



THE STEVENS INDICATOR

SUMMER / FALL 2016 ♦ THE MAGAZINE OF THE STEVENS ALUMNI ASSOCIATION

GOOD FOR YOUR HEALTH

How Stevens is Advancing the
Science & Technology of Medicine

IN THIS ISSUE: WELCOMING THE NEW PROVOST | ALUMNI WEEKEND | VENTURE CENTER OPENS



SAVE the DATE

Stevens Awards *Gala*



Saturday, April 8, 2017

THE PLAZA HOTEL • FIFTH AVENUE AT CENTRAL PARK • NEW YORK, NY

Join us at the historic Plaza Hotel for the fourth Stevens Awards Gala, as we honor the remarkably accomplished alumni and friends of Stevens.

For further information and sponsorship opportunities:

stevens.edu/awardsgala



The Stevens Alumni Association received recent graduates at its Welcome Seniors Reception on May 13. From left are Lauren Mayer '12, Liz Knott '16 and Nicolette Pappas '16.

THE ALUMNI PORTAL

Visit the Alumni Portal, your one-stop shop for registering for events, updating your profile, viewing the Alumni Directory, checking out the Alumni Business Directory and posting and searching opportunities on the Alumni Job Board. Visit the Alumni Portal at: connect.stevens.edu/alumniportal.

THE ALUMNI OFFICE HAS MOVED

Over the summer, the Alumni Office staff moved to the 8th floor of the Howe Center (just one floor below where we were). Make sure to stop by to visit our new welcoming environment for alumni and the Stevens Alumni Association.

FALL 2016 ALUMNI ASSOCIATION MEETING DATES

- ◆ Monday, Sept. 12
- ◆ Monday, Nov. 14
- ◆ Monday, Dec. 12

All Alumni Association meetings begin at 5:30 p.m. in the Howe Center on the fourth floor in the Bissinger Room. These dates are subject to change. Please check the Stevens Alumni Association events website, accessible through the Alumni Portal (see above), to register.

SCHOLARSHIP SUPPORT

Each year, the Alumni Association provides the Stevens Alumni Association Legacy Term Scholarship to qualified students with legacy relations to Stevens. These students must be full-time undergraduate students who have either a parent or grandparent who received an undergraduate or graduate degree from Stevens. They must be in their sophomore, junior or senior year for four-year students, and/or in their second, third, fourth or fifth year for co-op students; be in good academic standing, as determined by Stevens, at the end of the previous academic year; and have a proven record of commitment to and participation in the Stevens community, with a leadership position preferred. More than 140 students have benefited from the generosity of the Association and the many individual donors who have made this scholarship possible. Help us continue this tradition by making a gift to our scholarship. Please visit connect.stevens.edu/makeagift/scholarships today! The Stevens community thanks you for your generous support. To learn more about the scholarship, email alumni@stevens.edu.

CELEBRATE THE HOLIDAYS WITH STEVENS

Save the date for the annual Stevens Alumni Association Holiday Party — Saturday, Dec. 10, 2016 — on Castle Point. Also, keep an eye out for additional SAA holiday parties taking place in your area. Regional clubs are actively planning holiday events in Southern California, Northern California, Boston, Princeton, Houston and Washington, DC. If you would like to plan a holiday celebration in your area, please contact the Alumni Office at 201-216-5163 or alumni@stevens.edu.

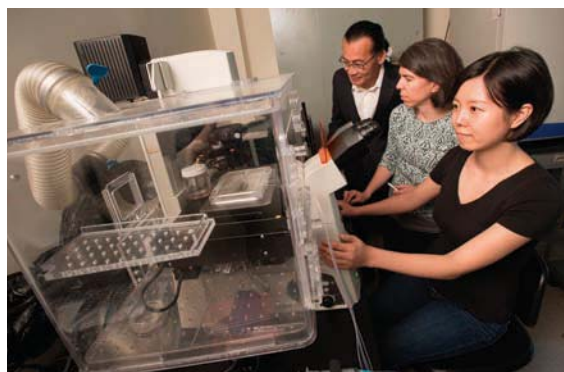
To make sure that you receive all the details about holiday events and other activities, please update your contact information by using the Alumni Portal or by contacting the Alumni Office.

THE STEVENS INDICATOR

THE MAGAZINE OF THE
STEVENS ALUMNI ASSOCIATION
SUMMER/FALL 2016

DEPARTMENTS

1SAA Update
4-5Presidents' Corner
6-9Grist from the Mill
35Grad Log
42Clubs
43Sports Update
44Calendar
45Vitals



Stevens is teaming up with Hackensack University Medical Center researchers to address cancer and other medical challenges – just part of Stevens' growing healthcare research initiative. Read more starting on page 14.

Photo: Jeff Vock

FEATURES

10-11 Bell Labs' Work Of Art

The research giant teams with Stevens to interweave arts and science.

12-13 Idea Incubator

The Stevens Venture Center provides resources and opportunities for entrepreneurial students and recent grads.

14-22 Here's To Your Health

Through faculty and student research, Stevens uses science and technology to solve healthcare challenges.

23 Presenting The New Provost

Dr. Christophe Pierre joins the administration, serving as provost and vice president for academic affairs.

24-25 Red And Gray Days

Hundreds return to Castle Point for the annual Alumni Weekend.

26-27 50 Years Ago A Freshman

Father Gabriel Costa '70 M.S. '72 Ph.D. '84 reflects on the centennial class' four years at Castle Point.

28-29 A Frequent 'First'

A leader in the Maryland life sciences community, Martha Connolly '75 has often led the way through unknown territory.

30 Relishing Research

Suzanne D'Addio '07 embraces her love of science, even in her free time.

31 Lessons Learned

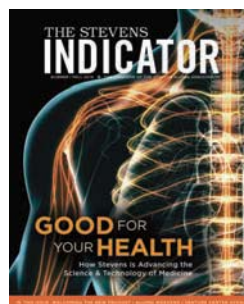
LeTisha Shaw '99 tells her story through the advice she'd give her younger self.



FEATURES



ON THE COVER



Stevens' growing healthcare initiative is expanding research and education into exciting and important new areas.

COVER DESIGN: SPARK DESIGN

SOCIAL MEDIA

Every gift to Stevens makes a difference, so tell us why you give by submitting your photo and story to connect.stevens.edu/mystevensstories.



"The exceptional technical education that Stevens has provided for decades is finally gaining well-deserved national attention due to the accomplishments of its alumni. As Stevens' reputation supports each of us in our careers, I'm drawn to reconnect with Stevens to build on this momentum and help strengthen the Stevens network across a diversity of industries, academic fields and geographies." —Suzanne D'Addio '07

We will share your submissions on our website and social media channels throughout the year. We look forward to hearing from you! #MyStevensStories



32-33 A Call To Serve

Peace Corps volunteer Drew Capone '13 says his time teaching chemistry in Africa has opened his eyes to the world.

34-35 Hollywood On His Terms

Unrestrained by the status quo, Sam Ghosh '06 navigates a busy life in Los Angeles.

36-37 A Commitment Worth Celebrating

Trustee Frank Semcer '65 continues his legacy of generosity with a gift to *The Power of Stevens*.

38-39 Welcome The New Alumni

Thousands gathered to celebrate the graduate and undergraduate commencement ceremonies.

40-41 Join The Club

Five club spotlights to show that there's always a way to stay connected to your alma mater.

SUMMER/FALL 2016 VOL. 137, NO. 3

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STEVENS
ALUMNI ASSOCIATION
PER ASPERA AD ASTRA

PRESIDENTS' CORNER

EMBRACING CHANGE AS WE WELCOME A NEW SCHOOL YEAR

It is with great pride that I welcome the Class of 2020 to campus this fall. When this class graduates, it will mark the 150th anniversary of our wonderful alma mater. Please join me in welcoming these men and women into the Stevens community. I look forward to identifying new and positive ways for the alumni community to help these students on their journey.

Over the past year, the Stevens Alumni Association has undertaken a number of key initiatives aimed at helping us to achieve our mission of “establishing, maintaining, and cultivating among our members a sentiment of regard for one another and of attachment to Stevens Institute of Technology, and to promote in every way the interests of the institute.” Chief among these is the task of reviewing and making recommendations for potential updates to the SAA Constitution, a document with its origins dating back to 1906. The thoughtful deliberation and diligent effort of the volunteers in undertaking this effort have been truly fantastic. I thank the many individuals who participated on this committee for their dedication and commitment to helping propel the association into the 21st century. Our work is not done yet, however. Over the course of this next year, we will continue this important effort with the goal of having a completed draft to share with the alumni body for discussion by June.

Another new transformation that has taken place is the move of the Alumni Office staff from their former home on the 9th floor of the Howe Center to the 8th floor. The new space into which they have moved has been completely redone and outfitted with many modern office amenities and technology that will allow us to have broader participation from our alumni. These exciting new features include, but are not limited to, smart boards, video conferencing capabilities and plenty of updated file storage for the SAA's historic and important documents. A second important part of this change is that the Alumni Office and the Office of Development now share the same space. This provides for increased collaboration among the professional staff, which allows for improved communications, streamlined event production and better integration across all volunteer efforts. When you are on campus, please stop by to tour the new home of the Alumni Office.



Finally, I would be remiss if I did not remark on the tremendous success we have seen so far in Stevens' campaign, *The Power of Stevens. Our Campaign. Our Impact*. With the public launch only a few months ago on May 7, Stevens has secured close to \$95 million toward the goal of \$150 million. Gifts of all sizes have been given to support student success, faculty excellence and enhancing our vibrant campus. In fact, since the start of the campaign, 76 new scholarships have been created. This news is truly extraordinary, as it will ensure a bright future for Stevens and generations of students to come. The best part is that every one of us can play a role. Our participation, on an annual basis and at any level, will continue to help strengthen and

increase the amount of scholarship aid that is awarded every year. By supporting Stevens annually, we alumni will help our university remain competitive and attract the best and most dedicated students. Please join me this year by supporting one of the many scholarship opportunities available, whether it is your class' scholarship, the Stevens Alumni Association Legacy Term Scholarship or another fund for which you have a particular passion.

I am excited to begin another year serving as your president. We have a number of new programs on the horizon to keep you engaged with the Stevens community. Please do your part by joining us at one of the many events offered around the country, visiting the campus when you are in the area, reading the latest news and announcements shared and making your annual gift. The more of us who actively participate, the stronger the network will be. ❖

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
saapresident@stevens.edu

INNOVATION AND ENTREPRENEURSHIP NOW THRIVING AT CASTLE POINT

The modern, technology-based university plays a significant role as an engine of economic growth. Research and development, partnerships with industry, commercialization of intellectual property and facilitation of entrepreneurial activity by faculty and students are direct efforts by today's technology-focused universities to spur technological innovation, an essential component of continued economic progress.

The landmark 2005 report of the National Academies, *Rising Above the Gathering Storm*, cites statistics attributing approximately 85 percent of economic growth per capita to technological innovation, largely the product of technology-focused R&D. A 2012 study by a Harvard University researcher analyzed the impact of universities on economic growth. It found that long-term employment and per capita payroll rose more rapidly in industries related to universities' core innovative strengths. The study also found that new ventures, created through university-generated intellectual property, along with new divisions of existing companies, comprised the majority of this growth.

Technological innovation and entrepreneurship are thriving at Stevens. A few examples, including those in the healthcare industry, are highlighted in this issue of *The Stevens Indicator*, from the research and development of new materials, devices and treatments for a range of patient conditions to opportunities to leverage big data to improve healthcare, and many more.

Our partnerships with industry are another essential ingredient for technological innovation. Through these collaborations, companies gain access to faculty expertise, cutting-edge research facilities and technical talent, and faculty can apply their research to real-world industry challenges. Through co-operative education, internships and corporate-sponsored senior design projects, students gain valuable industry experience and an advantage in the job market. Through corporate philanthropy, Stevens benefits from resources for faculty support, student scholarships and investment in instructional and research facilities. The result of these various industry partnerships is a mutually beneficial exchange of knowledge, technology, talent and resources that advances faculty research and the distinctive education we provide for our students, perpetuating a cycle of technological innovation.

This fall, for example, we will celebrate two significant collaborations with corporate partners: the location of our U.S. Department of Energy Solar Decathlon winning entry, the SU+RE House, to its permanent



home at the Liberty Science Center in Jersey City, New Jersey, made possible through significant corporate support and a leadership gift by PSEG; and the ribbon cutting of the ABS Engineering Center, made possible by a \$3 million gift from the American Bureau of Shipping. These corporate partnerships are making a substantial and tangible impact on the university, on the resources and facilities available to advance our faculty's research and on the distinctive education we will provide for our students for many years to come.

Stevens is also doing its part to create an environment to spawn new companies based on the work of our students and faculty. To bolster the curricular initiatives and incentives for students and faculty to be entrepreneurial,

Stevens launched the Stevens Venture Center earlier this year, with the goal of fostering, facilitating and accelerating the entrepreneurial activities of Stevens students and faculty. (A formal opening is planned this fall.) With programs and resources ranging from "Entrepreneurs-in-Residence," hackathons and start-up weekends, to 3D printing, legal and technical advice, mentoring and networking opportunities and more, the SVC is envisioned as a "one-stop shop" for Stevens entrepreneurs. Resident companies today include a medical device company, a company built around an innovative tool to facilitate patent searches and "smart" clothing that generates user data to improve personal health, among others.

In its 146-year history, Stevens has undoubtedly made tremendous contributions to economic growth through the leadership of our graduates in numerous industry sectors across the globe, through the successful companies launched by alumni and through innovations developed in our research labs, by senior design teams, and in partnership with industry. As technological innovation continues to flourish at Stevens and beyond, the next 146 years look even brighter, with promising implications for the future of the economy and, most definitely, for our graduates. ♦

Per aspera ad astra,

A handwritten signature in dark ink, appearing to read "N. Farvardin".

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GRIST FROM THE MILL

RESEARCH SHOWS WEARABLES ARE HACKABLE

A new Stevens research report reveals that wearable devices — Fitbits, Jawbones, Nike+, Apple Watches and the like — may leak information as you use them. Stevens researchers, including electrical and computer engineering professor Yingying Chen, discovered that the motion of your hand as you use PIN pads, which is continually and automatically recorded by your device, can be hacked in real time and used to guess your PIN number with more than 90 percent accuracy within a few attempts.



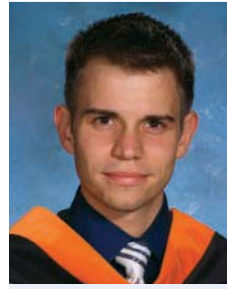
A paper on the research, *Friend or Foe? Your Wearable Devices Reveal Your Personal PIN*, received the Best Paper Award at the Association for Computing Machinery Conference on Information, Computer and Communications Security in Xian, China, in May. For the complete story, visit stevens.edu/smartwatch. ❖

STEVENS HOSTS NINTH ANIME CONVENTION

The Stevens Anime Club hosted its ninth Castle Point Anime Convention this spring with more than 4,000 attendees taking part in a variety of activities that celebrated Japanese animation and media. The two-day event featured celebrity panelists, including Bryce Papenbrook and Trina Nishimura; cosplay (as defined by Merriam-Webster: “the activity or practice of dressing up as a character from a work of fiction”) speed dating; a scavenger hunt; and several rooms dedicated to video and card games. The convention, which was started by Keith Cassidy '09 M.Eng. '09, is run almost entirely by undergraduate students, with some graduate and alumni support. ❖



HONORING HUMAN RIGHTS ADVOCATES



Shane Arlington '16 M.S. '16 and Ameer Halim '16, two graduating College of Arts and Letters seniors, each took home the Joseph M. Farber Memorial Prize for their dedi-

cation to promoting human rights while at Stevens, as well as for their future plans to continue acting on these commitments. Growing up in a family of lawyers, Arlington, who has bachelor's degrees in chemical engineering and science, technology and society, and a master's degree in materials science and engineering from Stevens, is currently pursuing a Ph.D. at Johns Hopkins University and hopes to become a professor of materials science, says he appreciates the rights granted to U.S. citizens and wants to share that with future students and colleagues. Halim, a Christian born in the Middle East who is currently specializing in global health at Albert Einstein College of Medicine, is a defender of Muslims who endure bigotry and blanket racism. “This award means a lot to me because it encourages me to keep fighting for civil and human rights both at home and around the world,” Halim says. The \$1,500 prize is named for attorney Joseph Farber, the late son of David Farber '56 M.S. '61 Hon. D.Eng. '99, who was instrumental in the landmark *Kitzmiller v. Dover* case, which defended the First Amendment's Establishment Clause. For the complete story, visit stevens.edu/farberprizewinners. ❖

▲ Shane Arlington '16 ▼ Ameer Halim '16



STEVENS VIRTUAL REALITY TAKES OVER PROPELLER

More than 1,300 attendees at Propeller, Hoboken's first technology and music festival held at Pier A Park on May 20, shared in an immersive audio-visual virtual reality cinema experience designed by College of Arts and Letters professors Seth Cluett, Ricky Graham and Chris Manzione. Users donned virtual reality goggles and were enveloped in a responsive 360-degree, serene forest environment with dynamically enhanced audio. Propeller, a showcase for innovation, networking, education, music and fun, was kicked off by remarks from Stevens President Nariman Farvardin and attracted a crowd of more than 8,000 people. ❖

FRATERNITY NAMED CHAPTER OF DISTINCTION

The New Jersey Alpha Residential Learning Community (NJA RLC) chapter of Sigma Phi Epsilon (SigEp) fraternity at Stevens recently received a 2016 Chapter Award of Distinction from the North-American Interfraternity Conference, which represents 70 national and international men's fraternities. This marks the first time a Stevens Greek fraternity or sorority has received such an honor. The NJA RLC was chosen out of thousands of chapters nationwide for its members' high GPA (3.562, compared to the Stevens campus average of 3.289 and the Greek average of 3.298), demonstrated leadership and community service activities. "I've seen some of the best fraternities in the U.S. and NJA RLC stands out from the average chapter in nearly everything they do," Seth Irby, managing director of the national fraternity, said. The fraternity will be honored on campus Oct 1 at 2 p.m. at the Babbio Center atrium. ❖



ALUMNUS, MIT POST-DOC WINS AWARD

Michael J. Mitchell '09 M.Eng. '09, a National Institutes of Health Ruth L. Kirschstein post-doc at the Massachusetts Institute of Technology (MIT), has won a Burroughs Wellcome Fund Career Award at the Scientific Interface. Mitchell, who works with MIT's Koch Institute for Cancer Research, is one of 10 researchers who will receive \$500,000 over five years, as well as job placement, mentoring and professional networking resources. He was recognized for his research on developing a new class of materials and devices that detect and treat bone marrow disorders. Mitchell and his fellow researchers are currently working on novel therapeutics to treat multiple myeloma, an incurable hematologic cancer that colonizes in bone marrow. Mitchell received his Ph.D. in biomedical engineering from Cornell University. ❖

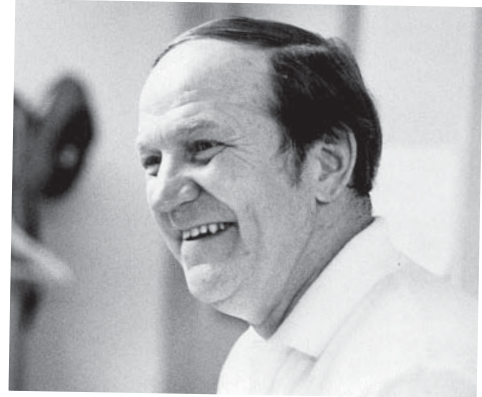


PHOTO: KARIN WANG/HARVARD UNIVERSITY

REMEMBERING 'BUZZ'

Irvin "Buzz" Seymour — a beloved Stevens coach and athletic director who spent 38 years at Castle Point — died on April 27, 2016, in Livingston, New Jersey. The long-time men's lacrosse team coach was 92. Seymour joined Stevens in 1951 as head coach of the men's lacrosse team, a post he held until 1969 while also coaching, at various times, squash, basketball and soccer. In 1971, he was named athletic director and served until retiring in 1989. His lacrosse teams stand out as some of the most storied in Stevens history, as he captured nearly 100 wins and nine winning seasons. Alumni and staff alike praised him as a man of principle, with much integrity and warmth. "Buzz Seymour was a coach who was admired by all his players," says former

player Bill Pepper '58. "He taught us to play, to win, to lose, to hold up our heads and go through it all again the next week. We went to his home with our dates, at Spring Sports Weekend. Every player should have a man like him for a coach." ❖



▲ Irvin "Buzz" Seymour

INNOVATION, EDUCATION TOPIC OF FALL LECTURE

Dr. Curtis R. Carlson will present "Innovation and Education" to the Stevens community in the next installment of the President's Distinguished Lecture Series on Oct. 5 at DeBaun Auditorium. Carlson, founder and CEO of Practice of Innovation, is a pioneer in the development and use of innovation best practices and an evangelist for innovation, education and economic development, sharing best practices with government agencies, businesses and foundations around the world. Previously, Carlson served as the president and CEO of SRI International from 1998 to 2014. Learn more at stevens.edu/lecture. ❖



A STEVENS STALWART LOOKS BACK,

OUTGOING PROVOST RETURNS TO RESEARCH AND TEACHING

Members of the Stevens community who deeply respect and admire George Korfiatis — and there are many — recently collected photographs of him taken over the past 33 years he has spent at Castle Point. Within this collage, you see a few formal moments at the podium, the provost in rich red commencement robes, the visit with superstar alumnus and LG Display CEO Sang-Beom Han M.S. '85 Ph.D. '91 at company headquarters in Korea.

But among the portraits of the former Stevens provost and university vice president — who left his post this summer to return to teaching and research — you get glimpses of the person. In photos, Korfiatis, the professor, listens intently to students, is often smiling, gathers with colleagues and friends, celebrates the birthday of his long-time assistant, Marta Cimillo, and dons sunglasses and a baseball cap on a cloudless day, Lady Liberty on the horizon.

As Christophe Pierre succeeds him as provost this fall (see page 23), Korfiatis plans to continue teaching and mentoring at Stevens, returning to his roots at the university he joined as an assistant professor in 1983.

When he thinks of the monumental changes he's seen at Stevens over many years, the positive momentum of the past several years, all of the people he's met and places he's been, he easily identifies what has been most fulfilling: its people and what they've taught him.

"I learned from everyone that I interacted

with," he says. "One thing that I learned was how to deal with people who have different strengths and different weaknesses. You have to identify these, and the approach that you take is always — to invariably — build on strengths and not dwell on weaknesses. Every person is different that you deal with.

"To be able to interact and sometimes to mentor them has always been a great experience — a great learning experience."

In early August, Korfiatis took a few moments to reflect on where he — and Stevens — are today, the past, and how they got here.

Having served as provost and university vice president since December 2006 — the leader of the academic enterprise and the second-highest-ranking administrator, after the president — Korfiatis feels grateful. He says that he's fortunate to have been provost as Stevens experienced significant growth in numbers and in the quality of its educational programs, faculty and students.

The engineer that he is — before he was provost, he served as dean of the Schaefer School of Engineering and Science from 2002 to 2006 and founded the campus' Center for Environmental Systems — he cites extraordinary numbers. The number of undergraduate applications skyrocketed 145 percent, from 2006 to 2016, while graduate school applications shot up even higher — 150 percent — from 2008 to 2016. The number of faculty has also grown, up 30 percent over the past decade.

"These numbers reflect the demand for a Stevens education that's out there," he says. "They reflect that this place is a destination for people throughout the world. It's pay-off time for all of the efforts. We still have a long way to go, though."

He finds it uplifting to look back and see that despite some monumental challenges, the environment at Stevens was conducive to growth and positive change.

"It actually has to do with people — how you choose the right people, how

you set the tone, and how you treat people," he says.

The most challenging time he faced, of course, was when he agreed to serve as interim president from July 2010 through June 2011, succeeding President Harold Raveché, who resigned in June 2010.

Korfiatis has been praised by the Stevens community, including President Nariman Farvardin, who joined Stevens in July 2011, for his deep knowledge and love of Stevens, his work ethic and his significant role in setting Stevens on the right course and nurturing its growth.

Among the many significant academic changes that Korfiatis charted over the years were more fully embedding innovation and entrepreneurship practices into the Stevens curriculum and setting an example by co-founding two successful companies initially based at Stevens. He's championed the development of new curricula in biomedical, systems, naval and information systems engineering, and developed research relationships with the Department of Defense and universities across the world. Korfiatis also oversaw the installation of new innovative teaching methods and technologies.

Looking back at the Stevens that he joined in 1983 and seeing the Stevens of today, he is simply amazed.

"It's a totally different place," he says. "Stevens was small, with a good reputation, but it was a very isolated place — from the rest of the community and the rest of the world.

"We were not close to where we are now — in the quality of the education, the types of students we attract, the quality of the faculty we attract, and the research we're producing. It's mind-blowing. The world has come to recognize us."

A leader in environmental research — one of his companies, HydroGlobe Corp., focused on removing arsenic and other contaminants from drinking water — Korfiatis will return to an office inside Nicoll Environmental Laboratory on campus, with future plans to teach classes in environmental sustainability and conduct research. He will also mentor students and faculty at the new Stevens Venture Center (see page 12), advising on how to launch their inventions into commercial enterprises.

His immediate plan is to take a sabbatical so he can visit collaborators at universities in Asia



◀ Korfiatis, far left, speaks with students at the Stevens Innovation Expo.

AND AHEAD



▲ George Korfiatis, the provost and university vice president who has served Stevens for more than three decades, will return to teaching and research starting this fall.

and Europe and share his experience of bringing innovation and entrepreneurship practices to the university level.

Returning to teaching, research and mentoring takes him back to his beginnings at Stevens and seems close to his heart.

“Students will move this country — and the world — forward, and Stevens prepares them well for this role,” Korfiatis says. “Our contributions to society are and will continue to be tremendous.” ❖ — *Beth Kissinger*

PARTNERS IN STEAM

This summer, 14 academically talented juniors and seniors from the Newark, New Jersey, public schools took classes and experienced college life at Stevens, thanks to a partnership between Stevens, the Newark Public Schools and the PSEG Foundation. The Pre-College Program at Stevens received a \$35,600 grant that enabled the students to attend the program, with tuition, housing, meals and all activities covered. Funding was provided in part by the PSEG Foundation and through other philanthropic funding awarded to the Newark schools. The Pre-College Program includes classes in engineering and science, technology, society and the arts and business, as well as hands-on projects and trips to local tourist sites. One major goal: to increase the number of students studying Science, Technology, Engineering, Art and Math (STEAM), particularly under-tapped women and minorities. ❖

Newark public schools students Ugonna Okafor, left, and Chantaly Villalona participated in Stevens' Pre-College Program this summer, thanks to a partnership with Stevens, the PSEG Foundation and the Newark Public Schools. ▼



For more Stevens news, events, videos and more, please visit stevens.edu.



NOKIA BELL LABS TEAMS WITH STEVENS IN RETURN TO ITS ARTS ROOTS

Throughout its storied history as the world's most famous research organization, Bell Labs has transformed businesses and enriched the lives of people around the globe through the scientific inventions and ingenuity of its researchers. Less known perhaps is the company's pioneering contributions in the arts.

In the 1960s, Bell Labs collaborated with New York City artists and composers, such as dancer Merce Cunningham and composer John Cage, to create new works in music, theater and the media arts as part of Bell Labs researchers' pioneering exploration of the intersection of technology and art at the dawn of the new digital era, which became known as "E.A.T." (Experiments in Arts and Technology).

Now, as networks increasingly form the digital fabric that underpins everything we do, Bell Labs reached out to Stevens professor Rob Harari to collaborate in Bell Labs' revitalized E.A.T. program. Through its collaborative research effort with Harari and with Stevens, Nokia Bell Labs is following in the company's long and distinguished tradition in the creation and production of the arts with a new area of research that fuses human movement with media and digital art.

Harari, industry associate professor in the Music and Technology program at Stevens, was tapped by Paul Albin Wilford, senior director, Audiovisual Technologies Research, Nokia Bell Labs, to collaborate on the new project in November 2015, when Wilford showed him a slide of the conceptual representation for the Human Digital Orchestra™* and asked, "Can you do anything with this?"

The product of that collaboration was presented to an audience of roughly 500 invited guests at the sprawling industrial research campus of Nokia Bell Labs in Murray Hill, New Jersey, on April 28 with the world premiere of the Human Digital Orchestra as part of a two-day celebration — the Bell Labs Shannon Conference on the Future of the Information Age — to mark the 100th birthday of scientist Claude Shannon, widely regarded as the father of information theory and digital computing.

"As researchers, we are always trying to understand the human side of a problem," Wilford

said. "Claude Shannon understood this very well. With the collaboration between Bell Labs and Stevens Institute of Technology, we embraced this sentiment from Shannon and sought to express his work in ways that a wide audience could appreciate. By interweaving arts and science, we get a deeper and richer insight into the problems we should be working on that can have a wide impact on the way we live."

INTERACTIVE TECHNOLOGY DRIVEN BY THE AUDIENCE

Stevens' involvement with the Human Digital Orchestra follows a 2014 collaboration between Nokia Bell Labs and Stevens that culminated in a research display "Butterflies Alight!" at the W Hotel in Hoboken.

Harari would go on to serve as artistic director, producer and master of ceremonies for the performance, titled "The Shannon Effect," which tells the story of Shannon, a larger-than-life figure whose influence on the modern world is felt on everything from cell phones to high-definition television.

"Every element of the performance was designed with a Shannon metaphor in mind — Shannon the conductor of new ways to communicate; Shannon the builder, inquisitive of structural design through a whimsical lens; Shannon the problem-solver through invention," he said.

In the five months following the meeting with Wilford, Harari worked with Bell Labs leaders to meld the artistic vision with a compelling script, and to bring together performers, technologists and the involvement of WorldStage, an audio, video, lighting and event staging company that also produces Broadway and international shows.

Together with Wilford's team, Harari designed a performance orchestrated by the movements of both the performers and the audience and inspired by the immersive Bell Labs facility referred to as "The Anomaly," which resides on the Nokia Bell Labs Murray Hill campus.

"By designing the venue using a white tent, we could project everywhere to visually show what the Human Digital Orchestra does by having the

performers wear bracelet accelerometers to measure and transmit motion data from the tap dancer and conductor. In conjunction with video analytics used to trace-map the pianist's hands, the data streams were processed and then generated into command codes to control lighting, audio spatialization and computer graphics," Harari said.

A MULTI-FACETED COLLABORATION

Performers included world-renowned artists such as tap dancer Andrew J. Nemr and jazz musician Dan Levinson. Two of the performers were Harari's Stevens colleagues at the College of Arts and Letters (CAL): conductor and composer Andy Brick, director of the music and technology program, and world-renowned concert pianist Aysegul Durakoglu, an associate professor at CAL.

Students from CAL were also involved in the production of "The Shannon Effect." Music and technology majors and current Stevens graduate students Brian Voyer '16 and David Estes-Smargiassi '16, both interns at Nokia Bell Labs, co-composed. Harry Patterson, Class of 2018, also a music and technology major, created the conceptual graphics for the staging. In addition, Julian Chaves '15, now a member of the WorldStage crew, contributed as a projection designer and systems engineer.

The Bell Labs research team led by Wilford





A SHARED LEGACY

Over the decades, Stevens alumni have made significant contributions during their tenure at Bell Laboratories. Here's a look at just some of these prestigious Stevens/Bell Labs alumni:

GUNTHER K. WERTHEIM '51: He joined Bell Laboratories in 1955 and enjoyed a 40-year career with the lab, becoming a pioneer in Mossbauer spectroscopy. Dr. Wertheim published his own trend-setting results using this tool at his renowned laboratory.

ELIZABETH E. BAILEY M.S. '66: The Wharton School professor worked with Bell Laboratories from 1960 to 1977, first as a computer programmer and later as head of the Economics Research Department.

GERARD J. FOSCHINI PH.D. '67: This telecommunications pioneer spent more than 50 years with Bell Laboratories and is renowned for his contributions to the science and technology of multiple-antenna wireless communications.

FRANK FAWZI '84 M.S. '87: While at AT&T Bell Laboratories, he was the lead data communications architect on a team responsible for the company being awarded a \$1.4 billion contract from the Internal Revenue Service. He is now chief executive officer of IntelePeer.

ED AMOROSO M.S. '86 PH.D. '92: He is former senior vice president and chief information officer of AT&T and a longtime Stevens adjunct professor.



▲ Across the top of the page are scenes from the premiere of “The Shannon Effect,” held on April 28. Above, Stevens Professor Rob Harari, left, served as artistic director, producer and master of ceremonies for “The Shannon Effect.” Photos: Farisa Ahmed

and Susanne Arney worked non-stop for five months creating the algorithms that provide the functionality of the Human Digital Orchestra. The team grew to double digits as the exploration of Shannon’s persona kept providing new story lines to display technologically.

Part of the story being told, noted Harari, was the complexity of staging a live show.

“The audience is exposed to all that is usually hidden in live entertainment. We created and lit a satellite stage for all the technologists that were running the sound, lighting, projection, computers and so forth. There were spotlights on those guys at different points in the performance, because what they were doing was just as intricate and intense and impactful to the audience as what we were doing on the stage.”

Audience members were not only spectators, but also participants in the orchestra. Through an app downloaded onto their cell phones, their collective behavior had a direct impact on the music being heard as data from their movements was transmitted into a wireless stream, then blended algorithmically into the music as it played.

The successful staging of “The Shannon Effect,” according to Harari, served as a proving ground for a new disruptive technology in live production.

“In the entertainment world, everything is sort of pre-programmed,” he noted. “What has been lacking is real-time automated control. The research stemming from this collaboration has resulted in the creation of a dynamic control system for staging technologies that can be applied in myriad ways based on the content of the spec-

tacle, be it theatrical, sporting events or music. The same technology can translate to a Broadway stage, a Las Vegas production like Cirque de Soleil or even a sporting event such as the X Games, using a flipping motorcycle instead of a tap dance.”

Harari says that Nokia Bell Labs and Stevens will continue to build on the system they created, adding that their ongoing relationship harkens back to the kind of arts and technology collaboration that took place at Bell Labs in the 1960s.

Nokia Bell Labs reinforced this collaboration with the recent announcement that Jeff Thompson, assistant professor and director of the Visual Arts and Technology program at CAL, would become the first Artist in Residence at Bell Labs in Nokia’s recent revival of E.A.T. He is now located at the company’s Murray Hill, New Jersey, campus.

The continued success of Nokia Bell Labs’ collaborative research with Stevens, according to Harari, dispels the notion that artist and technologist have different functions and skill sets, and exemplifies Stevens’ philosophical approach to humanities and technology education.

“At Stevens, the pursuit of innovation, grounded both in scientific principles and the humanities, has been the cornerstone of the university since its founding.” ♦ — *Young Soo Yang*

◀ Opposite page: Concert pianist Aysegul Durakoglu, an associate professor at Stevens, performs during the premiere of “The Shannon Effect.” At left, Nokia Bell Labs President Marcus Weldon, left, and Stevens Institute of Technology President Nariman Farvardin appear on stage for the presentation of “The Shannon Effect.” Photos are courtesy of Nokia. Source: <https://www.youtube.com/watch?v=qBvcguzl4Ew>





**NEW STEVENS
VENTURE CENTER
NURTURES
ENTREPRENEURS**

IDEA INCUBATOR

This past July, 22 bright, enthusiastic undergrads gave up a summer weekend to huddle in office space near campus and code. Working in teams and mentored by faculty members, they tackled some of the intractable problems that come with life in Hoboken. (Yes, parking was one of them.) Some of the kids toiled deep into the early morning hours.

The marathon session, dubbed “Let’s Help Hoboken,” marked the first in what is expected to be a series of “hackathons” designed to harness the creative energy and enterprise of Stevens students. It was also among the first events sponsored by the Stevens Venture Center, a new university initiative designed to expand and redefine the entrepreneurial experience that has long been an integral part of a Stevens education.

Located in a glass-walled space in a relatively new River Street high-rise, overlooking the Mile Square City and shoulder-to-shoulder with the offices of Jet.com — Hoboken’s best-known startup — the Venture Center has a multi-part mission.

First, it aims to serve as an incubator, providing space, equipment, mentorship, networking opportunities and other resources to students and recent graduates who have promising science- and technology-oriented business ideas, and to faculty members whose research has commercial potential. Second, it plans to offer education in entrepreneurial practices and thinking through an ambitious schedule of workshops, meetings and events, such as the summer hackathon.

By launching the Venture Center, Stevens joins a growing list of institutions that are recognizing the value of their technology and the need to provide opportunities for students with entrepreneurial yearnings. The International Business Innovation Association estimated that in 2012, there were 1,250 incubators in the United States, about a

third of them sponsored by academic institutions. Since then the numbers have only grown.

For Stevens, the Venture Center is part of an ongoing strategic effort to place the university among the top ranks of entrepreneurially oriented institutions, said President Nariman Farvardin.

“The Stevens Venture Center is a brand new and critically important element of the university’s portfolio of programs and services designed to nurture and accelerate businesses being launched by our students, faculty and alumni,” he said.

“With educational programs, technical assistance, mentoring, networking opportunities and other support services, the Stevens Venture Center brings a necessary complement to the existing educational programs that help students develop their ideas and projects into successful ventures.”

The Stevens Venture Center began ramping up operations early this year, with a formal opening set for this fall. The facility itself consists of a 1,000-square-foot space with 29 neatly arranged workstations, a conference room and a small lab area that includes a 3D design station, a 3D printer and, soon, a circuit board plotter — enough to help a fledgling venture develop its idea to the prototype stage.

A handful of companies are already working there, among them FinTech Studios, a firm built around a cloud-based “big data” investment research and analytics platform designed for the financial industry; Savizar, an innovative patent-search tool; Castle Point Learning Systems, a faculty-led educational platform based on artificial intelligence; MimicTrade, an investment gaming platform built to teach Millennials how to invest in the stock market; and a couple of biomedical startups focused on dental devices and technologies.

Students, faculty and staff can apply to be part of the program through the Venture Center’s website. Venture Center staff will also be scouting the annual Stevens Innovation Expo for seniors with promising ideas and helping teach the Entrepreneurial Thinking course required



1 **Adrienne Choma,** assistant director of the Venture Center, and **Werner Kuhr '80** M.S. '82, director of the Venture Center.

of all freshman engineering students. The center also plans events that will help identify and nurture potential entrepreneurs early in their academic careers. A future hackathon, for instance, will be geared toward incoming freshmen.

But the facility's value extends far beyond the space it provides, said Werner Kuhr '80 M.S. '82, director of the Venture Center. The center also gives startups a chance to learn from each other and from experienced business people — including academics, seasoned entrepreneurs and Stevens alumni — who know how to turn an idea into a real, viable business.

Kuhr said the center has been recruiting entrepreneurs-in-residence to give Venture Center companies access to people with frontline knowledge and experience. Drawn from the ranks of business and technology companies, the entrepreneurs-in-residence serve as both counselors to Venture Center companies and as speakers at center events.

On board so far are Richard Cundari '64, founder and chief executive of US Ventures LLC, an investor in early-stage small businesses; Sandra J. Doran, the CEO of Castle Point Learning Systems; and Roman Malanchouk '10 M.Eng. '11, the CEO and founder of walkTHIShouse.

An advisory board will also be formed. Kuhr said working with alumni and leveraging connections through the Stevens Entrepreneurs Network will be key to growing the Venture Center's programs, as will funding that the center expects to secure through the National Science Foundation's Innovation Corps program. The Entrepreneurs Network, which began early this year as a LinkedIn group, now includes a couple of hundred members whose expertise could be invaluable for budding startups.

"To start, we've got a good mix of people with different levels of experi-



For more information on the Stevens Venture Center, visit stevens.edu/venturecenter.

ence who can provide the kind of professional education you typically don't get in an academic environment," Kuhr said. "As we grow, we hope to develop the infrastructure to create a rigorous training program for our startups."

The center's resources also include its two leaders, who have entrepreneurial chops of their own. Kuhr, a chemistry professor, directs the university's technology commercialization program. Previously, he founded and sold an electronics materials company called ZettaCore Inc.

Adrienne Choma, the center's associate director, co-founded an oncology-focused diagnostic technology startup called Saladax Biomedical. Prior to that, she spent two decades in leadership roles in the pharmaceutical industry. She holds a law degree and was among 12 winners of the 2013 Ernst & Young Entrepreneurial Winning Women Award. She was also the first Stevens entrepreneur-in-residence.

A longtime resident of Hoboken, this is Choma's first venture into the academic world after a long career in private industry.

"I was really looking for a different challenge and I felt I wanted to do something to give back," she said. "Here, I found that I can use my background to help students who have an interest in business. It's the perfect marriage."

Choma added that so far, education at the Venture Center has been a two-way street.

"It's a whole new world for me to be around these students," she said. "It's invigorating. I'm learning something every day. Until I came here, I didn't even know what Snapchat was." ♦ — *Michael Markowitz*

2 Alumni check out the facilities at the Stevens Venture Center soft launch SEN – Reception in February. **3** Stevens assistant professor and Entrepreneur-in-Residence Mukund Iyengar works with Keven Barresi '15, CTO of FinTech Studios, which is housed in the Venture Center.

“TO START, WE’VE GOT A GOOD MIX OF PEOPLE WITH DIFFERENT LEVELS OF EXPERIENCE WHO CAN PROVIDE THE KIND OF PROFESSIONAL EDUCATION YOU TYPICALLY DON’T GET IN AN ACADEMIC ENVIRONMENT.”
— *Werner Kuhr '80 M.S. '82*

PHOTOS: JEFF VOICK

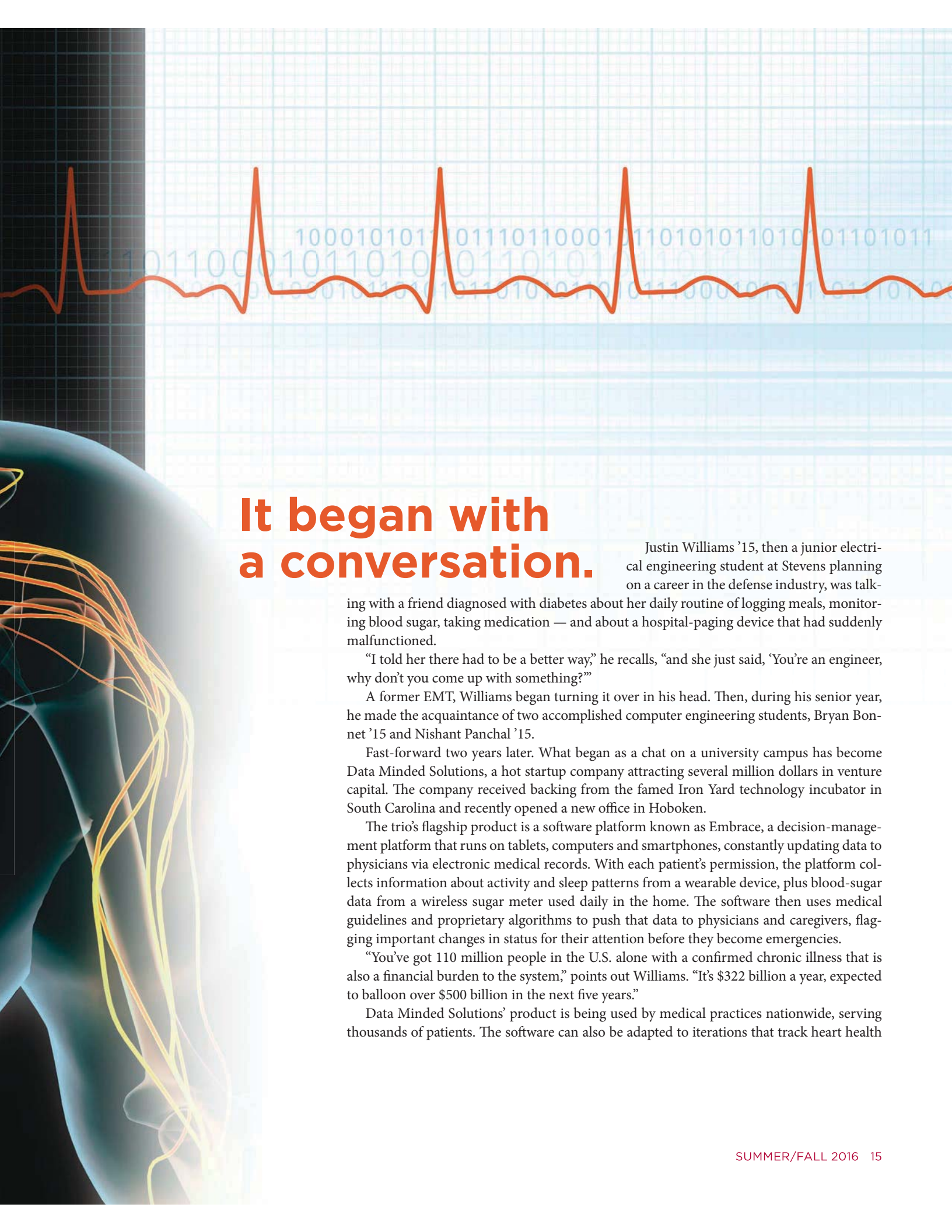




GOOD FOR YOUR HEALTH

Stevens pushes to solve complex
medical challenges in healthcare

BY PAUL KARR



It began with a conversation.

Justin Williams '15, then a junior electrical engineering student at Stevens planning on a career in the defense industry, was talking with a friend diagnosed with diabetes about her daily routine of logging meals, monitoring blood sugar, taking medication — and about a hospital-paging device that had suddenly malfunctioned.

“I told her there had to be a better way,” he recalls, “and she just said, ‘You’re an engineer, why don’t you come up with something?’”

A former EMT, Williams began turning it over in his head. Then, during his senior year, he made the acquaintance of two accomplished computer engineering students, Bryan Bonnet '15 and Nishant Panchal '15.

Fast-forward two years later. What began as a chat on a university campus has become Data Minded Solutions, a hot startup company attracting several million dollars in venture capital. The company received backing from the famed Iron Yard technology incubator in South Carolina and recently opened a new office in Hoboken.

The trio’s flagship product is a software platform known as Embrace, a decision-management platform that runs on tablets, computers and smartphones, constantly updating data to physicians via electronic medical records. With each patient’s permission, the platform collects information about activity and sleep patterns from a wearable device, plus blood-sugar data from a wireless sugar meter used daily in the home. The software then uses medical guidelines and proprietary algorithms to push that data to physicians and caregivers, flagging important changes in status for their attention before they become emergencies.

“You’ve got 110 million people in the U.S. alone with a confirmed chronic illness that is also a financial burden to the system,” points out Williams. “It’s \$322 billion a year, expected to balloon over \$500 billion in the next five years.”

Data Minded Solutions’ product is being used by medical practices nationwide, serving thousands of patients. The software can also be adapted to iterations that track heart health

and other chronic health concerns, or even combinations of health issues.

“Data Minded Solutions is an excellent example of how a Stevens education in science, engineering and entrepreneurial thinking arms our graduates with the skills to tackle major areas of opportunity in healthcare,” says Dr. Peter Tolia, professor and director of Stevens’ Center for Healthcare Innovation (CHI), “including starting new companies in novel areas to address the unmet medical needs of society.”

Yet Data Minded Solutions is just the tip of Stevens’ growing healthcare initiative — much of it drawing in areas not traditionally associated with the university.

A GENEROUS NEW GIFT, RIGOROUS AND SURPRISING NEW RESEARCH

Healthcare and biomedical research is one of the pillars of the Stevens Strategic Plan, a plan that will transform and grow the university by 2022. The creation of CHI in 2013 was Stevens’ stake in the ground to facilitate innovative discoveries in the field and develop novel tools to analyze, model and visualize complex medical data, all in an effort to address current gaps in healthcare technology and delivery.

Today CHI coordinates and supports numerous healthcare-related activities, including both leading-edge research and education, across Stevens’ four schools.

“We are advancing our educational and research mission in healthcare, life sciences and biomedical engineering by supporting research



1 Data Minded Solutions’ Nishant Panchal, Justin Williams and Bryan Bonnet, all Class of 2015, gather in their Hoboken office. Photo: Jeff Vock **2** Artist’s rendering of the proposed Multi-Disciplinary Tissue Engineering Lab, funded by Mary Jane and Frank Semcer ’65 and slated for the future Academic Gateway building.

and development, advancing new educational programs and developing strategic partnerships,” explains Tolia. “That is our directive.”

The initiative recently gained a prominent ally when Stevens alumnus Frank Semcer ’65 and his wife Mary Jane contributed generously toward the creation of a new tissue engineering lab and new faculty chair within CHI (see story, page 36).

The center’s singular quality, says Tolia, is its ability to combine Stevens’ historical strengths in engineering, science, computing and analytics and focus on five strategic thrust areas critical to the healthcare industry now and in the future.

Those new focus areas include:

- **Research to discover effective new drugs and therapies**, powered by a team of 12 faculty and researchers — some drawn from leading pharmaceutical firms such as Roche, Merck and Novartis. One Stevens researcher, Sid Topiol, harnesses the power of computer algorithms, blending art and science to seek out the next medicines to treat disease (see story, page 22).

- **Analysis of medical data and modeling of healthcare systems.** A National Science Foundation-funded project by computer science professor Samantha Kleinberg, for example, mines neurological intensive care unit stroke data for patterns that may help physicians improve treatment and patient outcomes.

- **Biomaterials and polymer research.** In one effort, materials science professor Matt Libera works to devise new materials and surfaces for medical implants and transplants that can resist infec-





▲ Dr. Peter Tolias, director of Stevens' Center for Healthcare Innovation

tion (see story, page 18).

• **Medical devices, including new surgical tools and sensors.** A good example: Electrical and computer engineering professor Yingying Chen has created a system that can report medical conditions to physicians remotely via the WiFi networks in homes and businesses (see story, at right).

• **Tissue engineering projects,** including 3D models used for drug development and therapy selection. Nanotechnology professor Woo Lee attacks blood cancers, such as multiple myeloma, and other health challenges, such as osteoporosis, seeking new ways of testing and modeling therapies on bone structures in his lab prior to patient trials (see story, page 20).

Additional research is delving into areas such as healthcare policy, medical imaging and biomedical engineering:

• Stevens collaborates with a top regional hospital, Hackensack University Medical Center (HackensackUMC), on a variety of important areas including cancer research, cardiology and autism (see story, page 20).

(Continued on page 19)

WIRELESS WELLNESS

Stevens researcher creates system to monitor our health using WiFi signals

IMAGINE SENDING AN INVISIBLE, SUDDEN ALERT TO YOUR PHYSICIAN THAT YOU NEED MEDICAL ATTENTION.

It may happen sooner than you think.

Stevens professor Yingying Chen recently received funding support from the National Science Foundation (NSF) to develop an exciting new way of monitoring vital signs — not by hitching yourself to a smartphone or wearable but, rather, via the invisible ubiquitous WiFi networks that connect our homes, hospitals and businesses to the internet.

“What is unique about this approach is the fact that you don’t need to wear anything, such as a wearable device, and you don’t need to do anything other than ensure one device in your home remains connected to one of your wireless access points,” says Chen, who will work alongside researchers at Rutgers University’s Robert Wood Johnson Medical School and Florida State University.

The system works by exploiting small slivers of the wave-shaped radio signals WiFi networks continuously produce. Those slivers of waves, called subcarriers, pass through the space in a dwelling and are highly sensitive, or “fine-grained,” in their properties. The carriers’ changing states, as they interact with objects in a room, can be made to detect and transmit crucial information moment-by-moment — in this case, a person’s precise location, position and movements.

By capturing this stream of data and then analyzing it at the back end, the team’s software can decipher whether a person is stationary or moving, the pace of his or

her breathing and the rate and regularity of heartbeats. (The system is tuned to recognize and filter out both ambient and sudden noise, as well: traffic, dogs, gusts of wind, ringing phones and others entering a room, for example.)

Once each individual’s typical activities and vital signs have been analyzed and set as a reference point, sudden departures from those norms could also be made, for example, to send alerts directly to a doctor or nurse who can take immediate action.

“We have already demonstrated, with a set of volunteers using this technology over a six-month period, that WiFi works as a detector and reporter of vital signs,” notes Chen.

“Next we will work to improve the system, build the user interface and test it with larger groups of volunteers and then actual patients.”

Once the technology is refined, Chen’s team will attempt to build predictive analytics into the software, drawing on larger data sets to predict dangerous health events before they occur from patterns of erratic sleep, breathing or heartbeat.

“For the elderly, children, autistic patients and others who may not remember to use devices to report their health daily or may not immediately go to a hospital when they feel unwell,” concludes Chen, “we believe this could be an important new technology.” ♦ — Paul Karr



▲ Stevens professor Yingying Chen
Photo: Christopher Amaral

PHOTO: JEFF VOICK

MATERIAL DIFFERENCE

STEVENS RESEARCH TO DEVELOP INFECTION-RESISTING BIOMATERIALS

Infection associated with hip or knee implants is relatively rare, but it can be a significant concern when implanting tissue-contacting biomedical devices. Infection causes failure in 1 to 15 percent of all implants, particularly in those associated with orthopedic trauma such as wounds from an accident or battlefield injury.

An infected medical device must, at the very least, be surgically removed while the patient is cured of infection with courses of strong antibiotics. Then a new device must be re-implanted. This process both challenges the patient's health and burdens healthcare systems.

That's why Stevens researchers are working to develop more sophisticated biomaterials that bacteria cannot cling to and multiply upon so easily.

"Infection-resisting biomaterials is now one of the 'holy grail' areas of biomaterials science," says Matthew Libera, a professor of materials science whose research group works actively in this area and who holds a patent in the technology.

TENNIS BALLS, ZIPLOC BAGS AND DEFENDING AGAINST BACTERIA

The patented technology works by affixing microgels onto device surfaces in specific patterns that exploit the differences between bacteria cells and healthy tissue

or bone cells. Bacteria, which are generally round and rigid ("think of them as roughly like microscopic tennis balls," explains Libera) cannot fit into small gaps between the microgels and are less likely to adhere to the device surface.

This effect helps prevent biofilm formation on devices. Once bacteria grow into a biofilm, they become extremely resistant to antibiotics — perhaps as much as 10,000 times more resistant — and thus much more dangerous to human health.

Bone and other healthy tissue cells, on the other hand, are highly plastic ("think of little Ziploc bags partially filled with water," explains Libera) and can mold themselves to the shape of most surfaces, growing normally even as bacteria are repelled from the dotted surfaces of the medical devices with which the Stevens team is working.

"It's now fairly easy to make a surface to which many kinds of cells adhere, or one that repels nearly all cells," Libera says. "Our challenge is to make a surface to which the good cells stick but the bad cells cannot. And we think we're close."

While the gels can be printed in patterns on medical devices using electron beams, that solution is unwieldy and expensive.

So Libera's team has come up with a method of depositing the microgels onto device surfaces from a colloidal solution, from which they will assemble themselves — repelling each other at approximately the proper distances by electric charge — as they are applied.

"You basically just dunk the device into a beaker containing a microgel solution, and

"Infection-resisting biomaterials is now one of the 'holy grail' areas of biomaterials science."
— Matthew Libera



let nature do the rest,” explains Libera.

This solution approach can be used to modify the surfaces of implants and other devices during the last stage of manufacture, he suggests.

“Our focus now is to use similar methods of self-assembly to load the microgels with antibiotics,” explains Libera. “When that effort is successful, any bacteria that do adhere to a device surface will then be confronted with antibiotics right at the device surface.”

A LEADING GLOBAL CONFERENCE ON BIOMATERIALS

In addition to its research, Stevens has also created one of the world’s leading conferences to address biomaterials-associated infection.

The 4th Stevens Conference on Bacteria-Material Interaction, to be held on the Stevens campus in Hoboken, is scheduled for June 2017. Like its predecessors in 2011, 2013 and 2015, the conference will assemble a range of experts to discuss im-

plant-associated infection.

As many as 100 scientists, researchers, students and clinicians — as well as representatives of the U.S. Food and Drug Administration — will convene to identify and address the scientific, technical and regulatory challenges facing the development of infection-resistant, tissue-contacting biomaterials.

“These issues are meaningful to anyone who has had a joint, heart valve or tendon replaced, or has had dental implants,” says Libera, who serves as chair of the conference. “The problems are highly interdisciplinary, and we must work together to define and attack the challenge in as coordinated a fashion as possible.” ❖
— *Paul Karr*

Stevens materials science professor Matt Libera and Chris Wang Ph.D. '13, seated, work in Stevens' Laboratory for Multiscale Imaging using an advanced electron microscope to study and develop infection-resisting biomaterials to fight infection in medical devices and implants. ▼



▲ Stevens computer science professor Samantha Kleinberg Photo: Christopher Amaral

(Continued from page 17)

• Electrical and computer engineering professor Negar Tavasollian is investigating a new method of imaging the skin to detect early-stage tumors before they become deadly.

• Professor Bill Rouse and a team from Stevens' Center for Complex Systems and Enterprises work with the University of Pennsylvania to create new interactive tools that visualize, display and estimate health benefits and costs and aid rapid, effective decision-making — particularly for elder care.

• Biomedical engineering professor George McConnell investigates better ways of treating Parkinson's disease, obsessive-compulsive disorder and other neurological and psychiatric disorders.

• Mechanical engineering professor Manu Mannoor has created hybrids of electronic sensors and 3D-printed tissues that may one day be integrated into the body to enhance hearing or detect tooth decay.

• And biomechanical engineering professor Tony Valdevit is testing a new method of extracting teeth using gentle vibrations, rather than physical force.

“There is no better time for Stevens to advance this research in healthcare innovation,” concludes Tolias. “Healthcare is a \$3 trillion-per-year business in the U.S., and Stevens has the expertise to collaborate and innovate in this space. In fact, research undertaken by Stevens faculty and students is already affecting patients' lives and improving the quality of care.” ❖

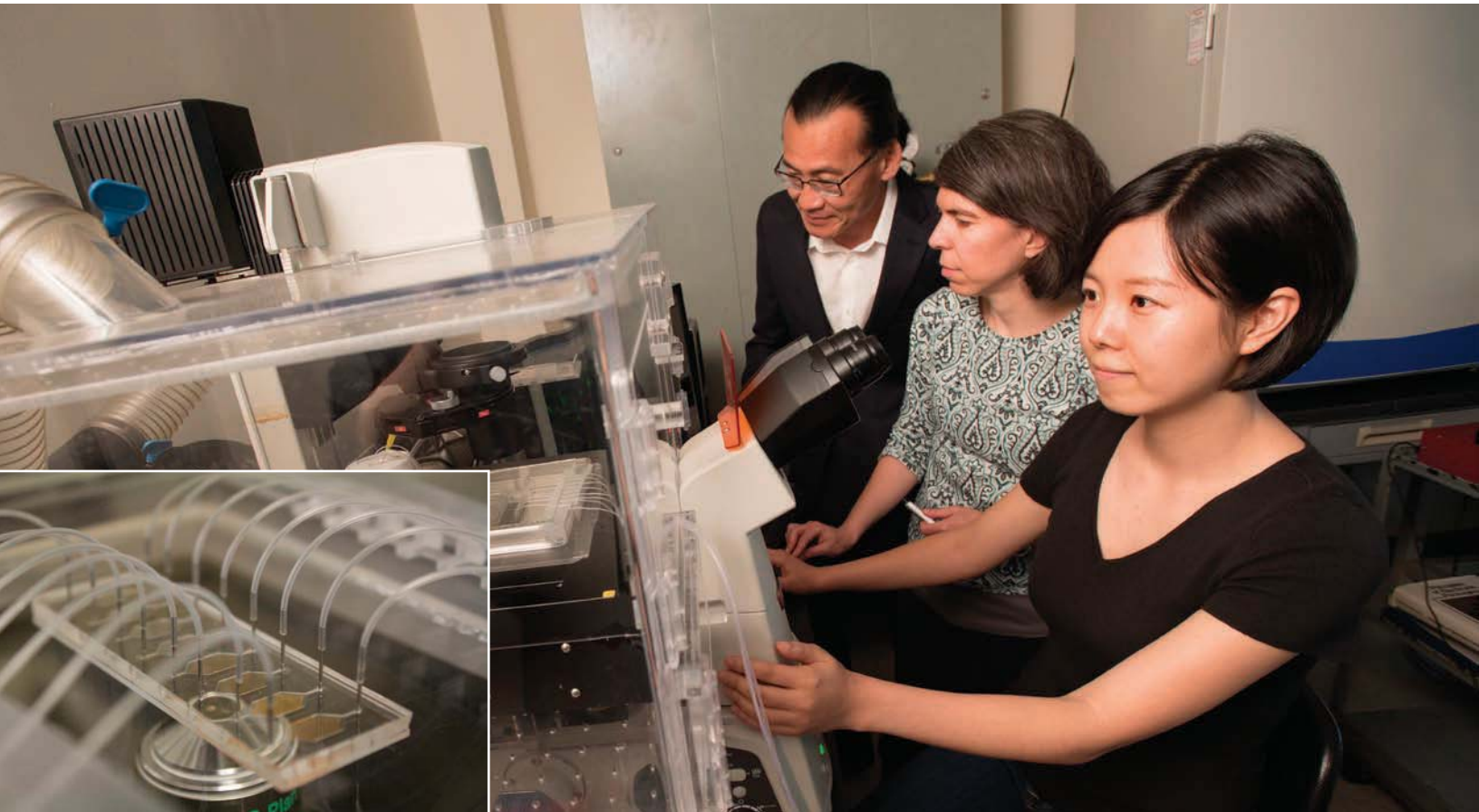
— *Young Soo Yang also contributed to this story.*



PHOTO: JEFF VOCK



To learn more about Stevens' Center for Healthcare Innovation, visit stevens.edu/CHI.



▲ Stevens professor of chemical engineering and materials science Woo Lee, Hackensack University Medical Center researcher Jenny Zilberberg and Stevens research assistant professor Wenting Zhang investigate better ways of modeling and treating cancers. **Inset:** This Stevens-patented array device tests cancer medications and promising new therapies on samples of cancerous multiple myeloma cells.

HEALTHY PARTNERSHIP

Stevens teams up with one of the region's top hospitals to address cancer and other medical challenges

Hackensack University Medical Center (HackensackUMC) looms large in the tri-state area's medical landscape. The center, equipped with 775 beds and the only Level II trauma center in its county, is ranked as the premier medical facility in New Jersey and fourth-best in the entire metro New York City area by *U.S. News & World Report*. HackensackUMC is also considered one of the 40 top hospitals in the nation in critical specialty areas such as cancer research, cardiology, geriatrics and orthopedics, and its pediatric hospital is highly ranked as well.

Now Stevens is playing a visible role as a research partner and educator for the medical center. Since 2012, Stevens and the medical center have partnered to offer biomedical educational programs to undergraduate and graduate students under a joint agreement. The two institutions also periodically offer cross-appointments of clinical and administrative staff at Stevens and faculty appointments at HackensackUMC.



▲ Stevens professor Woo Lee



CORNERING CANCERS, BATTLING BONE LOSS

In one important project, Stevens and HackensackUMC are investigating new ways to battle multiple myeloma (MM), an incurable blood cancer that metastasizes to and destroys bones. MM tumors in bone marrow present a modeling problem that has proven historically difficult to crack; answers would help improve the survival of cancer patients.

In an effort to better understand and treat MM, the National Institutes of Health (NIH) has awarded Stevens professor of chemical engineering and materials science Woo Lee and medical center researcher Dr. Jenny Zilberberg nearly \$700,000 in support for a promising three-year project. Together they're investigating a new technology that may enable researchers to reconstruct MM tumors in the lab, using cells carefully biopsied from MM-afflicted patients.

A team of experts from both Stevens and the medical center — one of the nation's leading MM treatment centers — cultures samples of the cancerous MM cells in a Stevens-patented array device that's roughly the size and shape of a small honeycomb. Then they introduce both existing cancer medications and promising new therapies to the cells and monitor their effectiveness.

That's both quicker and safer than testing unknown medicines on patients — and it provides better answers than testing medicines on mouse cells or cultured cell lines, the current methods of doing oncology research.

"It's important to study cancers using primary human cells," explains Lee. "In MM, a percentage of cancer cells evade therapy and cause relapse, and those interactions will not show up if you use mouse models or cell lines in your research."

Within a year or two, if the technology is perfected, clinical trials at the medical center could potentially begin. The research could also pave the way for advances in treatment of breast, prostate and other cancers, as well as produce new medical devices and services.

Lee also collaborates with HackensackUMC on osteoporosis research. This debilitating condition, in which the body consumes its own bone too quickly, affects more than 200 million people worldwide. Utilizing the same Stevens-patented microfluidics technology deployed in cancer research, Stevens and the medical center are investigating improved methods for cultivation of bone cells outside the body for application to bone diseases. Both NIH and NSF support this research.

A COLLABORATION THAT WILL CONTINUE

Heart health is being addressed by the partners, as well. Biomedical engineering professor Vikki Hazelwood Ph.D. '07 and a Stevens Ph.D. student work closely with medical center cardiologist Dr. Gregory Simonian to analyze and improve outcomes for abdominal aneurysm patients who have been treated with stent grafts.

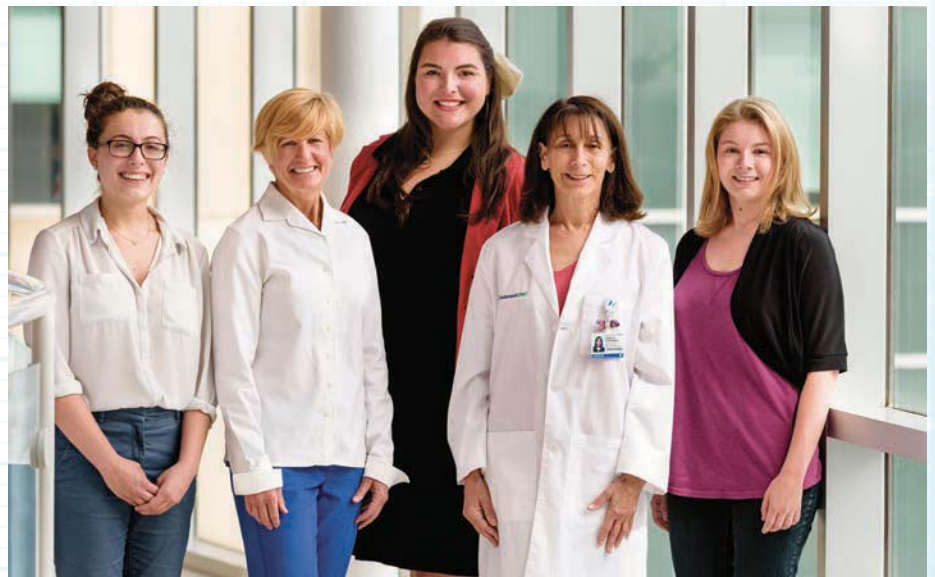
"Our research analyzes current graft technology design, as well as patients' characteristics and geometry, in an effort to

reduce risk occurrence of postsurgical leaks," explains Hazelwood.

Another team of five Stevens graduate and undergraduate students, also advised by Hazelwood, is collaborating with Dr. Randy Huron, director of the medical center's Institute for Child Development, on a project to create a center within the HackensackUMC campus for children with autism and their families, including treatment and support resources.

Additional project partnerships between Stevens and the medical center are underway or planned in infection detection, data analysis and allergy research, among other areas.

"Partnerships with Stevens have contributed to the medical center both academically and in terms of advancing medical research," concludes Dr. Jeffrey Boscamp, vice president and chief academic officer for HackensackUMC and physician-in-chief at Joseph M. Sanzari Children's Hospital. "We are pleased to be working together to educate our healthcare team and create better patient outcomes through research that will yield important new findings and treatment protocols in the future." ♦ — Paul Karr



▲ Nicolette Pappas '16, Stevens biomedical engineering professor Dr. Vikki Hazelwood Ph.D. '07, Brianna Marchal '16, Hackensack University Medical Center child development institute director Dr. Randy Huron and Jenna Gloria '15 collaborate on the creation of a new center for autism resources within the medical center.

PHOTOS: JEFF YOOK



GOOD PILL HUNTING

STEVENS TURNS TO COMPUTING POWER AND INDUSTRY EXPERTISE IN THE SEARCH FOR THE NEXT GREAT MEDICINES

The pharmaceutical industry has grown into a global powerhouse, producing more than \$300 billion in annual revenues in the U.S. and nearly \$1 trillion worldwide. Yet cures for or proper management of many medical conditions remain elusive or incomplete.

Now Stevens has entered this conversation with an innovative technology that can save years — and millions of dollars — in the search for new cures, medications and therapies.

“We’re playing on the same field as Big Pharma,” points out Peter Talias, director of Stevens’ Center for Healthcare Innovation (CHI). “Only we’re playing at a fraction of the cost. We can do almost exactly what they can do, in terms of drug discovery, but much more quickly, at least six to 24 months faster than large pharmaceutical companies.”

And that agility might one day lead to a major medical breakthrough on Castle Point.

NARROWING MILLIONS OF CHEMICALS TO HUNDREDS

To join the hunt for new medicines, Stevens has brought two of the leading thinkers in the field, Dr. Sid Topiol and his longtime colleague Michael Sabio, to the CHI’s Biotechnology and Drug Discovery Laboratory.

Topiol was an early expert in the developing field of computational chemistry, one of the disciplines that helped spawn modern-day drug discovery, with Sabio as his collaborator for decades. Deploying a computational approach, and equipped with leading-edge hardware and software, the two are probing the structural biology of cancer, depression, anxiety and other afflictions for potentially effective therapies.

“It is as much an art as a science,” explains Topiol. “The software is a tool to rapidly crunch the numbers and automate the process of matching compounds with target proteins.”

Any and all disease areas are potential areas for inquiry at Stevens, says Topiol, although his team will focus on certain high-profile targets first.

“We will be extremely strategic in the areas we choose to investigate,” he points out. “We constantly stay connected to and current on the medical literature, and our priorities will also reflect those areas that seem most promising both for society and for potential commercial application and benefit.”

Their current oncology (cancer research) project is one promising example. The screening process works like this: Topiol and Sabio select disease “targets” and fine-tune highly specialized software to analyze millions of chemical compounds that might interact with those targets. Those first rounds of investigation typically take two to three weeks of computation, narrowing millions of candidate compounds down to tens of thousands.

“This saves years in manpower and millions of dollars in research time and expense,” notes Topiol.

Next they tap into additional software packages to further narrow the options down to just a few hundred, which are tested in a lab and often yield five to ten chemical classes. That’s a first step toward possible animal and eventual human clinical trials, and in many cases will mean working closely with Stevens’ own internal team of a dozen drug discovery biologists and pharmaceutical industry veterans.

“They do outstanding work,” lauds Topiol.

And a true breakthrough discovery isn’t out of the realm of possibility.

“Stevens is in the fairly unique position of being able to ‘jump on’ something that looks really promising right away,” says Topiol. “If you’re fortunate, one of these compounds then proves potent and effective.” ♦ — Paul Karr

Stevens Names New Provost

UNIVERSITY OF ILLINOIS VICE PRESIDENT BRINGS EXTENSIVE RESEARCH AND ADMINISTRATIVE EXPERIENCE

IN June, Stevens selected Dr. Christophe Pierre, former vice president for academic affairs at the University of Illinois, to serve in the role of provost and vice president for academic affairs at Stevens, succeeding George Korfiatis, who served for nine years in that capacity. The announcement followed a nationwide search and intensive selection process; Pierre joined Stevens Aug. 22.

Pierre will serve as the university's second-highest-ranking administrator. As chief academic officer, he will be responsible for the academic integrity of the institution, all programs and administrative offices related to the academic enterprise, and — in consultation with faculty, officers and trustees — long-range academic strategic planning, resource allocation and new initiatives. In consultation with the deans of Stevens' schools and the leaders of its centers, programs and institutes, he will lead cross-disciplinary activities and improvements and innovations in teaching and research.

Pierre will also hold an appointment as professor in the Department of Mechanical Engineering at Stevens.

"I am enormously proud and very excited that a scholar and academic administrator of the caliber of Dr. Christophe Pierre will join Stevens as provost and vice president for academic affairs," said Stevens President Nariman Farvardin. "His exemplary record of achievement as a teacher, a scholar, an academic administrator and advocate for higher education will ensure that Stevens realizes its full potential in the years ahead. I am very much looking forward to working with Dr. Pierre."

"I am deeply honored and very pleased to have the opportunity to serve as Stevens' academic leader," said Pierre. "Stevens is a superb university with a tremendous legacy, an exciting growth trajectory led by President Farvardin, and a bright future. Stevens' core emphasis

on technological innovation, together with its steadfast commitment to excellence, makes it uniquely positioned to be a global leader and to address complex technical and societal problems.

"I am eager to work in partnership with the entire faculty and with Stevens' academic and administrative leadership to help realize this compelling vision."

A CAREER OF RESEARCH AND ADMINISTRATIVE EXCELLENCE

At the University of Illinois, a state institution with three campuses serving 80,000 students, Pierre held the position of chief academic officer for the university since 2011 and served as the president's deputy, advising on matters of educational policy, academic programs, personnel, and capital and operating budgets. He was responsible for the coordination of academic planning and budgeting, working closely with academic leaders on campuses in Urbana-Champaign, Chicago and Springfield.

As a researcher, Pierre has made seminal contributions in numerous areas of mechanical and aerospace engineering, including the fields of vibrations, structural dynamics and nonlinear dynamics. He has received extensive research support from General Electric, NASA, General Motors, the National Science Foundation, the Air Force Office of Scientific Research, the U.S. Army and Pratt & Whitney Canada, among other industry and government sponsors, and authored or co-authored more than 120 research articles for refereed journals.

Prior to joining the University of Illinois, Pierre served as dean of engineering at McGill University in Montreal

from 2005 through 2011 and as associate dean for academic programs and initiatives in the University of Michigan's Horace H. Rackham School of Graduate Studies from 1999 through 2005, among other roles in higher education. He is a fellow of The American Society of Mechanical Engineers (ASME) and received ASME's N.O. Myklestad Award in 2005 for his work in vibration localization.

Pierre holds a bachelor's degree in aerospace engineering from France's École Centrale des Arts et Manufactures de Paris, a master's degree in mechanical and aerospace engineering from Princeton University and a Ph.D. in mechanical engineering and materials science from Duke University. ♦ — Paul Karr



Dr. Christophe Pierre joined Stevens as provost and vice president for academic affairs on Aug. 22.

PHOTO: JEFF VOCK

PRIDE IN THE 'RED AND GRAY' AS HUNDREDS RETURN FOR Alumni Weekend

DAVID GEORGE '96 HAS LIVED AND WORKED ABROAD FOR 15 OF THE LAST 20 YEARS SINCE HE LEFT STEVENS. NOW LIVING IN LONDON, ALL ROADS LED HIM BACK TO CASTLE POINT THIS SUMMER, WHERE HE MARKED HIS 20TH REUNION DURING ALUMNI WEEKEND.

"I literally just fell in love with the campus," he recalled, as he enjoyed the breeze off the Hudson with his classmates and other alumni and their families on the patio of the Rueterholz Admissions Center. "I'm glad that I came here — it was good for me."

George also touched upon a sense of pride and hope for Stevens that could be found among the generations gathered on campus for this one special weekend.

"It feels great to be back," George says. "I don't know how many people in my class understand the transformation happening at the school."

Tom Gibson '65 returned for his 51st reunion and to congratulate his friend and classmate Frank Semcer '65, who was honored for his extraordinary support of Stevens with a gathering on the lawn two evenings earlier. (See story on page 36.)

Gibson was a bit more direct.

"What a change! If you can't find a reason to be proud as a Stevens graduate, there's something wrong with you!"

That enthusiasm was palpable as hundreds of alumni and their families returned to campus June 3 to 5, happy to see each other and to learn more about the Stevens of today. Classes ending in "6" or "1" marked reunions, though all alumni and their families were invited to this weekend that included reunion gatherings, a family picnic, campus tours, lectures and longtime favorites like the Lollipop Run and beer and wine tastings.

More recent offerings were reunions for alumni of student organizations and a very special debut event: a performance by the New Jersey Symphony Orchestra, presented by the Class of '71.

Art Ketterer '61, who marked his 55th reunion, received the prestigious Stevens Alumni Award, for his decades of volunteer work and dedication to Stevens. Five other alumni received the Harold R. Fee '20 Alumni Achievement Award for their out-

standing service to the Alumni Association: Jeff Capone '91, Patty Torres '01, David George '96, Robert Hoar '06 and Victoria (O'Connor) Blazeski '11.

The 50th anniversary class — the Class of '66 — enjoyed a strong turnout and presented Stevens with a gift of \$10.2 million, the second largest class gift in the university's history.

"Everyone participated and worked more than I expected," said reunion chairman Gerry Osborne '66, as he spoke to his fellow classmates. "Our class stepped forward, and we have some classmates who are very generous."

President Nariman Farvardin's fifth annual "State of Stevens" address to the alumni was well received and much discussed, and alumni praised the president's openness, as he discussed Stevens' strategic plan and presented some impressive numbers to illustrate the university's progress. Some of the memorable recent statistics included the #12 ranking in the nation for best 20-year return on investment for graduates (Pay-Scale); the 95 percent career placement rate for the Class of 2015; and the 98 percent freshman retention rate.

Maria Hurtado '10 M.Eng. '12 comes back almost every year with her family to enjoy the family picnic, the kids' activities, her friends and that view.

"The view — I love being here with the good weather, and the kids love it."

"When I came here, everything was beautiful," she said. "Everyone has a high respect for Stevens."

Anthony Bastardi '66, who marked his 50th reunion, also has fond memories and affection for his classmates and alma mater — and gratitude for where Stevens has taken him.

"I find that the engineer in the room thinks differently — more organized, more logically," he said. "I've always cherished my engineering degree." ❖ — *Beth Kissinger*



Below: Art Ketterer '61 received the Stevens Alumni Award during Alumni Weekend and enjoyed the Dinner Dance with his wife, Barbara.

Opposite, top row at left: Recipients of the Harold R. Fee '20 Alumni Achievement Award, honored during the weekend, from left, were David George '96, Victoria O'Connor Blazeski '11, Patty Torres '01 and Jeff Capone '91. Rob Hoar '06 was also honored.



PHOTOS: JEFF VOOK AND AMY HAND





THE TIMES THEY ARE A-CHANGIN'

CASTLE POINT, 1966-1970

PHOTOS COURTESY OF THE LINK AND THE SENIOR BOOKLET. "DINK" PHOTO: LANCE LABUN '70

Editor's Note: This fall, the Class of 1970 marks 50 years since it first entered the Stevens campus as freshmen. Father Gabriel Costa '70 (with added insights from Howie Brecher '70) reflects on that fall of '66 — and the turbulent four years that followed for their centennial class.

For many of us who grew up in the downtown section of the Mile Square City, going to college was, indeed, a dream. And while it was only a one-mile walk from the housing projects to the Stevens campus, in truth, for me, it was like going to another world.

Every now and then, I would take a walk around the Stevens campus. I would look at the ivied buildings. I was awed at the triple complex of Morton-Peirce-Kidde; there was a contrast between the old Navy Building, which stood across the street from the new Burchard edifice. I would pass the Walker gymnasium, with its elliptical shape, while looking out onto the athletic field. I would finally make my way up to the Stevens Center, by way of Wittpenn Walk — a seemingly symbolic trek — and in my heart I would ask, “Would I ever be able to go to Stevens Tech?”

My dream would come true on a spring day in 1966.

I was sitting in a math class at Hoboken High School. The telephone — a relatively new addition to our classrooms back then — rang, and our teacher, Miss Tyrell, answered it. After she hung up, she directed me to go to the office of Mr. Thomas Gaynor '32, the principal of our school.

When I arrived at his office, Mr. Gaynor informed me that I had been awarded a four-year scholarship to Stevens.

And so, my life changed. I was going to Stevens Tech! I was going to be a civil engineer ... I was going to build bridges and tunnels.

And I wouldn't be alone. In addition to myself, there were four



▲ Father Gabriel Costa, above, and Howie Brecher, top, far left, from the 1970 Link.

other Hoboken High School graduates who would enter Stevens in the fall of 1966: Buddy Klinesmith, Frankie Lenge, Norby Machado and Ralphie Terminiello.

As the summer of 1966 came to a close, the freshman class was required to attend a three-day orientation program. (By the way, female students would not be admitted at the undergraduate level until 1971). During these three days, we were given ID cards and “dinks” (small beanie hats) and learned the Alma Mater and the Stevens Fight Song. We were also told that approximately one-third of our 400-plus freshman class would not graduate. That was a little unsettling to me. Finally, it was also noted that we — the Class of 1970 — comprised the centennial class.

I was ready, excited and anxious to begin this new phase of my life.

While I did not know what the future would bring, I was certainly aware of current events.

The year 1966 was the middle of the sometimes wonderful and many times turbulent Sixties. There was wonder and fear and unrest — and an underlying sense of hope. Some of the mega-events before 1966 were the inauguration of John F. Kennedy as our 35th president and his charismatic spearheading of the “New Frontier”; the Cold War and the Cuban Missile Crisis; the British Invasion in the music world; the Sexual Revolution; the Peace Corps; the Civil Rights Act (1964) and the Freedom March (1965).

And, of course, the assassination of President Kennedy in 1963. During our time at Castle Point, we suffered through two more assassinations, the Rev. Dr. Martin Luther King Jr. and Senator Robert F. Kennedy, both in 1968, and we also saw the escalation of the Vietnam conflict.

When Martin Luther King was assassinated on April 4, 1968, I — and so many others on campus — felt a profound sense of sadness, more sadness than anger. Bobby Kennedy would die only two months later, when we were away on summer break. In a sense, we had never really gotten over President Kennedy's assassination, so when Bobby was running for president, there was a sense of excitement for another Kennedy in office. When he was also killed, there was a heart-breaking sense of "Here we go again."

Vietnam and the anxiety of facing the draft perhaps loomed largest of all. I remember the day that I went for my required Army physical in Newark, New Jersey — April 9, 1970. Good Friday. I passed, but had drawn a high lottery number and was never drafted.

We students were keenly aware that if we failed out of Stevens, the draft was likely our next step. I remember taking a break during a tough math exam. I discovered a classmate, who had been struggling with the class, crying in the bathroom. We all were afraid.

Howie Brecher, our class president, remembers that 1966 was "the last year of quiet" — when there were few drugs and little social consciousness or opposition to the war. By 1970, there had been a "sea change" — wide opposition to the war, wider availability of drugs and greater social consciousness among students.

"All of a sudden, there was political awareness," he says. "All of a sudden, there was an awareness of being drafted."

Howie also recalls the fear of being drafted during those days, and the pressure to pass your classes.

"If you flunked out, you were dead meat," he says. "There was tremendous pressure." Among his friends, "none of us went to Vietnam, but we all know people who did."

He recalls some anti-war demonstrations on campus, but they were always non-violent and subdued compared to other college campuses.

"The tipping point was the Kent State massacre," he says. On May 4, 1970, Ohio National Guardsmen shot and killed four students during a peaceful anti-war demonstration on the Ohio campus. When the news reached Stevens, students started gathering and what began as a vigil became a several-day sit-in inside the Stevens Center lobby. The campus shut down for several days. There was no violence.



"Just anger, sadness, fear," Howie recalls. "How can this be happening in the United States?" Exams and graduation later proceeded, with many students wearing arm bands with peace symbols.

For Howie and me — for so many of us — there was much reflection and introspection during these years. Personally, I was asking myself a lot of questions about God and my future. I had put building bridges and tunnels behind me and was learning more about series solutions to differential equations, complex variables and group theory from many gifted mathematics professors.

As the end of my undergraduate days approached, I felt a sense of accomplishment and I felt prepared for the next phase of my life — yet not ready for a "lifetime commitment." So, I decided to remain at Stevens to pursue a master's degree in mathematics.

Throughout the years, a number of my Stevens undergraduate classmates have gone on to obtain degrees in business, law and medicine. Virtually all have agreed that having gone through the rigors of a science-engineering program, they were well prepared for these further studies. I found that the same was true with regard to my courses in theology. The discipline and logic of my mathematical training was very helpful as I began my journey toward the priesthood. Indeed, there are certainly similarities between the concept of infinity and the reality of eternity.

By the grace of God, I was ordained a priest on May 26, 1979. I intended to work in a parish while, perhaps, teaching a math course or two in the parish school.

But the Lord had other plans.

Archbishop Peter L. Gerety assigned me to Seton Hall University in 1980. This was with the understanding that I obtain my doctorate in mathematics.

I applied to only one school.

Thirty-two years later, as I look back, I count my blessings. It has been a trip through hardship (*aspera*) to the stars (*astra*). To have been a priest and a mathematics professor — having taught at both Stevens Tech and Fairleigh Dickinson University earlier in my career and, presently, at Seton Hall University and at West Point — has been a dream come true.

Fifty years later, I am still living the dream — the dream which had its roots on Third and Jackson streets and which began its fulfillment at Castle Point. ♦ — *Father Gabriel B. Costa*



About the Author: Father Gabriel B. Costa '70 M.S. '72 Ph.D. '84 is a Roman Catholic priest serving the Archdiocese of Newark, New Jersey. He is a member of the Department of Mathematics and Computer Science at Seton Hall University. He is currently on an extended academic leave serving at the United States Military Academy at West Point, New York, where he is an associate chaplain and professor of mathematical sciences. He can be reached at Gabriel.Costa@shu.edu or Gabriel.Costa@usma.edu.

ALUMNI PROFILE

CLASS OF '75 ALUMNA IS A LEADING FIGURE IN MARYLAND'S LIFE SCIENCES AND TECHNOLOGY INDUSTRIES

PAVING THE WAY



Being a trailblazer was never a life goal for Martha Connolly '75. Yet her illustrious career in the biosciences as a researcher, advocate and entrepreneur is one that is characterized by a series of "firsts."

Connolly serves as director of a bioentrepreneurship program in the Maryland Technology Enterprise Institute (Mtech) at the University of Maryland, helping to launch and create startup companies based on faculty and student research discoveries.

She has been a leader in the Maryland life sciences community for more than 25 years, and was the first person to be designated as the state's biotechnology industry representative in 1997. It was a role that helped plant the seeds of what is now a critical economic driver for the state.

"The industry really started to explode by 2000. It was around that time when we put Maryland on the map in the international bio community as the place where the human genome was sequenced," she said.

Connolly was honored for her outstanding contributions to scientific communities, private enterprise and economic development in 2013 when she was inducted into the American Institute for Medical and Biologi-

cal Engineering's College of Fellows.

For Connolly, forging new ground is a role she has embraced throughout her life and career. This mother of three daughters helped break the gender barrier as a member of the first undergraduate class of women entering Stevens in 1971.

Connolly, however, was not the first in her family to attend Stevens. That distinction belongs to her uncle, Karl Schlachter '45. Her younger sister Patricia Connolly Callahan '77 would later add to the family's Stevens legacy.

"Oftentimes I was the first one called to the board. When you're in a class of 30, and 29 are guys, you're going to stand out. We definitely had some academic pressure on us to succeed." — Martha Connolly '75

The high school standout from Nanuet, New York, chose Stevens over MIT, Princeton and Rensselaer Polytechnic Institute after a campus tour given personally by then Dean of Admissions Robert Seavy M.S. '48.

"As we walked around campus, I noticed that he knew every student by name, asking each one, 'How are you doing in chemistry?' and so forth. I was so impressed by the intimate quality of the school and the personal

attention that students received at the undergraduate level. I didn't imagine that I would get something that individualized and personal anywhere else."

The presence of Connolly and her fellow female classmates did not go unnoticed at the historically all-male school, and Connolly admits that they felt the responsibility that came with the scrutiny.

"Oftentimes I was the first one called to the board. When you're in a class of 30, and 29 are guys, you're going to stand out. We

definitely had some academic pressure on us to succeed."

Connolly says it never occurred to her that her gender could pose an obstacle to career opportunity or mobility. Her parents, both teachers, raised their two daughters to believe they "could do anything they wanted to do."

"My father was a fifth-grade teacher and my mother was a mathematician. So there was never such a thing as 'Girls can't do math.'

◀ Martha Connolly '75 directs a bioentrepreneurship program with the University of Maryland and is a longtime leader in the state's life sciences community.

That wasn't going to cut it in my family."

She studied chemistry and physics, but was drawn to biomedical engineering, taking any course that contained biology.

"There is a level of complexity in biology that I found intriguing: You can do something to something today and get one response, but get a different response if you do the same input tomorrow. That's not the way chemistry behaves, or the way physics behaves necessarily. I thought I could spend a lifetime studying about this stuff and never really figure it all out."

Connolly balanced the rigors of academic life by indulging in her passion for music as a member of the Stevens Concert Band (clarinet) and the Women's Glee Club. She has fond memories of Bill Ondrick, the music professor at Stevens at the time.

"He was a big influence for me and a father figure to many," she recalled.

She continues to showcase her musical talents to this day. She sings in a local a cappella group, and performs Bach as a member of a Baltimore classical group.

After graduating from Stevens, Connolly achieved another "first" when she went on to become the first woman to earn a Ph.D. in biomedical engineering from The Johns Hop-



▲ Connolly at Castle Point, where she was a member of the first class of undergraduate women.

kins University. Her undergraduate education at Stevens prepared her well for the multidisciplinary five-year doctoral program, she says.

"At Hopkins we were very focused on applying rigorous engineering to the study of how things worked in the body," she explained. "I learned the rigor of questioning assumptions and how to approach problem solving at Stevens."

Connolly's association with the University of Maryland has come full circle in many ways. Her career began there as a faculty member and director of a research laboratory funded by the National Institutes of Health and the American Lung Association

in the area of cardiovascular systems physiology and bioengineering. She would eventually transition into the school's technology transfer office.

Additionally, Connolly has directed business development activities at a publicly traded biopharmaceutical company, and co-founded a startup technology development and commercialization firm.

As she takes stock of her extraordinary career in industry, academia and government, Connolly herself acknowledges the rarity of achieving that trifecta. And as someone who has had to bridge those three very different cultures, she sums up their philosophical differences this way:

"Companies think of things in three-month cycles, professors think of things in three-year granting cycles, and government is often dictated by the election cycle."

What her experiences have taught her, she says, is that a single person can make a difference.

"Initiatives happen because one person picks up a flag and says 'Let's all do this.'"

Getting others to go along is a matter of convincing people that "you matter in the conversation," she advises.

"You don't say it directly, but one of the tricks I use is to say something authoritative but highly technical. That's when the heads turn, because it dawns on them that I know what I'm talking about and that it will benefit them to pay attention." ♦ — Young Soo Yang

▼ Connolly, third from right, visits with some of her entrepreneurial students.



ALUMNI PROFILE

A PASSIONATE PURSUIT

LOVE OF SCIENCE DRIVES MERCK RESEARCHER

Suzanne D'Addio '07 embraces this truth — that the love of her life right now is science.

Whenever she can, she leads her friends' children in fun science experiments, often exploring the chemistry of everyday life, just as she did as a child.

When she's not at work, as an associate principal scientist at Merck in Kenilworth, New Jersey, she maintains a "command center" inside her kitchen, at home in North Plainfield, New Jersey. Here, she's set up her computer, sometimes poring over data during dinner. There's a home office too, where she ponders scientific questions posed by her boss and explores the research, sometimes long into the night.

This Princeton Ph.D. is driven to do good science, and to answer the challenges to helping create medicines that improve lives.

"That curiosity is very important to what I do," she says. "It's my passion now. I want to drive it."

D'Addio joined Merck in 2013 and works on a large team of researchers, most of them Ph.D.s like herself, on sterile injectable formulations. They focus on defining clinical and market formulations of new drugs administered by non-oral routes, which could include intramuscular injections, intravenous infusions or implantation. Collaborating with other teams, they identify these formulations, the process for creating them and the technology transfer to manufacturing facilities. Their important work helps make it possible for new drugs to be dosed in clinical studies to determine if they are safe and effective. Their teams also enable patients to actually take the medicines they need, once these medicines make it to market.

"Improving human health — at the end of the day, that's the great vision," D'Addio says.

But her true joy, she says, is doing great science.

"It's taking the skills that were developed in col-

lege and graduate school and that ability to identify and solve problems, and applying it here to problems — practical problems," she says.

One recent summer day on Merck's Kenilworth research campus, D'Addio reflected on her life as a scientist — which has taken her from Castle Point to Princeton to Australia and to one of the world's pharmaceutical powerhouses.

She's thriving in this fast-paced environment of talented scientists and tells stories of running to her colleagues' labs to share exciting results.

"We enjoy the fruits of working hard and we enjoy sharing it with each other and sharing the science with each other," she says. So far, D'Addio has 12 scientific journal publications under her belt.

D'Addio received a research fellowship in 2010 to the University of Sydney, with her research resulting in two peer-reviewed publications and laying the groundwork for a recently published study of aerosol nanomatrix particles in animals.

In 2012, she won an Endeavor Research Fellowship to conduct postdoctoral research at the University of Queensland in Brisbane, Australia. Her research focused on the study of suspensions, particularly how to modify the surface of the particles to improve the process of rapid, low-cost DNA sequencing.

Stevens nurtured her work ethic and independence in the lab, she says. At Princeton, where she earned both a master's and Ph.D. in chemical engineering, she further thrived, working for Bob Prud'homme, a particle research expert, battling through tough courses, studying Shakespeare and excelling in the lab. The story of her grandparents — strolling the Princeton campus one day in 1952, they came upon Albert Einstein — inspired her to apply.

She fell in love with the laboratories of Princeton

▲ Suzanne D'Addio '07 enjoys science with friends Harley, left, and Madison Lester as they create a corn starch mixture to learn about dilatant materials, or shear-thickening liquids.

— the old halls of the science buildings, the chemical smells, the tinkering and creating in the lab, where she's always felt at home.

As an academic, researcher and woman in STEM, she can identify many role models — and never had to look farther than her own front door. Her mother and aunt are high school chemistry and physics teachers, her father a Ph.D. analytical chemist with several patents.

D'Addio first saw the gender gap in engineering and science at Stevens, though at Castle Point and at Princeton, she always enjoyed equal treatment, she says. But out in the work world, she did feel some implicit gender bias.

Driven by the conviction that both girls and boys need to see women working as scientists and engineers, D'Addio has spoken at several New Jersey grammar schools and high schools about her work and why she loves it.

"Just raising the awareness can do so much," she says.

She can see herself someday "retiring" and becoming a college professor. Of course, her current dream is to see a research program that she works on become a commercial product. Outside the lab D'Addio enjoys softball with her co-workers, rock concerts and travel.

But on this late Friday afternoon in July, D'Addio's work is not done. She will stop by the lab to run another experiment and hope for some results over the weekend. She is full of gratitude.

"All through my life, I have had a great support system that made everything possible," she says. ❖

— Beth Kissinger

Editor's Note: Suzanne D'Addio is a Merck employee. The opinions that she expresses in this story are her own and do not necessarily represent the position of her employer.

PHOTO: KRISTEN LESTER

TAKING HER OWN ADVICE

ALUMNA PRACTICES WHAT SHE PREACHES

Before she even begins talking about herself, you already know LeTisha Shaw '99 is proud of where she's been and excited for where she has yet to go. Her voice is that *full* of optimism.

As a senior manager for piracy intelligence at Walt Disney Studios in Burbank, California, Shaw's role focuses on understanding the business impact of unauthorized movie watching, characterizing the consumer behaviors that drive it and providing insights to develop strategies that minimize the impact of these behaviors.

"It's an interesting role because there's always something new to learn in digital media — consumer behaviors are changing as technology enables movies to become more accessible across screens and connected devices," she says. In her role at Disney, Shaw also spearheads the Studio Technology Academy which fosters a community for employees to embrace continued growth and development.

It's a good fit for Shaw, whose personal interests and future ambitions range from developing non-chemical hair products for curly-haired women to writing a book of self-development tips. "I'm lucky I've had instrumental mentors who've guided me throughout my career. As a former engineer, when I see a

need, I want to help people develop a solution. Similar to a life coach, but not necessarily in the traditional sense," Shaw says.

In an effort to jump-start her non-traditional life coach journey, here is Shaw's story so far, as told through the advice she would give to her younger self.

Get advice from those you trust because they can provide a valuable perspective you might not be able to see.

It was a new high school guidance counselor who put Stevens on Shaw's radar during her junior year. "She told me I should study engineering in college. Initially, I was apprehensive because my father was a mechanical engineer and I didn't want to be like my dad, but my counselor suggested I take a summer program at Rutgers and if I liked it, she suggested I apply to Stevens." Shaw took her counselor's advice, and is grateful for it.

Shaw credits her time at Castle Point with teaching her to think critically, lead teams and manage expectations and time. "People ask if I use my ME (mechanical engineering) degree and I say 'Yes, every day,' because I learned the methodology on how to learn, structure problems and solve them," she says.

It's okay to be humble but never underestimate your abilities.

"It was at Stevens where I gained the confidence that there isn't any problem I'm not able to solve," Shaw says. "Whether I do it myself or find the right person to help, it can be done."

Shaw stretched her wings on campus, where she was active in STEP as a mentor and tutor, co-captain of the soccer and basketball teams, and took on leadership roles as a member of Khoda and president of the Black Student Union.

"I realized I had a knack for leading organizations and

thrived on creating high-performing teams," she says.

Shaw puts those skills to use today, facilitating workshops for fellow Disney employees and managing cross-functional partnerships, both inside and outside of the company.

Work Hard! Study Hard! Play Hard! Do the best you can and take time to refuel.

Shaw knows the value of stepping away from work and allowing the creative juices to flow. She says that some of her best ideas come to her when she's running, hiking or dancing. "Physical activity and music often inspire me; I get in the zone salsa dancing," she says. "It's technical, yet there are elements that force me to be in the moment, connect with my partner's energy and then transfer it back. The ability to constantly improvise and co-create a work of art is truly special ... creativity and innovation go hand-in-hand."

Be patient. You don't have to have it all figured out right now.

Shaw's journey has never been limited to a linear path — and that's fine by her.

She received a master's degree in mechanical engineering from Stanford in 2001 and then worked at Merck in manufacturing operations and business planning roles, while moonlighting at ABC Sports, where she worked as a video effects operator. In 2009, she earned an MBA from the University of Michigan and then landed at Disney, where she's been ever since. And while she enjoys her job and the challenges it presents, she knows there's always room for growth.

"It's no secret that I have an entrepreneurial spirit, and am interested in taking on different business challenges. I see my career moving in a direction towards developing go-to-market strategies, launching digital products and services to enhance customer experiences and managing the business from end to end," she says. "Following a non-traditional career path makes life interesting. As long as I am giving it my best shot, everything should work itself out in the end." ♦ — *Rebecca Markley*

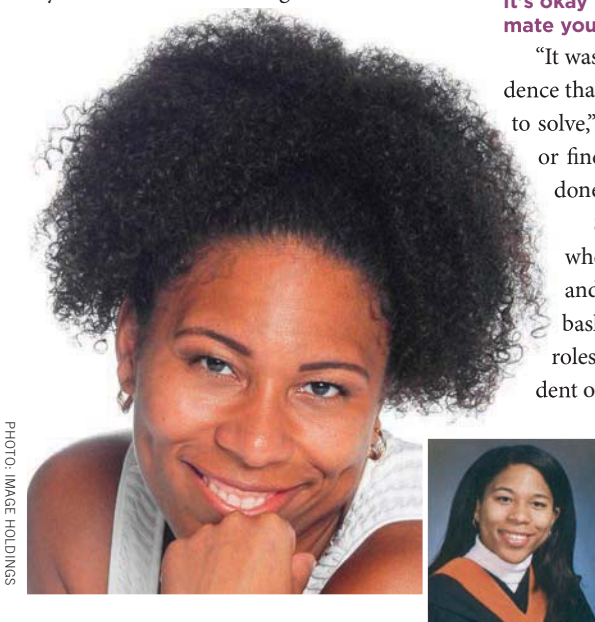


PHOTO: IMAGE HOLDINGS

LeTisha Shaw '99 today, left, and in her *Link* yearbook photo, inset.

ALUMNI PROFILE

PEACE CORPS VOLUNTEER TEACHES, LEARNS FROM LIFE IN MOZAMBIQUE

OUT OF AFRICA

For Drew Capone '13, it's a typical day in Massingir, Mozambique. He has taught chemistry to his sometimes heroic, sometimes irritating 8th and 9th graders. After work, he stopped to pick up a few groceries. When reached by Skype one late afternoon earlier this summer, he was contemplating dinner.

Now into his second and final year of his 27-month assignment in Mozambique in southern East Africa, this Peace Corps volunteer is thousands of miles from home in Hoboken, New Jersey, and even farther away from his life as a striving young chemical engineer, making cosmetics for L'Oréal.

The contrasts to his former life — and his current one — are startling. While his job at L'Oréal was intellectually challenging, here he confronts different challenges. He teaches 50 children — he once had 70, a “sea of children” — in a bare classroom with a single chalkboard. His home is a simple flat perched in the red/brown mud, and water is available sometimes twice a day, sometimes less, when a tank is filled about a half-kilometer away and a bell is sounded. (He readily admits that poachers provide him extra needed water.) Most of his students are poor and live with limited food, educational and economic opportunities. In their town, 30 percent of the population is HIV-positive. The pace of change — and of life — is slow, too slow at times for Capone.

But with this new life of no Netflix, limited water and no giant grocery stores, he finds that he's more content and has learned to slow down. Like any good teacher, he finds inspiration — and heroes — among his students.

He tells the story of Adolfo Siteo, 13, who was determined to take Capone's lesson on making efficient new rocket stoves of mud bricks and improve the design to replace his family's archaic cooking stove. Adolfo and Capone worked on the project for many hours on a Saturday, but couldn't find enough mud bricks. Adolfo later searched all over town until he found the needed bricks, then built the stove for his mother, showed her how to use it, and found many more bricks to make more stoves for his neighbors.

“My kids give me hope. I hope that there will be future generations calling out for change. So many good kids. So many want to try,” Capone says.

In a country that has endured drought and corruption, political upheaval and AIDS, the people he meets have little bother for everyday irritations.

“No one is worried,” Capone says. “They know that they have survived worse.”

It's been a year and a half of monumental challenges, small victories, loneliness and tranquility for the 25-year-old native of Long Valley, New Jersey. Some of it, he has captured on his blog, drewcapone.wordpress.com, where he's gracefully chronicled his journey over the past 24 months, often with startling honesty.

When you speak with him, Capone is outspoken, passionate, at times outraged and other times inspired. One weekend in June, he led preparations for the province's science fair. Capone coordinates the fair on a national level, for the country's 10 provinces.

His students did well, but the teachers who promised to complete the paperwork for them to move on to nationals failed to do so, so they can't advance. You can hear the frustration in his voice.

There's a 20-year vision to improve science teaching in Mozambique, which now relies mostly on rote learning. So Capone does everything he can to make science real and applicable to everyday life.

Many of the science fairs offer HIV testing, so to use science to teach about HIV prevention and spark students' interest, Capone and his group tried something new this year. Some experiments: how much water will fill a condom, floating condoms under water, even stretching them over a broomstick. This makes sense in a town where 30 percent of the population is HIV-positive and misinformation about the virus still exists, he says.

The roots of Capone's passion for public service run deep. His Christian faith and its call to serve others have played a role, he says.

At the end of his freshman year at Stevens, Capone volunteered with the non-profit Beyond the Walls, traveling to Guatemala every summer during college to work with people who lived near



and made their living from urban garbage dumps, with projects to assist them with housing and education. His time in the country made an impact.

“People live like this — it shapes the way that you see the world,” he says. “I wanted to get that experience on a longer level. It was the next level of solidarity with those in need.”

During his Stevens years, Capone was also active with Hoboken Grace Community Church, serving as community service director, collecting food for The Hoboken Shelter and other projects.

He took the job with L’Oréal because it was the expected career path — and he was afraid, he says. He was making a lot of money and finding professional success, but felt a sense of discom-

▲ Life in and around Massingir, Mozambique, where Peace Corps volunteer Drew Capone '13 teaches chemistry. At top row, center, his students take a break, and one particularly memorable student, Adolfo Siteo, at far right, presents his mother with his homemade rocket stove. Photos courtesy of Drew Capone.

fort. His mentor from his church asked him: “Why are you still here?” Capone faced his fears and decided to follow a call to serve.

“I had this dream,” he says. “If I don’t do it now, I’ll never do it.”

The path has been rocky at times. His first placement, in the beautiful but isolated town of Mabalane, Mozambique, was very difficult, with no doors on the school house, bats inside the classroom and very few resources. Few people spoke Portuguese, the official language of the country that Capone has learned as a volunteer.

Massingir has more resources, and school attendance is much stronger. During his time in Mozambique, he has been robbed twice. His eyes have opened to the world, he says, and he has more faith in children than in adults. But there are moments.

“Here, people look out for each other. You kind of learn to rely on your neighbors and rely on one another. You have a wheelbarrow, I don’t. You share with your neighbors.”

Capone has not settled on any plans for when he returns to the U.S. in December. He may pursue a master’s in environmental engineering or hydrology. Seeing drought and the effects of global warming and water shortages in Mozambique, he wants to get his master’s to learn more about ways to help, he says.

What he’ll never forget are certain people of Mozambique, especially his students: the boy who walked for an hour to visit and sit with him, without saying a word; Adolfo searching for hours for mud bricks; parents who brought him rice and melons.

“It’s a lot of little moments with my students and with wonderful people in the community that make it all worth it,” he says. ❖ — Beth Kissinger

◀ Capone teaches chemistry to his 8th and 9th graders in Massingir, Mozambique.



ALUMNI PROFILE

CALIFORNIA DREAMIN'

ALUMNUS SCRIPTS HIS OWN HOLLYWOOD STORY

"If you're the same man in six months, I'd marry you."

Sam Ghosh '06 thought it was a bit much for a first date (which only happened because of an accidental right swipe on the dating app Bumble), but he agreed to a second date, at which point he met her "pack" — an infant, four dogs, three foster dogs, two cats and two additional foster cats.

"We quickly had a conversation and I told her 'You come with a lot,'" he says. "A month later, I knew she was my person and that this was my family."

She is Emily, and in June 2016, six months after their first date, she and Ghosh married. In keeping with the unorthodox approach to their relationship, they had an intimate ceremony shared with thousands of friends.

"We wanted a little wedding with family and close friends, and we also wanted to try and keep costs down as much as possible. Because we have family all over the world, we livestreamed the wedding. There were about 2,200 views."

Such is life with Sam Ghosh.

**

Born in India and raised in Wayne, New Jersey, Ghosh is now based out of Los Angeles where he balances family life, the entertainment industry and Live Love, an animal care and rescue startup. The common thread in all his endeavors is that he wants to do things differently.

"If it's already figured out and being done well, there's no point in me being involved," he

says. "I'm always looking for how I can make a change and how I can create something that represents the underrepresented — people or animals — who don't have a voice."

Live Love takes much of his time, as he not only restructured the business when he joined this past February, but also because he is on the front lines, walking dogs and hosting adoption events.

"Emily had been rescuing animals for more than a decade, and five years ago she started Live Love, running a for-profit pet care business and a nonprofit rescue separately. As you can imagine, the demand for rescue far outweighs the demand for care, so it was building debt," Ghosh says. Having worked with other startups, he knew he could help. "I came on as partner and chief creative officer and we started working on rebuilding from the ground up. We rehauled it to make it something that we can scale where we can really have an impact.

The revamped model allows our clients to be benefactors so that \$5 from every service — every walk, overnight stay, pet-sitting — goes directly to the rescue, a 501(c)(3) nonprofit."

While developing the new structure of Live Love, Ghosh drew directly from his time at Castle Point. "There were some classes that I was really excited about — business planning is one. Creating the plan for Live Love was taken directly from my time at Stevens," he says. Ghosh, who was an RA, tour guide and VP of Gear and Triangle, maintains that even though academics weren't always his primary focus, "the professors knew I was involved and that I was going to be OK."

One such professor is Dr. George Calhoun, whom Ghosh recently saw at an alumni event in Southern California. "We said a quick 'Hello' to each other at the beginning of the event, but when Calhoun went to start his PowerPoint presentation, it wasn't working. I got up and

PHOTOS FROM LEFT: NBCUNIVERSAL, INC.; THEO & JULIET PHOTOGRAPHY; NIRALI SHASTRI HILL



PHOTO: SOCAL HELPFUL HONDA DEALERS

Emily, Ghosh and the Live Love team at the SoCal Helpful Honda Pet Adoption event at Rosie's Dog Beach in Long Beach, California, in March. ►



Opposite Page: At left, Sam Ghosh '06 performs at an NBC Diversity Showcase. Center, Ghosh. At right, Ghosh at his wedding to Emily, which was livestreamed to more than 2,000 viewers. Above: Ghosh performs in "If Gandhi Took a Yoga Class," a CollegeHumor skit that has more than 20 million views to date.

helped him and he said to the crowd "That's my former student.' He was so sweet about it and remembered my name and I didn't even do great in his class," Ghosh recalls. "We had such a great rapport and it was a great feeling to reconnect."

Ghosh also took other types of classes during his time at Stevens. "The summer between my junior and senior year, I took a six-week acting intensive at the William Esper Studio in NYC and then started going to acting school in my senior year. During Christmas break, I was offered a position at Accenture but turned it down," he says. Instead, Ghosh attended his second year of acting school and paid the bills by driving a pedicab and working as an interpreter (he speaks Hindi and Bengali) for patients in a maximum security prison psychiatric ward.

He continued pursuing his acting career when he moved to Los Angeles in 2011. And when the opportunities weren't there, he decided to make his own. "Wayne wasn't really

diverse, and I was always aware of the disparity — socioeconomic disparity, racial disparity — and it made me want to get into entertainment because I didn't see people like me on TV who weren't either nerdy or asexual," he says. "I auditioned for three years but Hollywood is a homogeneous community and I couldn't let it determine my fate ... I couldn't let them determine my voice. So I started writing my own material and working on my own things."

One project Ghosh couldn't pass up and did audition for was "If Gandhi Took a Yoga Class." (<https://www.youtube.com/watch?v=hBMc9s8oDWE>) "I read the script and knew I had to play this part so I dressed like Gandhi for the audition — just walking down Hollywood Boulevard, dressed like Gandhi — because I knew I had to hit it out of the park," he says. He did, and the CollegeHumor short has accumulated more than 20 million views on Facebook and YouTube to date.

Ghosh is now writing a TV show, which he describes as a "dark comedy, 'Wonder Years'-y type. It's a truly American, semi-autobiographical story about a child whose family is running a Bollywood Blockbuster out of their house." He also recently launched (w)idiot, which he describes as a "creative studio that pushes boundaries...and buttons," and, of course, there's Live Love and his life with Emily, their daughter Auranya and their pack of five dogs, two cats, two foster dogs and two foster cats.

"I'm so thankful for everything that's happened so far and while none of it came easy — and it still isn't — I'm grateful to tell my story, especially if it can help an abandoned animal or prevent a kid from being made fun of in school," he says. "I've always taken the odd way, the path less traveled, and I hope that can inspire others." ❖ — *Rebecca Markley*

Steve Shulman '62 M.S. '63 Hon. D.Eng. '02, a former Stevens trustee, has joined Shipston Equity Holdings, a private investment firm specializing in the industrial sector, to chair its newly formed Acquisitions and Capital Allocation Committee. Shulman's career extends across a number of sectors, including auto, materials and manufacturing. Since 1984, he has been president of The Hampton Group, his wholly owned company, and he is a director of GeNO LLC and MTI, two medical device manufacturers, and Ark Restaurants, a publicly traded restaurant holding company.

Solix Inc., a provider of program management, regulatory compliance and customer care services throughout the U.S., recently announced that **Brian J. Dunlap MMS '87** has been appointed senior vice president and chief sales officer. Dunlap most recently served as managing director of global strategic major accounts and financial industry sales at NCR Corp. and has held executive positions at CIT Group, AT&T, General Electric Capital Corp. and Lucent Technologies.

Sandeep L. Mathrani '83 MMS '83 M.Eng. '86 Hon. D.Eng. '11, CEO and director of General Growth Properties Inc., has been elected to the board of Host Hotels & Resorts, an S&P 500 and Fortune 500 company that is the largest lodging real estate investment trust and one of the largest owners of luxury and upper-upscale hotels. Mathrani was tapped for his more than 20 years in the real estate industry, as well as his expertise and leadership abilities.

M&T Bank Corp. recently elected **Edward Amoroso M.S. '86 Ph.D. '92** to its board of directors. Amoroso has 31 years of cyber and information security experience, including 18 years as AT&T's senior-most security and compliance executive where he served as chief security officer from 2005 to 2016 and chief information security officer from 1997 to 2005. Prior to AT&T, Amoroso was a software engineer and manager at Bell Labs. He is the author of six books and 50 technical publications on cybersecurity, and holds 10 patents. He is also a longtime adjunct professor at Stevens.

John C. Byrne Ph.D. '04 will serve as the Special Faculty Trustee to the Pace University Board of Trustees. He is a professor and graduate chair at Pace's Lubin School of Business in the Department of Management and Management Science. Prior to his academic career, Byrne spent more than 30 years in several technology fields, including biotechnology, electronic instrument manufacturing and precision optics. He currently maintains a consulting practice focused on the pharmaceutical and biotechnology industries.

Selective Insurance Company of America, a subsidiary of Selective Insurance Group Inc., a holding company for ten property and casualty insurance companies, appointed **David Zweier '01 M.Eng. '10** to assistant vice president, program manager. Prior to joining Selective this past April, Zweier was a project manager at KPMG. In addition to his degrees, he also holds a graduate certificate in project management from Stevens.

AN ENDURING GENEROSITY

Campaign Gift From Mary Jane And Frank Semcer '65 Continues Longtime Commitment To Stevens

Familiar names adorn the Stevens campus, starting with the founding family, then marking the legacies of a Howe, the DeBauns, a Canavan and others, and since joined by signs honoring a Babbio, a Hanlon and a married pair named Ruesterholz. Soon, Stevens will add another notable name, Semcer, recognizing one of the most generous alumni in the university's history and celebrating a monumental gift during *The Power of Stevens* fundraising campaign.

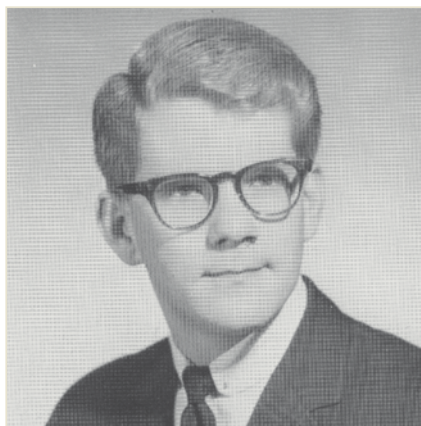
Indeed, Frank Semcer's name has reverberated across Castle Point ever since he enrolled as an affable freshman in 1961. Even after he graduated four years later, Semcer '65 would return to Stevens often, especially to visit the Keuffel House, home to his cherished Theta Xi. The fraternity brothers these days still tell pledges they should look forward to meeting big brother Frank.

Showing immense pride in his alma mater, Frank now returns to serve as a trustee and attend reunions, special lectures and other events. He has been generous with his time, his advice and his philanthropy — his ways of giving back to a place he says shaped him for success.

"The four years I was at Stevens gave me the foundation for my career," Semcer says. "It was problem-solving, innovation, entrepreneurship and hard work. Hard work gave me the opportunity to graduate from this wonderful college, which I absolutely love."

Semcer is chairman of MICRO, a precision metal stamping company with global clients in the medical device, automotive, aerospace and electronics industries. Based in Somerset, New Jersey, and with offices in Florida, Singapore and Korea, MICRO employs 350 people.

Through MICRO and the Stevens co-op program, Semcer has given opportunities to numerous students, including Steven Jacobsen '08 M.Eng. '12, a Theta Xi brother who interned at MICRO and now



Frank Semcer, in the '65 Link

works for the company as an engineering manager. "My career would not have been possible without the help of Frank Semcer and his unwavering commitment and mentorship to the students of Stevens," Jacobsen says.

"The co-op program, which I really believe in, gives you the chance to get your hands into the work and discover what you love," Semcer says.

As an energetic advocate for Stevens, Semcer has earned admiration from his fellow trustees. "When we're in a board meeting and we have challenges, I always look over to Frank," said Chairman Virginia Ruesterholz '83 Hon. D.Eng. '08. "He has two things going for him:

a twinkle in his eye and a very big grin. I always know, when I see those two things, we're going to make great things happen."

With his wife, Mary Jane, Semcer raised six children and later welcomed 16 grandchildren. He and Mary Jane now split their time between homes in New Jersey and Bonita Springs, Florida, where they have hosted several alumni luncheons and other events.

Semcer, recipient of the 1985 Harold R. Fee '20 Alumni Achievement Award and the 2010 Honor Award in Innovation and Entrepreneurship, has supported several scholarship funds, including ones named for the Class of 1965, the Class of 1930 and Theta Xi, among others. He has also been a featured sponsor of the annual Awards Gala, the 125th Anniversary Fund, and funds to renovate Edwin A. Stevens Hall and the Keuffel House. Additionally, Mary Jane, beloved on campus in her own right, especially by Theta Xi for her care of the brothers and the Keuffel House, celebrated Semcer's birthday with a gift to the Historic Preservation Fund that restored *De Divina Proportione*, a rare 1509 book of drawings by Leonardo da Vinci now on display in the S.C. Williams Library.

The Semcers' most recent contribution is a leading gift of *The Power*

of Stevens, the most ambitious fundraising campaign in the university's history, with a goal of raising \$150 million between 2013 and 2018 to ensure Stevens has the resources to fulfill its strategic vision.

The new gift contributes to all three campaign priorities: sparking Student Success, enabling Faculty Excellence and constructing a Vibrant Campus. It will fund a faculty chair for the Center for Healthcare Innovation (CHI), where researchers probing drug discovery, disease mapping, tissue regeneration and healthcare delivery hope to improve the lives of millions (see "Good for Your Health" on page 14). A new fund, the Mary Jane and Frank Semcer Scholarship, will benefit undergraduate and graduate students working with the CHI.

The Semcer name will also headline the CHI's new Multi-Disciplinary Tissue Engineering Lab when the Academic Gateway opens, scheduled for the spring 2019 semester. "This is going to be a state-of-the-art facility that will allow us to leverage the skills of our faculty and almost 40 undergraduate and postgraduate researchers in multidisciplinary projects that will hopefully change the face of medicine," said Dr. Peter Tolia, director of the CHI.

During an Alumni Weekend reception honoring the Semcers this past June, President Farvardin told the gift's origin story.

"Frank asked about the campaign, and we said it would focus on

raising support for students in the form of scholarships. He liked that, because he cares about students; he cares about educating young people. He then asked what else, and we said we are also trying to bring the best professors to this university. He said he liked that, too. And then he asked what else. We said infrastructure. We need to build new buildings, we need to create facilities so that our outstanding students and our outstanding faculty can make the world a better place. Again, he said he liked that. At the end, Frank said he would support an activity Mary Jane and he care about, healthcare innovation — an activity that not only educates our students but also paves the way for reducing pain and improving the quality of life for generations to come."

"It is your involvement," President Farvardin continued, addressing the Semcers, "your caring, your friendship and your generosity that put the wind in our sails. We are moving forward faster because you give us support and energy."

When he took the podium, Semcer reflected on his time at Stevens with engineering precision and enduring gratitude.

"I have been involved with Stevens, my class and my fraternity since I graduated, 18,618 days ago. I am so fortunate to be an alum of Stevens. Giving back and standing here today is a pleasure and an honor for Mary Jane and me." ♦ — Alan Skontra



PHOTOS: JEFF VOCK



1 Mary Jane and Frank Semcer '65 were honored for their longtime support of Stevens during Alumni Weekend and took time to celebrate with their children and grandchildren. **2** President Nariman Farvardin presented Mr. Semcer with a picture of his beloved Theta Xi house. **3** The Semcers enjoyed many tributes that evening from family and good friends.



Thousands Gather to

NEARLY 5,000 FAMILY MEMBERS, FRIENDS AND INVITED GUESTS ATTEND GRADUATE AND UNDERGRADUATE CEREMONIES

Stevens Institute of Technology commemorated the graduation of more than 2,000 undergraduate and graduate students May 25, 2016, during the university's 144th Commencement ceremony at the Meadowlands Expo Center in Secaucus, New Jersey, not far from the school's Hoboken campus.

The momentous occasion was a day-long affair that began in the morning with the graduate Commencement ceremony. Proud family and friends filled the Expo Center to celebrate the achievements of 1,458 master's degree and 55 doctoral candidates who hail from the U.S. and 27 other countries. Introduced by President Nariman Farvardin as an alumna who personifies the international reach of Stevens and the global ambitions

of its students, Pam Cheng '92 M.Eng. '95 delivered an animated address filled with humor and humility. Cheng is the executive vice president of operations and information technology at AstraZeneca. Cheng greeted the Stevens community by expressing how deeply honored she was to deliver the Commencement address and how delighted she was to return to the school she still considers "home." Extrapolating lessons from her own life, she underscored the importance of a positive attitude in overcoming life's difficulties and achieving success. That mindset, she said, is the single most important attribute she looks for in potential hires. "Ten percent of life is what happens to you, the other 90 percent is how you respond," she advised.

In his own remarks, President Farvardin encouraged the graduating class to seek out interesting challenges to solve, to always act with integrity and to aim high, reminding them of the university's Latin motto, *Per Aspera Ad Astra*: "Through adversity to the stars."

Later in the afternoon, family members, friends and well-wishers gathered for the undergraduate Commencement ceremony to celebrate 605 bachelor's degree recipients of the Class of 2016. Dr. Robert Fischell, a pioneering inventor of medical instruments, gave the undergraduate Commencement address. Introduced by President Farvardin as a visionary and prolific inventor, Dr. Fischell helped to create some 50 satellites during his 30-year career at The Johns Hopkins University



Friends and family gathered to celebrate the Class of 2016 at the Meadowlands Expo Center in Secaucus, New Jersey, on May 25. Opposite: Dr. Robert Fischell, the undergraduate Commencement speaker, received an honorary bachelor of engineering degree and a picture of the "Torch Bearers."



Celebrate Class of 2016

Applied Physics Laboratory. He also holds patents to life-saving medical devices such as lifetime pacemaker batteries. His pioneering contributions to biomedical and space technology have earned him numerous accolades and awards, including induction into the Space Technology Hall of Fame and the National Medal of Technology and Innovation, the nation's highest honor for technological achievements.

In a stirring address, Dr. Fischell told the audience of future business leaders, scientists, entrepreneurs and inventors that his life-long fascination and involvement with technology made it possible for him to truly live the "American Dream." As the Bronx-born son of immigrants, he was the first in his family to attend college. He urged the Stevens Class of 2016 to forge new ground, rather than follow the easy path, adding that the difference between what is possible and what is impossible

is the unrelenting desire to continue.

After presenting him with an honorary bachelor of engineering degree, President Farvardin expressed his delight that Dr. Fischell is now part of the Stevens family.

In his closing remarks to both the graduate and undergraduate Commencement ceremonies, President Farvardin encouraged the newest Stevens alumni to maintain a life-long connection with their alma mater, and reminded them that they are joining a distinguished and august club, one that includes the inventors of bubble wrap and IMAP (the modern form of email), the co-founder of General Motors, a director of NASA and many others who have impacted the world in meaningful ways. The Class of 2016, he said, will no doubt change the world with their own innovations and leadership. ♦

— By Young Soo Yang



PHOTOS: KATHY CAJOICEDO

WELCOME TO

From coast to coast, from the Wisconsin forests to the heart of Texas, Stevens alumni clubs are meeting and greeting, offering camaraderie, career advice and community, no matter where their alumni have landed.

“One of the SAA’s chief goals is to expand and enhance the sense of community many felt as students,” says Assistant Vice President for Alumni Engagement and Annual Giving and the Executive Director of the Stevens Alumni Association Melissa Fuest. “Through affinity and regional club networks, we hope to provide valuable opportunities for alumni to create and cultivate relationships with alumni of all generations all around the world.”

Alumni have a variety of channels — based on geography or a specific interest — to explore and stay connected to their Castle Point family. To become an active member of one of these thriving networks or to propose a new affinity or regional club, Fuest encourages alumni to contact the Alumni Office. “We are always working to improve upon the things we are already doing to strengthen the Stevens network and to develop new avenues to keep our alumni proud and engaged.”

Here’s a look at five diverse groups, each with its own personality, to show that no matter where you are or what you’re into, you’ll always have a place at Stevens:

The Fan Favorite WCPR Alumni Association

It all started in 2004, when WCPR alumni started gathering for what became an annual barbecue. Now, a long way from its humble barbecue beginnings, the WCPR Alumni Association (WAA) operates more like a long-established organization. It has enthusiastic members, well-attended events and a specific mission. “The WAA brings together alumni from the many eras of the station — from AM radio through the digital age — to share their tales of the colorful history of WCPR, to promote the scholarship fund and to ensure WCPR remains a fixture of the Stevens community,” says Mike Bocchinfuso ’08, president of WAA. Speaking of its scholarship, the WCPR Outstanding Performance Award became fully endowed at \$75,000 in August 2015 and distributed its first student scholarship in April 2016. “We decided that with our powers combined, we could provide assistance to dedicated WCPR members who were in need of financial aid,” Bocchinfuso says. “I’m proud of all the WCPR alumni who pitched in and helped us make the scholarship dream into a reality.” ❖

The Successful Startup Southern California

Inspired by a visit from Stevens President Nariman Farvardin in October 2014, the Southern California alumni group — whose region stretches from San Diego in the south to San Luis Obispo in the north — has started off strong. Events are regularly scheduled every other month and offer a variety of experiences. “We try to do things in different parts of the area and to have activities that appeal to the older and younger alumni demographic,” Kirit Sarvaiya ’97, regional leader of the group, says. “We’ve done wine tastings, visits to art museums, a day at Pelican Hill resort and SpaceX CIO Ken Venner ’84 organized a special walk-through at SpaceX, which brought people down from Northern California.” The group is also expanding to include social service activities, starting this month when it works on a project with Habitat for Humanity. ❖

Members of the WCPR Alumni Association gather at Alumni Weekend. ▼



THE CLUB

**REGIONAL, AFFINITY
GROUPS KEEP
ALUMNI CLOSE TO
CASTLE POINT ROOTS**

The Kickoff Wisconsin

Jessie Vos '14, a Wisconsin native, and Nicole Franks '14, a transplant from Long Island, New York, were having such a great time taking advantage of all that Wisconsin has to offer, they figured they should invite the rest of the local alumni to join them. "I moved here two years ago and there's just so much to do, especially outdoors," Franks says. Starting the group with the help of the Alumni Association was easy, they say, as was planning its inaugural event — a happy hour at The Old Fashioned in Madison, Wisconsin — in June. It was a solid turnout, but Vos and Franks hope to get more attendees when events pick up in the fall. "In the summer in Wisconsin, everyone uses their weekends because it's a beautiful state when it's not cold — although winter is beautiful in its own way," Vos says. "But there's a lot we hope the alumni group will do in the fall, like beer gardens, Packers and Brewers games, hiking, beer and cheese tours...I think I already said beer..." Adds Franks: "Yeah, but it's Wisconsin, so there's beer and cheese everywhere!" ❖



◀ Stevens alumni in Wisconsin visited the Clock Shadow Creamery in Milwaukee to indulge in their love of cheese. From left are Jessie Vos '14, Nicole Franks '14, Theresa Ponella '14 and Noreen Jordan '14.

The Patron of the Arts Stevens Alumni Performing Arts Club


After a couple years' hiatus, the Stevens Alumni Performing Arts Club made a successful return to the scene this past spring. Before catching the Stevens Dramatic Society's presentation of *Avenue Q* at the DeBauw Performing Arts Center, the group gathered for happy hour at Court Street in Hoboken. "We want to bring friends together to enjoy theater and art," says Michael Cahill '15 M.Eng. '15, one of the group's coordinators. "We're also trying to establish a relationship with the undergraduate groups so, right now, we're here to offer support by helping build sets and attending shows." Already planned is a homecoming weekend gathering this fall on campus to enjoy Theta Alpha Phi's production of *I Love You, You're Perfect, Now Change*. While the group may at some point venture to shows on The Great White Way, Cahill says the focus will always be on supporting Stevens theater. ❖



▲ John Charles Taylor '10 M.Eng. '10 critiques the resume of Henry Negron Jr. Class of 2017 during a STEP mock career fair in April.

The Role Model Stevens Technical Enrichment Program (STEP) Alumni

For so many of its students and alumni, STEP has always meant family. "The purpose of the alumni group is to continue the family bond that STEP students form as undergrads," says ShaQuill Thomas '15, president of the STEP Alumni Group since August 2015. "The group ensures that STEP alumni — no matter how far away they are — continue to support the program by attending STEP events or donating to the STEP scholarship established by the alumni club." Many alumni events are catered to current STEP students, including mock career fairs, career readiness workshops and networking events to discuss life after Stevens. "Triumph through any challenge can be achieved as long as you have the drive, focus, passion and support. STEP is that guide that was there for us throughout our time at Stevens," Thomas says. "Now it's up to us to create a path for success and be the next generation to continue that support system and keep the mission alive." ❖ — Rebecca Markley

 **NEED MORE OPTIONS?** Visit www.stevens.edu/alumniclubs for a full list of regional and affinity groups. Or, for information on starting your own Stevens alumni club, contact the Alumni Office at 201-216-5163 or alumni@stevens.edu.

STEVENS CLUBS

FISHING CLUB

The SAA Fishing Club had two very successful fishing trips in May. Both trips targeted striped bass; however, an abundance of bluefish made catching stripers a challenge. Gerry Ferrara '76, one of the club's more skilled fishermen, caught two stripers, including a 20-pounder, on the May 13 trip. While he was the only one to catch a steeper on either trip, we were not disappointed as there was almost non-stop action on both trips. We caught more than 50 slammers in the 10-15-pound category on both trips, keeping a total of about 70 and releasing the rest to fight another day. George Johnston '72, Tom Moschello '63 and Marty Valerio '68 joined us this year on the May 21 trip and had a great day on the water. For future steeper trips this fall, contact me at rsmagee@rcn.com. ♦ — *Dick Magee '63*

George Johnston '72, Marty Valerio '68 and Tom Moschello '63 enjoy the day at sea, with a new fishing buddy at far left. ▼



MANHATTAN ALUMNI

Stevens graduate alumni, students and friends enjoyed a night of networking and fun at The Liberty NYC in Manhattan late last year. ▼



STEVENS METROPOLITAN CLUB

The club continues to meet monthly on the fourth Tuesday (except for November and December, the third Thursday). You are invited to enjoy our luncheon meeting, especially if you are retired, self-employed, among the recently employer-separated, enjoy playing hooky or really, really like lunch. The club's annual meeting was held in June, and officers re-elected for another year are: John Stevens '72, president; Joe Schneider '46, treasurer; Don Daume '67, secretary; and John McDonnell '72, representative to the council. The club chose once again to donate to Stevens scholarships, with donations over the years totaling some \$40,000. Incorporated in 1939, the club has four living past presidents: Marty Valerio '68, Don Daume '67, Denny Candler '55 and Charlie Schnabolk '53, who has written something of a history of the club, from the 1950s to around 1975. His efforts are much appreciated. Sadly, we lost a beloved longtime member, Ed Wittke '45, in June. Several SMC members and alumni — Joe Schneider '46, Ken DeGraw '57, Leon Hojegian '61, Joe Weber '64, Marty Valerio '68 and Richard Cornell '73 — attended his memorial service. We will miss him. Club meetings are held at various restaurants within 20 miles of Hoboken, with ample parking, handicap access, potent potables and good viands. You are invited. ♦ — *Don Daume '67, Secretary*



FIVE DUCKS TO WATCH

Five seniors will be playing their final seasons for the Ducks this year as they conclude their illustrious athletic careers on Castle Point. The five have racked up numerous honors among them as they each leave Stevens as some of the top athletes their programs have ever seen. ♦ — *Danny Vohden*

KAITLYN ASTEL

Major: Civil Engineering

Hometown: Staten Island, New York

Favorite Memory of Your Stevens Basketball Career So Far:

Never before has the Stevens women's basketball team hosted any round of the NCAA tournament, and never before has it advanced to the Sweet 16, as it did both last year. Having home court advantage and our families, friends and classmates cheering in the stands behind us, we beat SUNY Geneseo, a regionally ranked team who was predicted to come out victorious over us, to advance into the Sweet 16 of the NCAA tournament.

Goals For Your Senior Season:

First and foremost, I want to keep improving myself as a leader by continuing to make my teammates and program better. I want to show that the team's success last year was not a one-time occurrence, and that we are good enough to advance in the NCAA tournament again and compete with the best.



Kaitlyn Astel

ROB MURRAY

Major: Civil Engineering

Hometown: Bound Brook, New Jersey

What You Love About Wrestling at Stevens:

I know it's almost a cliché to call your team a family, but to me, these guys are my best friends. We have a caring coaching staff and enthusiastic team that want to win and want to watch their teammates win. And it goes beyond winning titles. We always try to do something together outside of practice. Usually someone will organize a ballgame in the wrestling room or we'll go bowling. It's like I have 20-plus brothers.

Goals For Your Senior Season:

I still want to become a national champion and I still want the team to win a national championship.



Rob Murray

MARY TOBIN

Major: Mechanical Engineering

Hometown: Bound Brook, New Jersey

What You Love About Playing Volleyball at Stevens:

Getting to do what I love in a competitive environment surrounded by people who will always push me to do better (while also getting a pretty good education).

Favorite Memory of Your Stevens Career So Far:

Playing in the first weekend of the NAACs and making it to the Sweet 16. The amount of fans and school spirit that were present was second to none, and it's an experience I'll never forget.



Mary Tobin

RABA NASSIF

Major: Quantitative Finance

Hometown: Northvale, New Jersey

What You Love About Playing Soccer at Stevens:

What I love about playing soccer at Stevens has nothing to do with playing soccer. Being a part of the Stevens women's soccer team has given me a family of 30 sisters. We all push each other to be the best we can possibly be, goof off together, eat Sunday night dinners at someone's apartment and, on top of all of this, we're able to play soccer.

Goals For Your Senior Season:

It's safe to say that our team has incredibly high expectations and goals for this next season. We want to continue to grow our culture, create lifelong and meaningful relationships and make sure we always put the person before the athlete.



Frank Szucs

FRANK SZUCS

Major: Finance

Hometown: Brookside, New Jersey

What You Love About Golfing at Stevens:

I love the balance of being able to compete while also pursuing a high level of academics. Golf is a good way to shift focus away from academics and onto something else for a few hours. It's a nice break away from studying.

Favorite Memory of Your Stevens Career So Far:

My favorite memory was my junior year fall season (last fall) going into the last round at The Bridges in Pennsylvania. I remembered that John Ziegler (assistant coach) had said earlier in the season that if we were able to break 300 as a team, he would treat us to dinner at his apartment. We ended up shooting 295 and setting a new Stevens record. And we had a delicious dinner at his apartment later that week.



Raba Nassif



For information on the Stevens Ducks sports seasons, visit stevensducks.com.

CALENDAR OF EVENTS

**SEP 30
-OCT 2**

FRIDAY-SUNDAY
Stevens Homecoming
2016, Stevens campus,
stevens.edu/homecoming



OCT 5
WEDNESDAY

Dr. Curtis R. Carlson, founder, CEO of Practice of Innovation, will speak on "Innovation and Education," as part of the President's Distinguished Lecture Series, Stevens campus, stevens.edu/lecture

OCT 15
SATURDAY

Graduate Open House,
Babbio Center,
Stevens campus,
stevens.edu/openhouse

OCT 28
FRIDAY

First Annual Stevens
Conference: Reimagining
Calculus, Stevens campus,
[www.stevens.edu/
calculus-reimagined](http://www.stevens.edu/calculus-reimagined)

NOV 3-5
THURSDAY-SATURDAY

7th Annual Stevens Conference on High-Frequency
Finance and Data Analytics, Stevens campus,
https://kolmogorov.fsc.stevens.edu/hff_conference/

NOV 19
SATURDAY

Stevens Orchestra concert
stevens.edu/DeBaunPac



DEC 8
THURSDAY

Annual Washington, DC,
Club Holiday Party

DEC 9
FRIDAY

Stevens alumni attend
"A Christmas Carol," McCarter
Theatre, Princeton, New Jersey

DEC 10
SATURDAY

SAA Holiday Party, Stevens campus



For SAA and alumni club events, visit
connect.stevens.edu/alumniportal



For DeBaun Performing Arts Center
events, visit stevens.edu/DeBaunPac



MARRIAGES

Nicole Favetta '11 M.Eng. '12 to Adam Fallacaro '11 M.Eng. '12 on Jan. 30, 2016.

Melissa Indoe '14 to Matthew Moguillanes on Nov. 14, 2015.

BIRTHS

To Ashley '08 and Joe Tiseo '08, a daughter, Gemma.

To Melissa '10 and Jonathan Landis '11, a son, Jackson Scott, on March 1, 2016.

To Kathy Imperial Gaccione '10 and Giovanni Gaccione '09, a daughter, Giuliette, on March 9, 2016.

OBITUARIES

J.S. Braxton '37.....	11/29/15
W.E. Ehlers, Jr. '42.....	5/26/16
C.F. Mengers '42.....	9/9/14
G.C. Willetts '44.....	10/27/15
E.W. Wittke, Jr. '45.....	6/11/16
V.A. Blaes '46.....	4/20/16
C. Hepenstal '46.....	8/6/15
C.G. Najimian '48.....	8/18/15
R.D. Anderson '49.....	4/27/16
C.J. Scavullo '50.....	12/4/15
H. F. Snyder '50.....	12/28/15
P. Appert '51.....	12/9/15
J.P. Spindler '51.....	3/21/14
G.K. Wertheim '51.....	7/17/14
W.J. Knapsack '52.....	1/27/16
F.R. Decker '52.....	2/15/16
M.J. Hendrickson '52.....	12/6/15
D.H. Cavi '53.....	2/23/16

G. Opinante '54.....	3/21/16
R.P. D'Arcy '56.....	3/22/16
F. Purcell '56.....	5/7/16
J. Nunes '57.....	9/14/14
A. Olsen '58.....	1/18/16
G.N. Bellucci '59.....	2/7/15
J.S. Cvicker '59.....	2/13/16
A.G. MacDougall '60.....	2/21/16
F.A. Keller '61.....	3/9/16
J.R. Guerriero '62.....	5/16
J. Gerber '65.....	3/11/16
G. Prans '65.....	4/27/16
J.C. Schneider '70.....	3/5/16
G.J. Fitzgerald '71.....	1/9/15
G.R. Kollar '80.....	4/29/14

GRADUATE SCHOOL

F.J. Ceely, M.S. '49.....	4/22/16
R.E. Bryden, M.S. '61.....	7/20/13
A.W. Reid, M.S. '00.....	6/2/16

STEVENS HOMECOMING 2016
SEPTEMBER 30–OCTOBER 2 stevens.edu/homecoming

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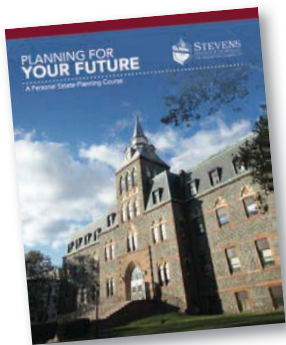


“Stevens awarded me an Alumni Scholarship in 1975, which allowed me to afford to attend a top-quality engineering school. I put Stevens in my estate plan with the hope that future students will have some of the same opportunities I had.”

- Joanne Beattie Compton '79

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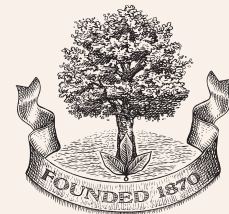
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—E.H. YANG, Professor of Mechanical Engineering

Stevens Professor E.H. Yang and his team are researching transparent, flexible nanomaterials for solar energy harvesting on a broad scale.

The breakthroughs being engineered are representative of the caliber and scope of research happening daily across our campus. Stevens is home to three National Centers of Excellence as well as dozens of collaborative, multidisciplinary research programs — all driven by faculty dedicated to developing high-tech, modern solutions to the challenges that face society.

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