the value the skills taught through the lab provide in the workplace.

"In an increasingly digital and data-driven marketplace, the ability to visualize and analyze multidimensional data is becoming a crucial component for corporate success and decision-making," said quantitative finance student Dakota Wixom '17.

Wixom, who has done internships in quantitative investment banking and risk for Charles Schwab and Mizuho, said the lab "is Stevens' response to the digitization of the workplace and the democratization of data analysis."

Hanlon 2 gives students access to real-time Bloomberg data and powerful tools, such as R, SAS and Hadoop, that allow students to analyze and visualize historical and live data. It also includes collaborative Oblong technology — used on the front end of IBM's Watson platform — that encourages students to introduce their own work and findings into the class discussion through screens that they can access via smartphone or laptop. The extensive deployment of Oblong in the lab is unique in higher education.



PHOTOS: JEFF YOICK



At left, students collaborate on a data visualization project during a finance class in the Hanlon Laboratory for Financial Analytics and Data Visualization (Hanlon 2). Technology in the lab helps students better analyze data in real time, preparing them to make better decisions on the job. Above, technology in Hanlon 2 allows students to use smartphones and other devices to introduce new threads of discussion into lectures.

And the tools available in the lab have applications outside quantitative finance.

“The data science revolution is going to change every business model — banking, selling toys, drugstores, they’re all being pulled into it,” Calhoun said.

“The ability for managers to extract important signals, and to present them in a way that’s relevant to the decisions companies have to make, will be invaluable in tomorrow’s job market — and our students will be fully prepared.”

The strategic direction of the lab, and of finance at Stevens, is owed largely to the generosity of the Hanlon family.

“When I joined the Board in December of 2010, I said that Stevens was a \$25 stock headed to \$100,” Hanlon said during a lab dedication ceremony. “I’m here to tell you that it has exceeded \$100 a share, and if you will permit me the Wall Street

“This new lab will improve how students learn, enhancing both their technology and business skills and better positioning them to manage evolving technologies when they enter the workplace.” — Sean Hanlon ’80

metaphor, I’m going to up my target price. Stevens is headed for \$500 per share.”

Dr. Khaldoun Khashanah, director of the financial engineering program at Stevens, called Hanlon’s support “transformative” for the university.

“He has elevated Stevens nationally to compete in finance and financial engineering, both intellectually and practically, with great impact,” Khashanah said. ❖ — Joe Arney

BIG BOOST FROM BIG SKY COUNTRY

Gianforte's vision for high-tech future includes his alma mater



hat keeps a wildly successful tech entrepreneur up at night, when he's considering the state of the U.S. economy? Greg Gianforte '83 M.S. '83 Hon. D.Eng. '12 doesn't hesitate when asked — the search for talent.

He's heard this from

everyone, from local manufacturers to high-tech firms, in his adopted home state of Montana and across the country: Finding well-trained, well-educated workers who have strong technical skills is a challenge.

"There really is no industry not dominated by technology — pharmaceutical, automotive, as well as the software industry. I often say, jokingly, that computers are here to stay," he says.

"It's essential that we produce people with an education in which you have mastery of the machine. It's a tool like any other tool, but it's an incredibly powerful tool that must be harnessed. It's essential to produce critical-thinking young people and put them in the driver's seat to impact the economy."

When he recalls his Stevens experience — and sees the Stevens of today — Gianforte is hopeful.

Supplying this needed talent for the country "fits squarely with Stevens' mission," Gianforte says. Stevens prepares its graduates with "a rigor and (an ability) to solve the hard problems.

"As the economy becomes more and more determined by technology, it's engineering that fuels the growth," Gianforte says. "Stevens does a remarkable job. President Farvardin's vision to increase the volume of graduates is spot-on. It's what the country needs."

Gianforte and his wife, Susan, herself an engineer, support Stevens' mission to produce more engineers, scientists and technically savvy problem-solvers so deeply that they, through their Gianforte Family Foundation, have again made a record-breaking gift to his alma mater — a second \$10 million to support the Gianforte Academic Center, adding to the \$10 million gift they made in 2012. Combined, it amounts to the largest gift to a single project in the university's history.

The \$63.5 million project, slated to open in July 2019, will be the dazzling new centerpiece of the Stevens campus — a four-story, 89,500-square-foot center built on two separate sites, connected by a glass pedestrian bridge across Sixth Street. It will house 13 classrooms, 15 teaching and research labs, and 40 offices and seminar spaces. The Department of Computer Science will be headquartered on two floors of the south building in the complex, and there will be an array of laboratories in the Center for Healthcare Innovation housed in the north building, including 3D and 2D Tissue Culture Labs. The south building will also be the home of a new Prototype Manufacturing Lab.

Gianforte cites three reasons that compelled him to make this historic gift — the university's great momentum, his desire to lift Stevens to the next level and gratitude.

"The momentum is from our (Stevens) leadership. Stevens is now poised to have an impact over the next 100 years, to produce graduates who make significant contributions to society," Gianforte says.

Their gift is a way of lifting Stevens to the next level of influence and prominence, he says — and is also his way of saying thank you.

"I firmly believe that to whom much is given, much is expected," he says. "Stevens played a pivotal role in my life, and I am grateful."

From its early history to today, "Stevens has shown an ability to adapt and to learn," Gianforte adds. "There's no question that the world is getting more complicated."

A teenage entrepreneur — he started a software business in high school back in Wayne, Pennsylvania — Gianforte began his post-Stevens career with Bell Laboratories. But he soon struck out on his own again, founding Brightwork, a pioneering developer of network management applications, in 1986. Gianforte sold Brightwork to McAfee Associates in 1994. In 1995, he and his young family moved to Montana — a place that he had fallen in love with during camping trips as a teenager. There, in 1997, Gianforte founded RightNow Technologies with just \$5,000 and a dream around his family's kitchen table. The cloud-based customer service and support solutions company grew over 15 years to employ more than 1,100 people worldwide, with about half in Bozeman. Gianforte took the company public in 2004 and ultimately the company was purchased by Oracle for \$1.8 billion in 2012.



The Gianfortes, who have four children, founded the Gianforte Family Foundation in 2006, with funding primarily for projects that focus on jobs, education and families. Other focus areas are anti-poverty and healthcare initiatives, Christian outreach and discipleship and Bozeman arts and culture. Since its founding, the foundation has given more than \$50 million to projects around the world, mostly in the state of Montana (www.GianforteFoundation.org).

In addition to his philanthropy work and serving on the board of several companies, Gianforte serves as managing director of the Bozeman Technology Incubator and actively mentors Montana entrepreneurs. He also founded Bootstrap Montana, a micro-loan program to help entrepreneurs learn the principles of bootstrapping and provide micro-loans to rural Montana entrepreneurs.

His passion and interests sway strongly toward technology innovation and job creation. To help increase the number of computer scientists that Montana will need for its growing tech economy, in 2016, Gianforte donated \$8 million to Montana State University's computer science department. He also co-founded CodeMontana, a non-profit that provides computer science curriculum to middle school and high school students.

This avid hunter and fisherman even created "Come Home to Montana," a campaign in which he mailed letters to thousands of

Montanans who had left the state inviting them to come home and bring a job with them to telecommute from Montana.

But his most high-profile pursuit yet was a run

for the Montana governorship in 2016, with a platform of more high-wage jobs for the state and keeping the next generation of Montanans in Big Sky Country. In a close contest, Gianforte — the GOP candidate who had never held public office — lost to incumbent Democratic Governor Steve Bullock by 4 percentage points.

Gianforte's education priorities during the campaign reflected both his high-tech expertise and his conservative GOP platform: computer science offered in all high schools; expanding trades education; school choice and public schools with more local control and parental input; and a stronger connection between education, jobs and outcomes, including a website that shows students starting salaries for their career choices.

This January, Gianforte announced that he was running for the U.S. House of Representatives seat vacated by U.S. Rep. Ryan Zinke, whom President Donald Trump appointed as Secretary of the Interior. The election is scheduled for May (held after press time) and is Gianforte's primary focus right now.

"I've spent my whole life in business, and I'm excited to go to Washington to help," he says.

Gianforte sees an urgent need for more engineers — natural problem-solvers — in Congress. "They know how to solve problems and are good at math," he says. He notes the dearth of engineers in the Congress and says that, if elected, he will be one of just a few electrical engineers in the U.S. House.

From Big Sky Country to the Beltway, he would also carry his entrepreneurial spirit.

"The way to prosperity is through economic development, created by entrepreneurs with a sparkle in their eye, a dream and elbow grease," Gianforte says. ❖ — *Beth Kissinger*

"I firmly believe that to whom much is given, much is expected. Stevens played a pivotal role in my life, and I am grateful."

— Greg Gianforte '83
M.S. '83 Hon. D.Eng '12

Susan and Greg Gianforte '83 M.S. '83 Hon. D.Eng '12 at home in Bozeman, Montana.



KELLY GORHAM

ENGINEERING NEW SOLUTIONS

ABS Engineering Center launch expands teaching, research capabilities



In Nov. 17, 2016, Stevens Institute of Technology unveiled and dedicated the three-story ABS Engineering Center, enabled by the generous support of the Houston-based American Bureau of Shipping.

In a newly refurbished space, full-wall graphics nod to Stevens' heritage in naval engineering, maritime research and related areas — appropriate, since the structure was originally built during World War II with the

support of the U.S. Navy, and was long used for testing torpedoes and other defense technologies and student projects.

Now five laboratories will fill the multi-use space, extending Stevens' reach in key areas of engineering, design and homeland security.

"This is, first and foremost, a teaching facility," says Keith Sheppard, associate dean for undergraduate academics in the School of Engineering and Science. "It will be a place for students to learn from faculty, and to learn together with each other as they work on design projects. And research, of course, will also take place here."

Five labs enabling teamwork, coursework, design work

Work in the center will range across disciplines, from robotics to building materials, maritime craft testing and green technology.

The Systems Integration Laboratory occupies most of the ground floor of the facility, creating a newly dedicated workspace for students to collaborate on required year-long senior design projects, chiefly in the mechanical, civil and naval engineering domains. Movable tables, white boards, projectors and storage cabinets set the stage for student teams as they work.

"This new ABS space adds assembly, electromechanical system-prototyping and demonstration space for courses in the Stevens design spine as well as those focused on innovation and entrepreneurship," notes IDEaS (Innovation, Design and Entrepreneurship at Stevens) program director Kishore Pochiraju, whose program manages the lab's central design space. "In concert with spaces in the Griffith and Carnegie buildings, more than 60 projects will be prototyping and testing in the center space this spring, where students will have access to specialized prototyping cells including 3D printing."

Adjacent to the main space, a consolidated Fluids Laboratory unifies facilities and equipment previously spread across several buildings. Undergraduate civil, environmental and naval engineering students use the lab to take required core fluid dynamics courses, says Sheppard. Instructors utilize a hydraulic bench and small-scale wave tank, among other equipment, to study ship stability, wave mechanics, the effects of barriers on fluid flow and other relevant topics.

The Structural and Building Materials Laboratory, directed by Professor Marcus Rutner, provides facilities for the development and testing of innovative structural design, more resilient structures, new building materials and sensors to monitor structural health. The lab utilizes such equipment as static and dynamic testing frames, a furnace, environmental control chambers, evaluation software, infrared cameras and capabilities for composite manufacturing such as vacuum bagging.

Previous research supervised by Rutner has produced such innovations as WHISPER, a patent-pending wireless bridge-safety monitoring system developed by undergraduate students and faculty. Current research activities in the new lab include the development of sensing technology to detect defects in materials at the micro-scale level, long before they become visible to the human eye. The sensing of micro-scale defects via scanning of the global structure is "a marriage of two extremes," notes Rutner, for which an optimal technology does not yet exist. A major research effort in the field conducted by the Stevens group is currently funded by New Jersey Department of Transportation.

Another focus of the lab will be on the design and processing of composites with exceptional and tailored material properties at nano and microscale levels; current work includes developing a nanostructure-preserving metal-joining methodology. In addition, Rutner will continue to supervise research collaborations with partners including Princeton University and Texas A&M University.

"This new laboratory space and equipment provides Stevens faculty with unique possibilities for advancing education and research involving undergraduate and graduate students and conducting interdisciplinary transformative research," Rutner says.

Explosives detection, arctic research, underwater mapping

Also located in the ground-floor lab suite, the Naval Engineering Laboratory enables integration of the Davidson Laboratory's knowledge base and laboratory infrastructure with naval and



PHOTOS: ©KAT KENDON/KENDON PHOTOGRAPHY

The new ABS Engineering Center houses five laboratories including the Robust Field Autonomy Laboratory, above, where assistant professor Brendan Englot, second from left, and students demonstrate The Jackal, a mobile robot that explores terrain and intelligently creates maps as it travels. Below, research associate professor Michael DeLorme '03 and Kat Gammie '17 inside the center's Naval Engineering Laboratory.

ocean engineering students. The new space serves as a home to student research and design projects related to the naval and marine fields, with a focus on multidisciplinary efforts.

"Student and faculty teams working in these areas have previously contracted with the Department of Defense to design underwater robots that search for submersed unexploded ordnance; research benign methods to stop potentially nefarious small craft; and develop a flotation device for U.S. Army Special Forces personnel," notes research associate professor Michael DeLorme '03, who assists lab director Raju Datla in management of the lab.

Ongoing projects here include research in marine energy efficiency, intermodal short sea shipping, the design of a green vessel for research operations in Arctic regions, and the design, development and deployment of a solar-electric boat.

Next door, in the newly relocated Robust Field Autonomy Laboratory, faculty and student researchers design and enhance mobile robots for the exploration and mapping of outdoor environments that are dangerous for humans to investigate but critical to infrastructure maintenance.

A major focus, says lab director Brendan Englot, will be underwater robots working in close proximity to ships, piers and offshore platforms that intelligently determine where and how to map and inspect structures and crafts. The work could lead to robots that one day autonomously map the exterior of a ship, the underside of an oil drilling platform or the interior of a ship's bilge.



"The ABS Center will be a unique space for the cross-pollination of ideas from research and teaching activities in several different disciplines," adds Englot. "Cutting-edge, faculty-supervised research will be taking place right alongside the prototyping and testing of senior design projects. I'm excited to see the ideas and collaborations that will arise."

One of Englot's students, Kevin Doherty '17, develops algorithms to help Stevens' test robots create better three-dimensional maps on the fly as they scan the ground or seas.

"The ABS Center has allowed me to continue pursuing meaningful robotics research," notes Doherty, "because it facilitates interdisciplinary work motivated by the practical application of technology to real problems outside the academic research environment."

Space for seminars, faculty, drone testing

The upper floors of the facility will accommodate additional activities, including offices for teaching faculty drawn from various disci-

plines across campus — mechanical engineering professor Mishah Salman, systems engineering professor Eirik Hole, environmental engineering professor Elizabeth Fassman-Beck and civil engineering professor Leslie Brunell '86 M.Eng. '90 Ph.D. '96 among them — and postdoctoral fellows. A seminar room with movable configurations can accommodate events, colloquia and presentations.

It's possible additional research and teaching will also be drawn in by the facility as time passes, adds Sheppard.

"There may be other areas that also benefit from this new center," he says. "There has been discussion, for instance, of indoor drone testing in the space.

"It's clear this will truly be an interdisciplinary teaching and research facility, just as the ABS intended." ❖ — Paul Karr



KAITLIN DONOHUE



UPGRADES REFLECT STATE OF THE ARTS



When tasked with helping to redesign the Visual Arts & Technology Studio in the College of Arts and Letters this past summer, assistant professor Jeff Thompson, who is also the director of the Visual Arts & Technology Program, knew exactly

what the space needed: pingpong tables.

“The tables — which I designed and built with the help of my colleagues — are each one-half of a regulation pingpong table,” he says. “I’ve taught at a few universities that have pingpong tables, and it’s so great to have something that brings people together, lets them hang out and take a break and make friends. Plus, they happen to make perfect work tables for drawing and sculpture.”

Aside from the custom-built tables, the VA&T Studio’s recent upgrades include butcher block work counters, retractable power cables from the ceiling, woodworking tools like a panel saw and air compressor, professional drawing easels, and a new projector and sound system. The studio itself, Thompson says, “is highly reconfigurable for a range of classes,” from Creative Programming to Foundation 3D.

The nearby Fab Lab also received an upgrade and now houses a variety of equipment — a laser cutter, a MakerBot 3D printer, a CNC mill (which carves different materials and cuts circuit boards), a sewing machine, two large-format inkjet printers and print finishing and bookbinding equipment, all available for student use. There’s also the VA&T Library, which now has about 500 titles on art, design and art history.

“Artists and designers using technology don’t just need computers and an internet connection. More and more, the most interesting work happens at the intersection of the digital and the physical,” says Thompson. “Our students leave our program and work as designers, fine artists, animators, game designers,

filmmakers, start their own creative-based businesses, or go on to create careers in fields that don't exist yet.

"All Stevens students learn an incredible amount in terms of both technology and a broad-based, humanities education, but the visual arts and technology students who are most successful after leaving Stevens are the ones who also learn how to put together ideas from multiple disciplines in unique ways," he continues. "Having tools and spaces for making things and collaborating is crucial to building a community of creative work, and the new studio and Fab Lab are really intended for that. Plus, as a research institution, faculty also use these spaces for their own creative work, and students get to see firsthand what it means to be a professional in our fields."

CAL also saw the addition of the brand new Sensory Computation, Experimental Narrative Environments (SCENE) Lab, which combines software and hardware systems for the devel-

"These updates show students that the administration is willing to invest in programs outside what Stevens may be known for, which keeps current students here and draws future students in."

– Mikkel Christensen '17

to do research," he says. "Not only does the classroom look good with the new stackable tablet arm chairs, but we can quickly move between lab and classroom modes during class, enabling experiential, hands-on learning for students."

Still making a great impact in the music department is a renovation to the Piano Lab, which took place last spring.

"The traditional piano lab that you might find in a conservatory setting would include multiple digital pianos in an array that would allow students to plug in headphones and practice keyboard skills without disturbing other students in the lab," says Distinguished Industry Associate Professor and Director of the Music & Technology Program Andy Brick. "With the great

help of professor [Rob] Harari, last spring, we upgraded the lab to include a workstation surface and high-resolution monitors to each piano, transforming them into individual creative suites. Professor Cluett suggested we acquire this terrific hardware audio/device communication system, which now allows any person at any station to communicate and hear the activity of any other person or people."

Mikkel Christensen, a Music & Technology major graduating this spring, appreciates the efforts being made in CAL to keep pace with other universities that are known for their arts programs. He says keeping the facilities up to date helps graduates secure jobs and entices students to choose Stevens over other institutions.

"It's also important to ensuring that the education given to students is current and cutting-edge. These updates show students that the administration is willing to invest in programs outside what Stevens may be known for, which keeps current students here and draws future students in," Christensen says.

"Our students will be able to get deep experience in things like virtual reality and 3D printing right outside their classrooms," says CAL Dean Kelland Thomas, who himself made use of the VA&T Studio when he participated in the first VA&T Pingpong Tournament in the fall. "Renovating and creating these spaces is just the beginning of CAL becoming the epicenter for really creative work here at Stevens." ❖

– Rebecca Markley and Lina Kirby



KATHY IUVONE

At left, students make use of the Visual Arts & Technology Studio during a Drawing I class. Inset, the VA&T Studio is transformed to host the first VA&T Pingpong Tournament, whose participants included more than 30 students, staff and College of Arts and Letters Dean Kelland Thomas, far right. Above, assistant professor Christopher Manzione guides Antonella Rafael '20 through a virtual reality environment.

opment and presentation of immersive virtual spaces, including both headset and CAVE/screen-based virtual reality and augmented reality. Seth Cluett, assistant professor of music and technology, says the space now promotes practical learning.

"Before the renovation, we didn't have the infrastructure to freely experiment with different virtual and augmented reality configurations — we had to stack chairs in the hallway in order

STEVENS ADVANCES SUSTAINABILITY



Back in 2014, when Stevens called on Gotham 360, an energy consulting and management firm, to consult about the sustainability of its campus, several energy-efficient initiatives were already under way.

“The Central Steam Plant was being decommissioned and replaced by several smaller high-efficiency boilers and cogeneration units — which produce useful heat and electricity at the same time —

that were more cost-effective and efficient, and Stevens had also installed solar PV panels on nearly every available roof space and on the 8th Street parking lot,” says Sarah Gilly, an energy and sustainability programs manager with Gotham. “However, despite these impressive initiatives and the existence of some environmentally focused courses, there was no true campus-wide sustainability program.”

Fast-forward to today, and Stevens has a Sustainability Committee that engages faculty, staff and students across all departments to establish and implement sustainability initiatives. The university participates in programs such as the U.S. Department of Energy’s Better Buildings Challenge, where it has committed to a 20 percent reduction in campus-wide energy intensity (energy used per square foot) by 2024. Stevens also recently earned a STARS (Sustainability Tracking, Assessment & Rating System) Silver ranking from the Association for the Advancement of Sustainability in Higher Education, just one year after becoming an AASHE member, which, according to Gilly, is no small feat.

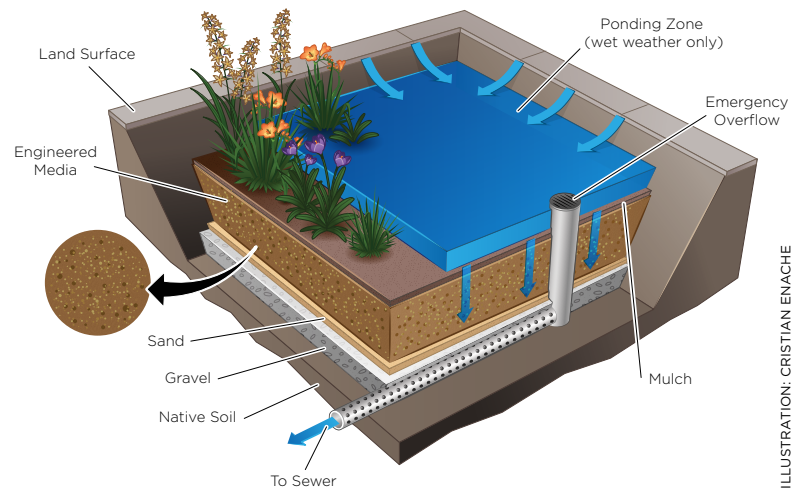
“Participation in STARS also allows Stevens to appear on lists of Sustainable/Green Schools published by the Sierra Club and The Princeton Review, which has been a goal of President [Nariman] Farvardin’s,” she says. “Now that this baseline has been established, it is much easier to observe and quantify progress.”

Robert Maffia, Stevens vice president for facilities and campus operations, has overseen the implementation of several other sustainable initiatives around campus, including solar compactors; a food waste bio-digester, which saw November 2016’s waste decrease by 9.25 tons compared to that of November 2015; 16 water bottle refill stations throughout campus which, to date,

have diverted 125,000 plastic bottles from ending up in landfills; a partnership with Hoboken’s Bike Share program and two Bike Share stations on campus; and building-level sub-metering, which provides information on an individual building’s energy usage profile, allowing for improved energy management.

Looking ahead, there are more sustainability initiatives on the horizon, such as covered bike parking, which is already in the works. Also, five electric vehicle charging stations are planned for the Babbio Garage extension, which are being funded by a grant from the New Jersey Department of Environmental Protection and with support from PSEG. And there’s an effort to expand electric sub-metering on campus.

“Currently, only five campus buildings have sub-meters that provide building-level energy consumption data, and we are



A cross-section of professor Elizabeth Fassman-Beck’s stormwater management system. Rain runoff flows into the bioretention system and down to the engineered media — a unique mixture of different types of sand, other aggregates, like pumice and zeolite, and compost — where it is soaked up.

ILLUSTRATION: CRISTIAN ENACHE

developing a plan to expand sub-metering to the entire campus,” Gilly says. “Being able to track how individual buildings perform will allow for a more targeted approach to upgrades and participation in energy demand management programs, which could bring additional revenue and cost savings to Stevens.”

Stevens is also targeting the centerpiece of its campus revitalization plan — the Gianforte Academic Center, slated to open in 2019 — for LEED (Leadership in Energy and Environmental Design) Gold status.

"In all of our work, we try to infuse elements of sustainability and green infrastructure to ensure that we are being responsible stewards of our planet, which is important to us in the administration and a strong concern of our students," Maffia says. "We are doing all of this while still maintaining the character of the campus."

Green infrastructure grows on campus

Another major initiative results from the continuing research of Dr. Elizabeth Fassman-Beck, an associate professor with the Department of Civil, Environmental and Ocean Engineering, who brought her stormwater management expertise with her when she came to Stevens from the University of Auckland in 2013. Fassman-Beck helped design the ABS Engineering Center's rain garden, and the bioretention planters, rain garden and green roof media research projects planned for the new North Building are all based on her research. Each of these engineered systems is used to capture rainwater and avoid combined sewer overflow, preventing the discharge of polluted water into rivers and streams.

"On the surface, these just look like gardens, but there's stuff going on underneath. There are functional layers within the systems and while all have similar objectives, they are different. They also present a significant research opportunity to test different combinations of materials, look at how different media affect water quality and to measure how water moves," she says.

Fassman-Beck also helped advise a senior design team that took home second prize in the Master Plan Category of the 2015 Environmental Protection Agency's Campus RainWorks Challenge. The students' "Living Laboratory" plan, a storm-water containment plan that cuts down stormwater runoff and reduces the flow of undesirable substances to the Hudson River, includes 29 different systems that could be installed throughout campus. The Division of Facilities & Campus Operations has already engaged consulting firm Tetra Tech to implement one of the systems on campus, which will collect the runoff from DeBaun Field and roof runoff from Davidson Laboratory.

"As we continue to renovate, if there's an opportunity for a RainWorks Challenge element, we try to introduce it," Maffia says.

While the university continues to expand its use of the Living Laboratory project, a new RainWorks senior design team is hard at work, their project focusing on helping to reduce the flooding issues in the Griffith Building on Sinatra Drive.

"One of the main reasons I came to Stevens is because it offers environmental engineering. It's right [near New York City] but it truly values the environment aspect, and it shows. And being able to work with civil engineers on projects means a lot," says Kristina Zekic '17, an environmental engineering major.

Her teammate Neil Forrester '17, a civil engineering major, agrees.

"It means a lot that [Stevens] takes the RainWorks Challenges seriously and is implementing them on campus," he says. "It's awesome and provides more drive when you know what you're doing can turn into something. You're not working just for the sake of learning, and potentially being able to watch your ideas come to reality is really cool." ❖ — Rebecca Markley

PHOTOS: ©KAT KENDON/KENDON PHOTOGRAPHY



PRESERVING OUR PAST

As Stevens undergoes the most significant infrastructure revitalization in its history, it recognizes that a tie to its past is essential. The brick architecture of new buildings like the Gianforte Academic Center and the North Building, for example, will complement the architecture of their older neighboring campus buildings. Certain iconic buildings and sites, meanwhile, would not undergo exterior renovations and will retain their beloved spots on campus for years to come. They are:

THE EDWIN A. STEVENS BUILDING

The university's first building, known as the "A" Building to earlier generations of alumni.

THE GATEHOUSE

The last remaining structure of the Stevens family estate, built circa 1835. A recently completed renovation replaced the roofing with slate shingles, its original style.

WALKER GYMNASIUM

This iconic building with the circular gym marked its 100th anniversary in 2015.

THE POINT AND THE STEVENS CANNON

Favorite photo op spot.

THE TORCH BEARERS STATUE

Second-favorite photo op spot.

HOXIE HOUSE

The home of the Stevens president.



— Beth Kissinger

STEVENS AWARDS *Gala*



Honorees gather with Hoveida and Nariman Farvardin at The Gala. Seated, from left, are Susan Gianforte; Josh Weston Hon. D.Eng. '96; Mrs. Farvardin; Martha Connolly '75 M.S. '75; and Rita Gurevich '06. Standing, from left, are Greg Gianforte '83 M.S. '83 Hon. D.Eng. '12; Nate Davis '76; Richard Noble '68 M.Eng. '69; President Farvardin; Steven Bandel '74; Cardinal Warde '69; and Steven Shulman '62 M.S. '63 Hon. D.Eng. '02.

The 2017 Stevens Awards Gala honorees include the university's most accomplished and most dedicated alumni and friends, representing a variety of fields – from engineering to art, academia to the business world – as well as extraordinary philanthropy. Meet the impressive class honored at the fourth celebration held this past spring at The Plaza Hotel in New York City.

STEVEN I. BANDEL '74
International Achievement Award

Steven Bandel was the co-chairman and CEO of the Cisneros Group, one of the largest media, entertainment, telecom and consumer products conglomerates in Latin America, serving more than a half-billion customers in more than 100 countries. He succeeded in several executive finance roles during his 32-year career with Cisneros, and has also served on the boards of the London International Bank, the United Way Latin America Advisory Council and the University of Miami's Center for the Hemispheric Policy.

MARTHA J. CONNOLLY '75 M.S. '75
Distinguished Alumni Award - Academia & Government

After graduating in the first undergraduate co-ed class at Stevens, Dr. Martha Connolly became the first woman to earn a doctorate in biomedical engineering at Johns Hopkins University. She currently serves as director of a bio-entrepreneurship program at the University of Maryland, enabling the commercialization of biomedical technologies. She has written 37 publications on cardiovascular systems physiology and bioengineering, and in 2013 she was inducted into the American Institute for Medical and Biological Engineering's College of Fellows.

RITA GUREVICH '06
Young Alumni Achievement Award

Soon after she graduated, Rita Gurevich founded SPHERE Technology Solutions, which now serves many Fortune 100 companies in data security, governance and compliance. She has been named a Top 25 Leading Women Entrepreneur by *New Jersey Monthly* and included on *NJBIZ's* "50 Best Women in Business" list. She has also won a Brava Award from SmartCEO and was named as a New Jersey finalist for the 2016 Ernst & Young Entrepreneur of the Year award.

RICHARD D. NOBLE '68 M.ENG. '69
Distinguished Alumni Award - Engineering

Dr. Richard Noble is currently the Alfred T. and Betty E. Look Professor of Chemical Engineering at the University of Colorado, as well as director of the NSF Membrane Applied Science and Technology Center, where he focuses on solving problems such as removing toxic compounds from air and water. He has also held positions at the University of Wyoming and the National Bureau of Standards. Noble has produced 81 patents and applications, 340 research publications, 11 textbooks and more than 12,000 academic citations.

GREG R. GIANFORTE '83 M.S. '83
HON. D.ENG. '12 AND
SUSAN GIANFORTE
President's Leadership Award

The Gianfortes have led the effort to build a truly vibrant campus at Castle Point. Their generosity has spearheaded construction of the forthcoming Gianforte Academic Center, a pair of buildings that will add dozens of modern classrooms, labs and offices. Since selling their company, RightNow Technologies, the Gianfortes have devoted their time to philanthropic causes around their home in Bozeman, Montana, throughout the United States and around the globe.

JOSH S. WESTON HON. D.ENG. '96
Friend of Stevens Award

Retired chairman and CEO of human resources firm Automatic Data Processing, Josh Weston has been a longtime friend of Stevens, including giving leading support to the new Pinnacle Scholars Program. Weston has also given a featured campus lecture, titled "Lessons on Leadership They Don't Teach You in Class." He has served on the boards of the New Jersey Performing Arts Center, the International Rescue Committee, Boys Town Jerusalem and many other civic organizations.

CARDINAL WARDE '69
Distinguished Alumni Award - Science & Technology

As a professor of electrical engineering at Massachusetts Institute of Technology, Cardinal Warde ranks as an international expert on optical information processing, holding 12 patents and 150 published technical papers. Warde is a fellow of The Optical Society of America and a former associate editor of the *Journal of Display Technology*. He has also served as a Stevens trustee, on the boards of several companies, on the National Science Foundation Small Business Advisory Committee and as an advisor to the Government of Barbados.

NATE A. DAVIS '76
Stevens Honor Award

During his long career in the telecom, media and software industries, Nate Davis has strengthened companies at every stop, fostering innovation and forging relationships with customers, legislators and regulators. He is currently chairman and previously CEO of education company K12, and previously served as CEO and board member of XM Satellite Radio. He also held executive roles at Nextel and MCI. He serves on the boards of global IT firm Unisys, realty investor RLJ Lodging Trust, and Mutual of America Capital Management.

STEVEN SHULMAN '62 M.S. '63
HON. D.ENG. '02
Outstanding Contribution Award

Steven Shulman has served Stevens as a trustee, including as vice chairman of the board and as chairman of the search committee that recruited President Nariman Farvardin in 2011. He is also a notable supporter of the School of Business. Shulman's career has spanned the auto, materials and manufacturing industries. He is currently the managing director for Shipston Equity Holdings and president of the Hampton Group.



ALEXANDER
CALDER
1919 HON.
D.ENG. '69
*Hall of
Achievement*

Recognized with the university's highest honor as an inductee into the Stevens Hall of Achievement, Calder is a legendary artist famous for inventing the mobile, a suspended kinetic sculpture made of abstract forms in space that moves in response to touch or air currents. He was a central figure in the 1920s Parisian art scene, and his work has been prominently displayed in the Guggenheim, the Whitney and the Museum of Modern Art, among others.



EVENING OF EXCELLENCE

2017 Awards Gala. Makes For A Dazzling Night





Moments from the Stevens Awards Gala, starting opposite page, clockwise from top left: Richard Noble '68; Rita Gurevich '06; Cardinal Warde '69, far left, and guests; Dean Kelland Thomas on sax.

PHOTOS: JEFF VOCK AND AMY HAND



To view a gallery of photos from the evening, visit stevens.edu/awardsgala



There were messages of hope and gratitude, reflections on the past and optimism for the future. College of Arts & Letters dean and jazz saxophonist Kelland Thomas played killer saxophone, and one honoree enjoyed a surprise serenade of “Cumpleanos Feliz” (“Happy Birthday”). It was the Stevens Awards Gala at The Plaza Hotel in New York City — and it did not disappoint.

Close to 400 alumni, students, faculty, staff and friends gathered to see Stevens honor 11 award winners — ten of them alumni — on April 8 for their extraordinary professional achievements or for their support of Stevens that has been game-changing for the university.

The evening’s brightest stars were the awardees. Honored were Martha J. Connolly '75 M.S. '75; Richard D. Noble '68 M.Eng. '69; Nate Davis '76; Steven Shulman '62 M.S. '63; Rita Gurevich '06; Josh Weston Hon. D.Eng. '96; Cardinal Warde '69; Steven Bandel '74; and Greg Gianforte '83 M.S. '83 Hon. D.Eng. '12 and his wife Susan Gianforte. World-renowned artist Alexander Calder, Class of 1919, entered the prestigious Stevens Hall of Achievement. *(For more on the awardees, see pages 28-29.)*

Gurevich, recipient of the Young Alumni Achievement Award, entered Stevens at 17 and called it the “first domino” on her journey to entrepreneurship, leading to her founding of SPHERE Technology Solutions, which offers data governance, compliance and security services to Fortune 100 companies.

Many of the honorees urged members of the audience to use their considerable talents to serve others.

Noble, a chemical engineering professor at the University of Colorado, Boulder, and winner of the Distinguished Alumni Award for Engineering, never met the people who supported his Stevens scholarship. But he is filled with gratitude to this day and gives back. He supports Voices for Children, a non-profit that helps to stop abuse and neglect and find safe homes for children.

“Everyone in this room benefited from society. Think about how you can give back,” he said. Noble encouraged other alumni and students to use their formidable Stevens problem-solving skills to help others, whether they coach a baseball team, support scholarships or protect kids from abuse and neglect.

Warde, an MIT electrical engineering professor who received the Distinguished Alumni Award, Science & Technology, shared the turning point of his life — the day he met a couple on the beach in his home country of Barbados. They urged him to apply to American universities, and he received a scholarship to Stevens. Now, he is driven to encourage young people to pursue science careers.

“Our goal is to give back a thousand times more than what was given to us,” he said. “We’re going to persist and hold this up to kids in the Caribbean to show them what is possible.”

Bandel, the retired chairman and CEO of the Cisneros Group, received the International Achievement Award and celebrated his birthday with an international entourage. Old friends from Stevens’ Latin American Club cheered him on, traveling from Honduras, Peru, Spain and Washington for the evening.

He saluted his parents, Holocaust survivors who helped their son to become the first in their family to attend college.

“I was their hope and dream for all of us,” he said. ❖ — *Rebecca Markley and Beth Kissinger*

Change Agent

For engineering executive, mentoring is a way of life

"I told myself at a very young age that I never wanted to be the person who makes it and forgets to help others."

That core value has served as a guidepost for Jerome Brown '99, from his early life on a family ranch in Central California, to his undergraduate days at Stevens and all throughout his career.

It's the reason why he has remained active in organizations like the National Society of Black Engineers (NSBE), an organization he was introduced to at Stevens.

"The number of black engineering students on any college campus isn't that great, but I didn't really appreciate the NSBE mission — of encouraging black youth to pursue professional STEM careers — until I became a working professional and saw there were even fewer people who looked like me in the workplace," Brown explains.

After graduating from Stevens with a bachelor's degree in mechanical engineering, Brown landed at some of the most prominent companies in the world — ExxonMobil and automotive powerhouse Daimler — before finding his professional footing at HDR Inc., a leading engineering, architectural and consulting firm that has roughly 10,000 employees in more than 225 locations around the world.

Brown's career at HDR spans 15 years; he currently serves as a corporate quality office director

at the 100-year-old firm. Although he recently relocated from Northern California to Washington, D.C., with his wife Peta-Gay, Brown spends much of his time traveling to HDR's many offices. His responsibilities span both the U.S. and abroad, managing global corporate risk management strategy and quality system improvements.

The common thread among HDR's diverse projects, which range from a wastewater treatment plant in a small city to high-profile projects like the Hoover Dam Bypass or the Cleveland Clinic in Abu Dhabi, is community improvement, says Brown.

"When you look at what our company does, whether it's building a transit rail line to connect communities, which in turn creates access to jobs, or replacing failing infrastructure to prevent things like what happened in Flint, Michigan, from happening in other cities, it has a direct impact on people's lives," he says. "And at the end of the day, that feels good."

He credits Stevens for providing a strong foundation for professional success, offering particular praise for the Stevens Technical Enrichment Program (STEP).

"The academic curriculum at Stevens prepares you for the workforce probably better than most any other school," he says, adding that it began for him with STEP's Bridge Summer Program, an intense residential program that introduces incoming freshmen to the curriculum and academic demands of Stevens.

"The number of black engineering students on any college campus isn't that great, but I didn't really appreciate the NSBE mission until I became a working professional."



Jerome Brown '99, a corporate quality executive with HDR Inc., is seen at the company's Arlington, Virginia, office.

PHOTO: SUZANNAH HOOVER

“It was more advanced than what most kids were used to in their high schools, but that early exposure was a big reason for my success at Stevens. I maintain those close bonds even today.”

Despite his extensive travel schedule, Brown speaks often at society and organizational events and stays engaged with organizations focused both on industry and communities. In addition, he regularly mentors pre-college youth and college students of color.

“Many youth come from the inner city where they’re dealing with a lot of challenges others never face. Being an example, providing advice that is taken for granted in other socio-economic environments and providing a bit of inspiration is invaluable. I have a few students I check in on every couple of months to make sure they’re getting through school,” he says. “If I have one of our HDR executives nearby that I think they can relate to, I definitely connect them so that someone else in our company is looking after them as well.”

“All of us got to where we are because of someone who has coached or looked after us. No one makes it on his or her own, so we all have a social contract to support and develop others.”

Brown’s sense of social responsibility stems from his own experience as the beneficiary of mentors who helped him along the way. Specifically, he vividly recalls one mentor at HDR who took him aside to offer him a piece of advice that propelled his career forward.

“He said, ‘You know, you are very guarded here at work, but if you’re willing to open yourself up and connect with others, you will be amazed at how fast opportunities will open up for you,’” recalls Brown. “That was one of those heart-to-heart talks where, without that mentor, I probably would never have advanced at HDR and be where I am today.”

Now that he finds himself in a position to make a similar impact, he fully understands the power one individual can make in affecting lives.

“All of us got to where we are because of someone who has coached or looked after us. No one makes it on his or her own, so we all have a social contract to support and develop others.” ♦ — *Young Soo Yang*

FREQUENT FLYER

“I’m going to Finland [in March] and hoping to see the Northern Lights. I’ve seen them before and it’s really special. It’s an unbelievable feeling, and you understand why the ancient people thought spirits lived in the sky — it looks like spirits dancing in the sky. I was fortunate to see them in Iceland, but the best display I’ve seen was 30 years ago at Acadia National Park in Maine. I was watching the sunset and as the darkness set in, the lights came out and it gives me goose bumps just thinking about it.”

Travel means a great deal to Ann Azevedo '79. Not only is it one of her and her husband's, Donato DiGenova '76, favorite hobbies, it's also her career. As a chief scientific and technical advisor for aircraft safety analysis with the Federal Aviation Administration, Azevedo spends her days trying to make commercial aviation safer.

Through safety meetings that look at systemic issues and individual questions about airline safety, and by actively improving material available to pilots regarding the recognition of and response to engine failure, Azevedo helps prepare pilots for issues that might come up during flight.

“When there’s a recommendation that comes to us or if something happens that relates to the product itself — the airplane, the engine — there could be some risk analysis. We have several teams that look at accidents and incidents to reduce the risk of those things happening again,” she says.

After more than 30 years in the industry, it's worth noting that Azevedo didn't grow up wanting to be a pilot or thinking she'd work in aviation; she was just open to what came her way.

“We go down paths when we come out of school and depending on the particular environment and economy, you may start in one place and have to switch. But if you're lucky enough to end up in a position that works pretty well, you're able to develop a certain amount of expertise,” she says. “Having math and engineering as my background prepared me to get my master's (from Rensselaer Polytechnic Institute) in engineering, and that mix gave me the ability to do what I do. I like being involved in many different aspects of aviation safety, and helping to have a direct effect on improving it.”

Her willingness to take things as they come is also how Azevedo found herself in Hoboken studying systems planning and management. Originally from Mas-





1 Ann Azevedo '79 and her husband, Donato DiGenova '76, rode camels in Egypt, from The Great Pyramid of Cheops (Giza), pictured, down to the Sphinx. “We held on for dear life,” she says, “since it’s primarily downhill, and camels are very bumpy walkers.” **2** Azevedo and DiGenova pose on a bridge over one of the many canals in Venice, Italy. **3** Azevedo and her husband at Denali National Park in Alaska. **4** Snorkeling in French Polynesia, Azevedo posed for a picture with sharks. **5** Azevedo makes a friend on the grounds of her hotel during a trip to Victoria Falls, which sits on the border of Zambia and Zimbabwe.



sachusetts, her parents didn’t go to college and her sister went to a local state school, so she had never heard of Stevens. But after she scored well on the SAT, Stevens reached out to her. With a solid financial aid package, a location she loved and the distinction of having contacted her early, Azevedo chose Castle Point as her new home.

“I had a really enjoyable time but it was a bit of shock because suddenly I had to start studying,” she recalls. “There are a lot of people who could do pretty well in high school without a lot of effort, but freshman year was an adjustment for so many of us because we were thrown in with a bunch of valedictorians and we had to step our game up.”

Aside from academics, Azevedo made many friends, several of whom she is still close to today, and participated in multiple clubs, including the Glee Club. (“Professor Ondrick (director of the Stevens Glee Club from 1957 to the mid-’90s) was a special individual.”) Stevens is also where she met her husband, whom she married a couple of months before graduation. They landed in Connecticut — where they still reside today — and she started working for Pratt & Whitney, which eventually led to her current position with the FAA, where she has worked since 1997.

But it’s her unofficial title of world-traveler — “I’ve visited 48 countries and protectorates, like French Polynesia, and Aruba, etc., that should be counted separately, and I’ve also been to all 50 states, DC, Puerto Rico and the Virgin Islands” — that puts the most excitement in Azevedo’s voice. Whether speaking about a recent trip to Yellowstone National Park or a cruise that she found underwhelming, she appreciates the world at large.

“I have a thirst to see everything — all things — that are out there. Being on safari in Africa was just amazing, Alaska was wonderful, and I’d love to go back to Australia,” she says. “I love to get out into nature and see animals and landscapes. We’ve had some throwaway trips but you get something from every one of them and we’re still able to enjoy them.”

And while such extensive travel isn’t always easy, the world is just too enticing for Azevedo to stop exploring anytime soon.

“I actually had this realization while climbing rocks in Australia — it’s not as easy as it used to be. Even the flying gets tougher and tougher,” she says. “But you learn so much — people are people everywhere with the same concerns. And there are so many wonderful things everywhere we’ve gone. It’s just so special to get out in the world.” ❖ — *Rebecca Markley*



ALUMNI PROFILE



‘I need multiple loves to sustain a 12-month sports year, but baseball is my No. 1’

Nick Semaca '80 at Slammers Field in Joliet, Illinois, home to his baseball team, the Joliet Slammers.

Like many youngsters, Nick Semaca '80 grew up playing sports. Unlike many youngsters, Semaca grew up and bought a baseball team. *The Indicator* caught up with him for a new profile feature called “In Their Own Words.”

So here, in his own words, is Nick Semaca:

ON BASEBALL:

I played baseball as a little kid — I remember pick-up games in the streets of my old neighborhood with my buddies — but that career ended pretty quickly. I loved it, but a little more skill would have been helpful. Growing up in northern Jersey (in Harrison and Belleville), I was a Mets fan — but I've lived in Chicago since 1982 and am now a Cubs fan — and always thought owning a minor league team would be a really cool thing to do. When I retired (from McKinsey & Company, a global management consulting firm) in 2013, I started to look for opportunities and found the Slammers (of Joliet, Illinois, in the Frontier League).

I enjoy a lot of sports because I need multiple loves to sustain a 12-month year, but baseball is my No. 1 from way back when. There's something about the smell of the glove and the feeling of clay on the infield that brings back really strong memories, and makes my current situation doubly fun.

ON ROBERT ROBBINS '16, A PITCHER FOR THE SLAMMERS:

I'd say it was half-coincidence he ended up on the team. A buddy of mine saw Robbins at a baseball camp and noticed he was from Stevens Tech, so he called me and let me know. And then I made sure that our coaching staff gave

[Robbins] a good, hard look. So it was half-coincidence, but I'm glad we were able to sign him. We hope he's going to be a big part of our team for 2017.

ON HIS CAREER AND RETIREMENT:

I was a Chem E major and worked for Mobil Oil in Princeton for two years after graduation. I decided to go to business school and got my MBA from Northwestern and joined McKinsey right after that. I did some work with consumer goods, transportation and travel companies, and natural resources. Toward the end, I was serving clients on five different continents.

Now that I'm retired, I'm involved in an eclectic mix of things. Along with the team, I invest in a number of small businesses, the most fun of which is a microbrewery in Chicago.

I enjoy businesses where I can do more than write a check and get a report every couple of months; I want to help people grow and develop skills. They're small commitments but I like being able to play in a bunch of different areas. Over the years I've developed professional ADD and I need the variety.

ON STEVENS:

So six guys from my high school ended up going to Stevens, and I have a lot of memories there. I don't like clichés — I mean, I *really* don't like clichés — but it truly was work hard, play hard. Stevens was so much more demanding than my two years at Northwestern, so it really helped me learn what I could do personally and how to get the most out of stuff. The lessons I learned at Stevens are lessons I keep to this day. ❖ — *As told to Rebecca Markley*

“I enjoy businesses where I can do more than write a check and get a report every couple of months; I want to help people grow and develop skills.”



FOR WOMEN'S SOCCER TEAM, SUCCESS IS MORE THAN WINNING

For the Stevens women's soccer team, soccer is the easy part of being a national power on the field and a formidable force in the classroom.

When it comes to the team's priorities, soccer actually falls lower on the spectrum than most people may think.

"Our main goal is to make Stevens the best place to play soccer, and we measure ourselves by that statement in our day-to-day tasks and choices," says longtime head coach Jeff Parker. "Our team takes academics very seriously, and any potential student-athlete quickly hears about our priorities of family, school and soccer, in that order."

That mindset has paid off for the Ducks on the field, where they've won 37 games over the past two seasons, capturing back-to-back Empire 8 Conference championships and winning three games in the NCAA Tournament. In fall 2016, the team achieved an extraordinary 19-2 record and was ranked as high as No. 2 in the country, its highest ranking yet. The Ducks went on to reach the second round of the NCAA Tournament last fall; injuries presented an obstacle to advancing in the tournament.

But the number of wins is only a small part of what's made the program — first started at the university in 1992 — one of Stevens' most successful.

Indeed, the Ducks have shined in the classroom as much as they have on the field under Parker, capturing the National Soccer Coaches Association of America (NSCAA) team academic award every season since 2002 for achieving an overall team GPA of at least 3.0. This past fall, players earned their highest overall GPA ever, at 3.69, with 14 players named to the prestigious President's List for having a GPA of at least 3.75.

While academics and athletics form crucial pillars, it's the culture of the program that makes it truly special, players say.

Raba Nassif '17, a quantitative finance ma-



Stevens women's soccer coach Jeff Parker speaks with his team.

yor from Northvale, New Jersey, is, indeed, one of the top women's soccer players in Stevens history. She is the first Stevens women's soccer player to be named First Team All-American (by D3soccer.com).

When asked what has made the team special, she cites the people, not the wins.

"It's a combination of everything," she says. "It's a great coaching staff. You can go to them for basically everything. We have people who are willing to listen and willing to sacrifice."

For Carly Bean '17 — a Tau Beta Pi member from Williamson, New York, who earned a bachelor's degree in electrical engineering and a master's degree in computer science this May — the past two years have been so successful because everyone shared a vision of the team that they wanted to be.

"When you have a group of people who are willing to do hard things not just for themselves but for each other, that is when you start to get closer to reaching your potential," she says. "And reaching our potential as a group has been one of our most prominent goals."

Parker, who joined Stevens in 2000, is also a major factor in the team's success over the years, his players say.

"He puts his heart into it," Nassif says. "Most importantly, he cares about us, and you can see how he coaches."

Looking back on four years of soccer, Nassif says that the experience has helped her learn to become a leader, to further develop her work ethic, to never give up. And she's gained friends for life.

"I've learned so much more about being a good teammate, a good friend, and a good human being," Bean adds.

The Stevens women's soccer experience has also taught them to look beyond their own world.

In 2013, the team traveled to Paraguay over spring break to help build a school and, of course, play soccer with the local kids. The team plans a similar service trip abroad for spring 2018, with the details still being arranged. For more information, please email Parker at Jeff.Parker@stevens.edu. ❖

— Beth Kissinger and Danny Vohden

Second Act

Retired ADP CEO forges extraordinary life as philanthropist and humanitarian

Meeting Josh S. Weston Hon. D.Eng. '96 for the first time, what becomes quickly apparent is his vitality. Although he has been in retirement for nearly 20 years, Weston, at 88, manages a very full life, one that is filled with purpose and intention.

Some of those plans involve supporting the country's next generation of engineers, scientists and technology leaders.

The retired CEO and chairman of leading payroll and human resources firm Automatic Data Processing (ADP) was honored at this year's Stevens Awards Gala with the Friend of Stevens Award (*see page 28*). His three-decade support of the university includes serving as the lead donor of the Pinnacle Scholars Program, the honors program that attracts the best and brightest high school students to Stevens through financial support and special academic privileges, including opportunities to pursue advanced research and study abroad.

"I support Stevens for several reasons. Chief among them: It's very STEM-centric. The future prosperity of our country relies on Americans who can make big STEM differences, and the Pinnacle Scholars Program at Stevens is aimed at nurturing the most promising students. So I'm glad to help with that," said the self-described "STEM education nut."

The Montclair, New Jersey, resident is much sought after for his business counsel and industry expertise, and is frequently asked to speak at colleges and universities. Two years ago at Stevens, Weston delivered a campus lecture, ti-

tled "Lessons on Leadership They Don't Teach You in Class." He holds several honorary doctorate degrees, including one from Stevens. Weston currently serves as ADP's honorary chairman and continues to travel to his office in Roseland, New Jersey, three times a week.

When he stepped down as CEO in 1998, after more than three decades at ADP, he developed a second full-time career leading various non-profit boards, currently serving as chairman of Liberty Science Center and NJTV (a PBS member station) and providing philanthropic support to institutions in the arts and education, such as the New Jersey Performing Arts Center, Boys Town Jerusalem and many other civic organizations.

He has also participated in humanitarian efforts around the world as an active board member of the International Rescue Committee (IRC), a preeminent non-profit organization that provides emergency relief, protection, resettlement services and advocacy for refugees. It is a cause that he has been particularly vocal about over the last year and a half, as the national debate continues to roil around the topic of U.S. immigration policy on refugees.

"Except for Native Americans, everybody here came from someplace else. And it's been great for this country, and I think people who are lucky enough to do well should give back," said Weston, a Brooklyn native and a first-generation American whose parents immigrated to the U.S. in 1920.

Welcome to America

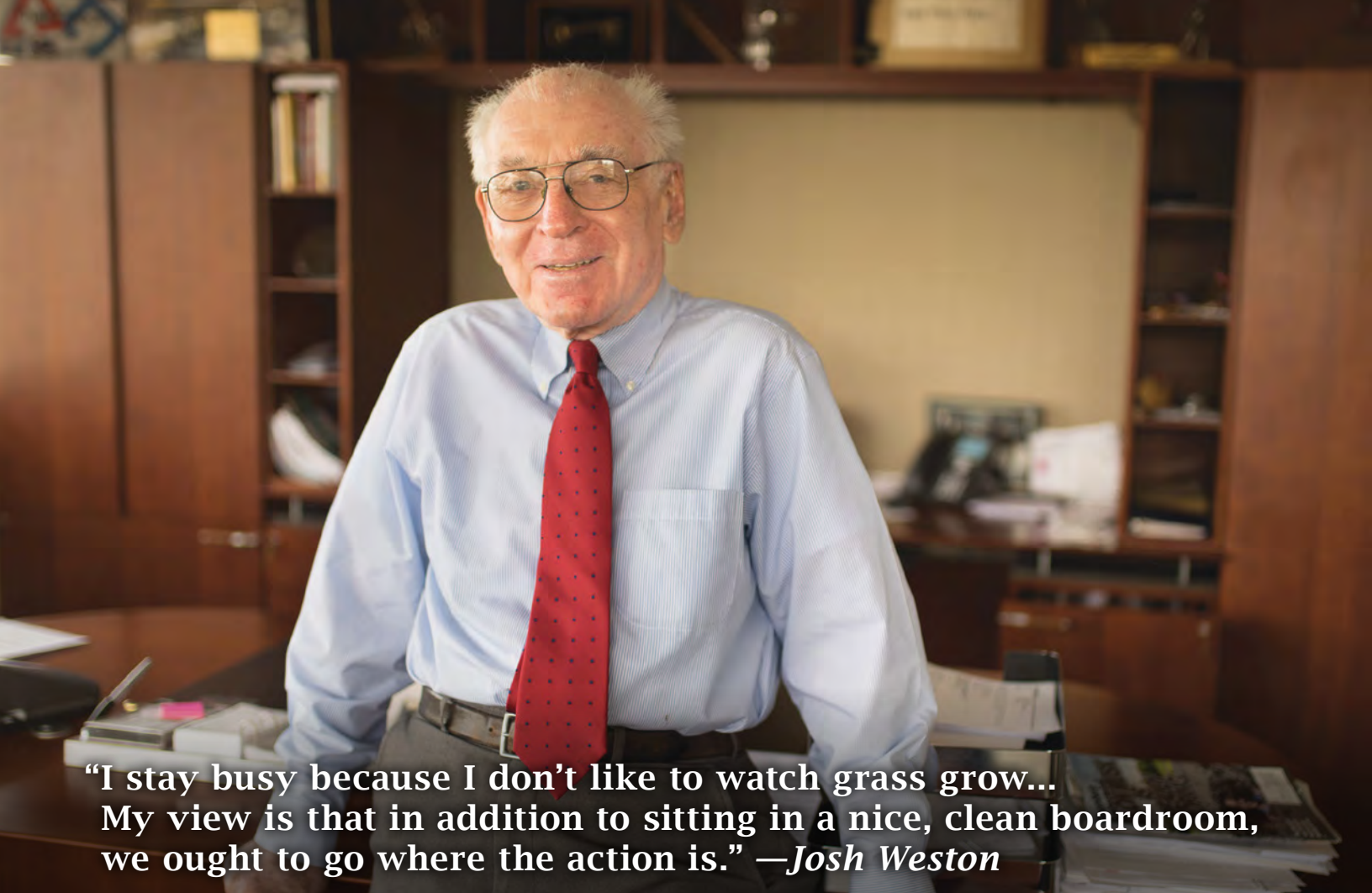
One of the many ways Weston has given back was by informally "adopting" some of the refugee families he met through his work with the IRC. One such family was Fazal Baidariwal M.S. '16, his wife and their three children. They had fled Afghanistan because of threats from the Taliban, which opposed the couple's advocacy of women's rights and girls' access to education in that country.

When Weston met the family in 2011, they had settled in Elizabeth, New Jersey, and Baidariwal, who was educated as a civil engineer, was working at Walmart as a sales associate for \$9 an hour.

"He wanted to get into construction management," said Weston, who knew precisely where he could get the necessary education to make that dream come true.

With Weston's help, Baidariwal enrolled in the master's program in construction management at Stevens.

After receiving his master's degree in construction man-



“I stay busy because I don’t like to watch grass grow... My view is that in addition to sitting in a nice, clean boardroom, we ought to go where the action is.” —Josh Weston

PHOTO: JOHN O’BOYLE

agement last year, as well as a graduate certificate in construction and quality management, Baidariwal began a position as an engineer with Turner Construction Company, one of the largest construction management companies in the U.S.

Whether through financial support to help with education costs or assistance in finding a job, it would be difficult to overstate the impact of Weston’s involvement with the family’s new life in America.

“They bought a house, which I’m going to see when I visit them,” shared Weston, who is often invited to dinner at the homes of the refugee families he has helped.

As a gesture of welcome from America, Weston encouraged 220 of his friends to write a check of \$50 or more to the couple. Their responses totaled approximately \$15,000 for the family.

It would have been impossible to navigate their life in this country, and around its culture and customs, without Weston’s guidance and assistance, said Baidariwal.

“When I was introduced to Josh Weston, my life changed. My wife and I were able to reach our goals through our education. People like Josh and [President] Nariman Farvardin

of Stevens — they lead us and provide us with opportunity. Now, we are self-sufficient. We don’t need government support, and we pay taxes.”

A Hand Up, Not a Hand Out

Asked why he chooses to become so personally involved in the lives of families such as the Baidariwals, Weston says that it’s just not in him to limit his activity to the boardroom.

“I stay busy because I don’t like to watch grass grow. I’m on the board of the IRC, and we talk at meetings, which boards are supposed to do. But my view is that in addition to sitting in a nice, clean boardroom, we ought to go where the action is. So I’ve gone to refugee camps in countries like Lebanon and Jordan, but I also wanted to meet the people who come here to the U.S.,” he explained.

In addition, Weston says helping people is deeply rewarding and takes so little effort on his part.

“Sometimes an assist from a little American ‘pinky’ can change something that a refugee’s hand can’t move. It’s so easy, but to them, my goodness — look at what can happen,” he said proudly. ❖ —*Young Soo Yang*

▲ Josh Weston, in his office at Automatic Data Processing in Roseland, New Jersey.

Participation with Purpose: Alumni Gifts Of Any Amount Make A Big Difference

When it comes to his alma mater, Chuck Filippone '57 is driven by friendship, and by gratitude.

Each spring and fall, he faithfully attends the Stevens Old Guard Luncheon to catch up with his classmates. He serves as their class secretary and has helped plan their class reunions. And he gives to Stevens, because he remembers the scholarship that helped him after his father lost his job and money was tight.

"It was so critical to my completion of my education — I'm just delighted to be in a position to return the favor," Filippone says. "And I'm glad to help with (Stevens') reputation. It's one of the finest schools in the world."

Filippone is one of the many alumni who give to Stevens every year, elevating

its national profile and providing it with the resources to inspire student success, promote faculty excellence and create a truly vibrant campus.

Every undergraduate alumni gift counts as "giving participation," the term publications such as *U.S. News & World Report* use to measure the connection alumni feel to their alma mater and satisfaction with their degree and subsequent career. Indeed, *U.S. News* factors participation rates in its annual national college rankings, as they account for 5 percent of a university's overall score.

"The impact of giving participation can't be underestimated," said Melissa Fuest, assistant vice president for alumni engagement and annual giving and executive director of the Stevens Alumni Association. "The greater the number of alumni who make annual gifts, the stronger position Stevens holds among its peers and universities across the nation. Our alumni participation rate is a direct reflection of the pride alumni have for their alma mater, and is a significant signal for prospective students when selecting their future university."

Many in the Stevens community have been working hard to boost giving participation, and their efforts are paying off, as the percentage of alumni giving to Stevens has jumped from this time last year.

Currently, every gift to Stevens counts toward *The Power of Stevens*, the most ambitious fundraising campaign in university history, with a goal of raising \$150 million between 2013 and 2018. Much of



"I encourage fellow alumni who have been positively influenced in any way by their experience at Stevens to give back to the community." — *Chris Ciabattone '11 M.S. '17*

that money will go toward projects such as building the planned Gianforte Academic Center and renovating the Lore-El Center for Women's Leadership and other buildings (see cover story starting on page 12); supporting student scholarships and academic programs such as the Pinnacle Scholars Program; and recruiting and retaining stellar faculty through endowed chairs and other resources.

Then there are the "micro" campaigns within campaigns, such as the Voice of Stevens that ran over five days in October 2016 and raised \$50,728 from 1,191 donors (plus a \$500,000 matching gift from an anonymous donor who set a goal of 870 gifts). During this "micro" campaign, alumni could share their reasons for supporting



"Help us to build and spread Stevens' reputation globally. We're all in this together." — *Chuck Filippone '57*

Stevens and unlock badges celebrating the university's history. Chris Ciabattone '11 M.S. '17 donated to the Voice of Stevens and encouraged his fellow alumni to do the same.

"All of the doors opened for me have been opportunities that alumni presented," said Ciabattone, a Delta Tau Delta fraternity brother and scholarship recipient who now works as a systems engineer for Dell. "I encourage fellow alumni who have been positively influenced in any way by their experience at Stevens to give back to the community."

No matter the amount, annual gifts from alumni support their alma mater's future success, and they are one way to remain active in the community. On a personal level, the campaign also revitalizes the pride alumni have for their alma mater.

"I encourage all alumni to give something," said Joe DiPompeo '98 M.Eng. '99, president of the Stevens Alumni Association, "but I especially encourage alumni like me — mid-career, raising a young



"I think what recent grads don't realize is, they do not need to make a huge contribution. Even if they give as much as a cup of coffee, they'll still make a big difference in a small way."
— *Emily Brandsdorfer '14*

family, having a lot of other time and money obligations — to think about participation and how vital it is to the success of the university. Any gift will have a tremendous impact, regardless of size."

Donating to Stevens to boost its giving participation especially provides younger alumni with a way to immediately get involved with the alumni community as soon as they graduate.

"Recent grads are still thinking about what they just paid for tuition or loans, and they're maybe reluctant to give back so soon, even if they want to," said Emily Brandsdorfer '14, a three-year Gear Society member. "I think what recent grads don't realize is, they do not need to make a huge contribution. Even if they give as much as a cup of coffee, they'll still make a big difference in a small way, and most alumni are happy to allow the next generation of Stevens the same opportunities they received."

Alumni of all generations have a role to play in Stevens' success.

"Help us to build and spread Stevens' reputation globally," Filippone says. "We're all in this together." ♦ — *Alan Skontra*

CAMPAIGN PROGRESS

\$109.3 Million Raised as of April 30, 2017

December 2018 Goal is \$150M

CHOOSING TO GIVE

Alumni can give to Stevens — and boost its giving participation rate — in a variety of ways. Here are a couple:

▶ **Annual Class and Greek Challenges.** Every year, the Stevens Alumni Association recognizes the classes and Greek groups with the highest participation rates. The top three winners receive \$2,500, \$1,000 or \$500 toward their scholarship fund and get their name engraved on a large trophy. In 2016, Theta Xi fraternity and the Class of 1963 each won first place. This year, as of March 1,

2017, Phi Sigma Sigma sorority (20.13 percent) led the Greek Challenge ahead of Delta Tau Delta fraternity (15.64 percent), and the Class of 1963 was defending its title with 29.9 percent, staving off the Class of 1958 at 24.7 percent.

▶ **The Gear Society.** Donors who participate every year now have their own giving society. The new Gear Society celebrates annual, consistent donors, giving them special recognition throughout the year and thank-you gifts for five-year increments. Currently, 300 alumni are running Gear Society streaks of 25-plus years of annual giving. — *Alan Skontra*



Learn more about making a gift, and other ways to participate in the Stevens community, by visiting power.stevens.edu

THE BIG SCREEN



Dr. Negar Tavassolian

STEVENS RESEARCHER PROPOSES NOVEL WAY TO SPOT SKIN CANCERS USING MILLIMETER-WAVE TECHNOLOGY

A newly emerging technology holds promise for imaging and diagnosing skin-cancer tissues earlier and more accurately than ever — and Stevens Institute of Technology is at the forefront.

“Skin cancer is the most common and fastest-growing of all cancer types, with approximately 3.5 million new cases and billions of dollars of treatment cost in the U.S. occurring annually,” explains Stevens electrical and computer engineering professor Negar Tavassolian. “It is usually diagnosed through visual inspection by a dermatologist, but visual inspection is subjective and can be susceptible to error.”

Tavassolian, who trained at Sharif University of Technology in Iran, McGill University in Canada and Georgia Tech in the U.S. — then performed postdoctoral work at Massachusetts Institute of Technology — says new imaging technologies can help doctors improve the odds of early detection. She is the recipient of a recent \$500,000 National Science Foundation (NSF) CAREER award to develop just such an innovative medical application of millimeter-wave technology. The prestigious award is given to promising young tenure-track researchers for five-year research projects.

“Early detection of skin cancers is critical, and millimeter-wave technologies and devices have now evolved to the point where low-cost, in-depth views of skin are on the horizon,” she notes. “Most of the problems, such as safety and power supply, have been solved.

“Now we propose to solve a key remaining challenge: high, useful resolution of the images.”

ACHIEVING ULTRA-WIDE BANDWIDTHS BY SPLITTING CHANNELS

Microwave-band imaging technology (in other words, frequency 1 GHz to 30 GHz) is currently used to diagnose breast cancer, lung cancer, stroke and other diseases. Millimeter-wave technology (which has a higher frequency of 30 GHz to 300 GHz), however, is relatively new and under-deployed — largely confined to military and security applications such as body-scanning in airports and a few industrial uses. The radars that aid automobile collision avoidance and automatic braking systems each utilize millimeter waves, for example.

The technology has been slow to catch on in the medical field.

“Millimeter waves can’t penetrate deeply into the body, so they can’t be used for certain medical purposes, such as imaging internal organs,” explains Tavassolian.

But because millimeter-wave imaging is cheaper, safer, less power-intensive and much more portable than other types of body imaging, it is attracting increased focus as researchers study other potential applications where superficial imaging is the primary goal.

Tavassolian’s innovation takes the technology to a new, more powerful level. By splitting the bandwidth of a millimeter-wave imaging system into several sub-bands (or channels), then using dedicated sub-band antennas for each channel and recombining the antenna signals back into a signal that approximates the full bandwidth, higher-resolution medical images can be created for proactive diagnostic purposes.

“This has not been done before, to our knowledge, in medical imaging,” she notes.

During the first stages of their research, Tavassolian and graduate assistant Amir Mirbeik are testing a di-electric probe inserted into skin tissue to determine how accurately it detects contrasts and electrical differences that can help differentiate between healthy and tumorous skin.

“Because forming tumors contain higher water content than healthy skin, this contrast should be viewable on a millimeter-wave-created image,” Tavassolian says.

Her team is also designing specially configured sub-band antennas, each micro-fabricated in Stevens’ own clean room and each uniquely tuned to the unique bandwidth at which it will operate. These antennas will transmit signals and record backscattered responses during the experimental imaging process.

Next, Tavassolian will begin receiving excised skin samples — of normal, healthy skin and also of confirmed tumors — several times weekly from Massachusetts General Hospital in Boston and Hackensack University Medical Center in New Jersey. Those samples will be transported to Stevens frozen, imaged over a period of a few hours each, then compared against each other.

A LOW-COST, PORTABLE IMAGING SYSTEM FOR MEDICAL CENTERS

If the system proves the concept is viable, Tavassolian and her team will then begin developing hardware and software prototypes for a portable, low-cost imaging system that can be deployed in medical centers. Tavassolian will also create a public display on the project for New Jersey’s largest interactive science museum, Liberty Science Center in Jersey City, at a future date, and develop new Stevens curriculum offerings in the biomedical applications of electromagnetics.

“It’s all about greater impact,” she says of her decision to focus on medical applications during her career as an electrical engineer. “I have always gravitated toward medical problems.”

In addition to her NSF-supported work on imaging, Tavassolian performs additional Stevens research on radio frequency and microwave technologies, bio-electromagnetics and micro-electromechanical systems with biomedical applications, including a project to develop a heart-rate and blood-pressure monitoring system utilizing acoustic signals, radar and accelerometer data. ❖ — Paul Karr

Was That Online Review REAL^{OR} FAKE?

STEVENS TEAM QUANTIFIES EASE OF TRICKING ONLINE RANKINGS WEBSITES

Amazon, TripAdvisor, Yelp: These and other consumer services depend upon accurate, crowd-sourced content to guide users.

But what if those posted reviews aren’t all truthful? Can fake, planted positive reviews — or negative reviews fraudulently posted in competitors’ entries — change rankings and influence consumers’ choices?

“Yes, unfortunately,” says School of Business professor Ted Lappas, who has just completed a sweeping survey of online review sites in research published in the journal *Information Systems Research*.

“It is surprisingly easy to intentionally push a business up in review-site rankings using fake reviews.”

Researchers estimate 15 to 30 percent of all online reviews may be falsified and planted for positive or negative purposes. Lappas, who has been following research in fake online review content for a decade, set out to discover whether these efforts make any difference — and, if so, how to combat them.

“We are not talking about simply a semantic discussion any longer,” he points out. “Studies have proven this effect goes far beyond that: It is now economic fraud, making a difference in the life and death of real businesses.”

To analyze the phenomenon, Lappas, Stevens graduate student Georgios Valkanas and associate faculty member Gaurav Sabnis studied roughly 2.3 million online reviews of nearly 5,000 hotels in 17 U.S. cities. The team was surprised by how little effort is required to trick the rankings services.

“Just 50 or so additional positive reviews planted on a site are sometimes enough, we found, to tip the scales and drive a particular property to the No. 1 ranking in its market,” Lappas notes.

And it takes even fewer fake reviews — perhaps as few as ten or 20 — to push a business into, say, the top five in its category if that business is also simultaneously “spamming” its main competitors with fake negative reviews.

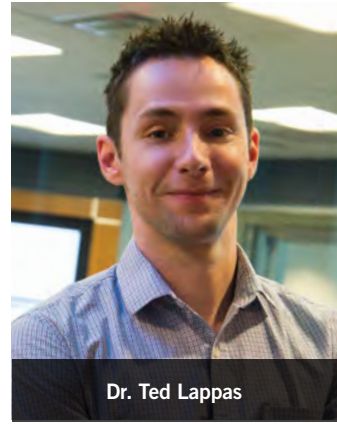
The most effective fraud strategy of all, Lappas’ team found, was a mixed strategy — a business planting fake positive content while also seeding higher-ranked competitors’ entries with made-up negative reviews.

“It’s very inexpensive these days to simply pay a service or writer to create these fake reviews and flood the sites with them,” Lappas points out. “And there’s usually little penalty for doing so. All you have to do is post fake negative reviews for strategically selected competitors, while injecting positive reviews for your own business.”

“Using this strategy, you can make a big difference with a surprisingly small number of reviews.”

In their research paper, the team suggests some effective fraud-detection strategies for operators of review websites, including avoiding an overemphasis on new reviews — a common practice in the industry.

“There are several ways operators can attack the problem,” Lappas notes. “One is to create a ‘buffer zone’ of weeks or months before brand-new reviews appear online, so that algorithms and human monitors have the time to determine whether they are likely truthful or not. Our simulations provide strong evidence that this would be effective.” ❖ — Paul Karr



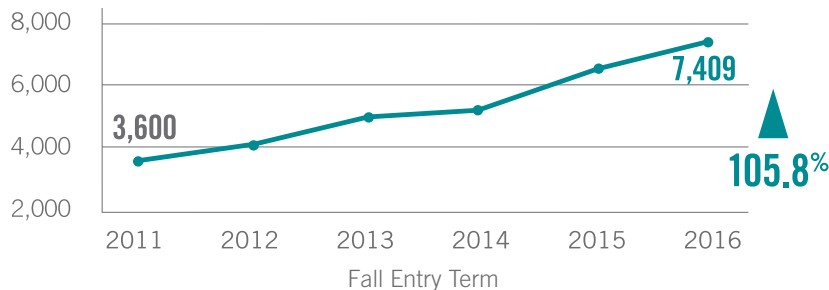
Dr. Ted Lappas

Charting a University's Rise

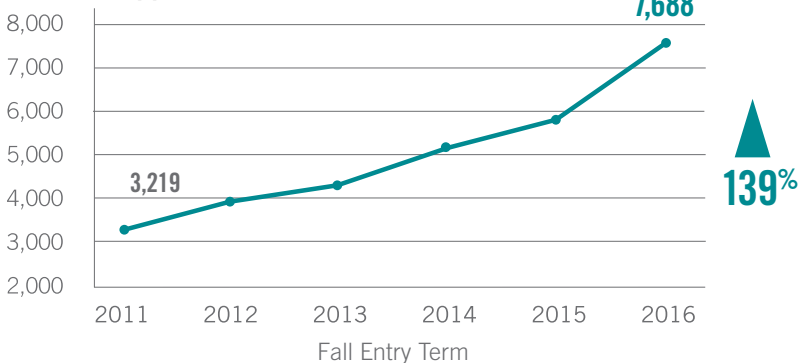
STEVENS' FIVE-YEAR PROGRESS REPORT SHOWS GROWING SUCCESS

Undergraduate / Graduate Applications

Undergraduate Applications, Five-Year Growth Trend



Graduate Applications, Five-Year Growth Trend



Undergraduate Admissions Selectivity



As Dr. Nariman Farvardin marks his sixth year as the university's president this July, the story of today's Stevens is one of unprecedented growth, accelerating success and optimism.

Mostly, the numbers over the past five years tell the story: skyrocketing increases in student applications and increased undergraduate and graduate enrollment; a concurrent improvement in admissions selectivity; a jump in the six-year graduation and first-year retention rates; a 96 percent placement rate for the Class of 2016 six months after graduation; an increase in research awards and growth of the faculty; top national rankings for career placement, alumni earnings, return on investment and mid-career salaries of graduates; a dramatic rise in the *U.S. News & World Report* college and university rankings; an increasingly positive financial outlook (see story on Stevens' two credit rating boosts on page 7). And this is just some of the good news.

The university also opened the new Stevens Venture Center to nurture student and faculty entrepreneurs and launched the largest fundraising campaign in its history, among other accomplishments. All of these successes are deeply rooted in one of the first actions that Farvardin and the Stevens community took together — developing the university's 10-year strategic plan that charted a course for Stevens' future with re-envisioned objectives, clear metrics and regular reporting of progress.

"A University on the Rise: A Five-Year Progress Report, 2011-2016" specifically details the measurable progress over this short but critical period of time. To read the report and to see Farvardin's recent interview with *The Chronicle of Higher Education*, please visit stevens.edu/progress. ♦





Stevens President Nariman Farvardin teaches a seminar course on leadership to students who are part of the university's Pinnacle Scholars Program.

PHOTO: MICHAEL MARMORA

Student Outcomes – Class of 2016

96% Secured in intended fields within six months of graduation

100% of humanities and arts and
100% of business students secured outcomes within six months of graduation

Average Starting Salary – Class of 2016

\$67,100



To read the five-year progress report, please visit stevens.edu/progress

Rankings and Recognition

A Top College for Launching Careers

Named in the 2017 Edition of
“Colleges That Create Futures”

The Princeton Review

#10 For Return on Investment
2017 College ROI Report

PayScale

#5 For Earnings
“Among 13 U.S. colleges where students go on to earn the most money”

CNBC, 2016

Top for Women in STEM

Named by *MarketWatch* as one of the top schools where
Female STEM Students flourish, 2016



VITALS

MARRIAGES

Kevin Crowley '07 to Yetunde Adelekan on Oct. 29, 2016.

Casey Scherck '09 to Derek Faucher on Jan. 14, 2017.

BIRTHS

To Cindy (Chin) Levine '05 and Joshua Levine '05, a daughter, Charlotte Harper, in July 2016.

To Carol and Jack Cheung '09, a daughter, Evangeline Harper, on Dec. 4, 2016.

To Megan '08 and Bruce Jordan, a son, Patrick Bruce, on Dec. 28, 2016.

OBITUARIES

- S.F. Guggenheim '39 3/18/17
- F.H. Weber '42 3/15/16
- H. Brunton '43 7/7/16
- H.M. Appleton '44 1/15/17
- J.H. Winer '44 3/6/17

- W.C. Graulich, Jr. '48 10/28/16
- R.R. Klein '49 11/23/16
- A.J. Butler '51 3/3/17
- E.J. Eckel '51 11/15/16
- R.K. Moessner '51 11/1/16
- R.A. Nolan '51 3/27/16
- R.R. Ritti '51 5/21/16
- R.W. Fisher '52 11/18/16
- J.E. Schmidt '55 12/29/16
- T.R. Uldal '57 8/22/16
- A. Olsen '58 Unknown
- T.J. Faith '59 10/5/16
- J.A. Motusesky '60 11/17/16
- C.Caputo '62 12/17/16
- J.R. Guerriero '62 5/9/16
- T.A. Peck '62 1/24/17
- B.M. Marder '64 1/10/17
- B.E. Slaski '65 12/8/16
- G.J. Fitzgerald '71 1/9/15
- H.R. Greenberg '74 2/1/17
- The Rev. J.E. Buzzerio '72 3/16/17

- D. Cozart Bloking '80 1/27/17
- H.S. Forstrom '83 9/10/16
- A.P. Puntasecca '85 11/14/15
- S.D. Woods '97 1/5/13
- C.A. Farmer '99 1/26/17
- M.A. Dappolone '00 12/3/16
- G.L. Hodgson '09 9/16

GRADUATE

- F.J. Ceely M.S. '49 4/22/16
- R.E. Bryden M.S. '61 7/20/13
- F.E. Morris M.Eng. '71 8/31/16
- W.J. Engle M.M.S. '72 9/7/16
- W.D. Rezak M.Eng. '76 1/14/17
- J.A. Nagy M.M.S. '79 4/1/16
- A.W. Reid M.S. '00 6/2/16

FACULTY/STAFF

- R.H. Seavy M.S. '48 1/4/17
- J. Lyon 4/11/17

CREATE YOUR *Legacy*

“It is my intention that the institution hereby directed and created shall be perpetual.”

Edwin A. Stevens
April 15, 1867



Join the Stevens Legacy Society

We invite you to join the Stevens Legacy Society if you have made a commitment to support the University through a gift in your will or other planned gift.

Benefits of membership include:

- Inscribed certificate
- Stevens Legacy Society keepsake
- Special mention in Stevens publications
- Invitations to special events

Find out more and/or let us know if you have provided for Stevens in your estate plan:

stevens.giftplans.org/Join

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Request our free booklet,

A Guide to Planning Your Will in 2017:

What You Need to Do Before You See Your Attorney.

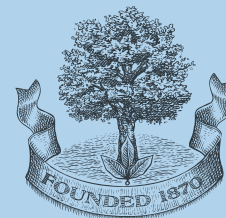
Receive the booklet by mail by calling **201-216-8967**

or email: michael.governor@stevens.edu.



About the Stevens Legacy Society

The Stevens Legacy Society honors alumni and friends who, like Martha and Edwin



Stevens, have included

Stevens in their financial or estate plan.

Because the Institute's establishment was predicated on a groundbreaking bequest from Edwin A. Stevens and shepherded by Martha Bayard Stevens, we celebrate the original foresight and transcending support of the Stevens family through membership in the Society.

stevens.giftplans.org/Will



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"The new lab is Stevens' response to the digitization of the workplace and the democratization of data analysis. Just like an engineer needs a design lab, a data scientist needs the tools and technologies available in the Hanlon labs."
—DAKOTA WIXOM '17

Stevens students benefit from state-of-the-art facilities and evolving technologies.

Stevens teaches business students to collaborate, interpret and evaluate complex data in real time with speed, accuracy and heightened confidence. Dakota Wixom '17 received multiple job offers in tech and finance, thanks in part to the data visualization and technology skills he cultivated at Stevens. Our Hanlon Laboratory for Financial Analytics and Data Visualization puts the technology driving next-generation decision-making in students' hands.

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