

THE STEVENS INDICATOR

SPECIAL
RESEARCH
ISSUE

WINTER 2019 ✦ THE MAGAZINE OF THE STEVENS ALUMNI ASSOCIATION

**SEE ARTIFICIAL INTELLIGENCE
RESHAPE YOUR WORLD**

IN THIS ISSUE: ASEE, SEFI PRESIDENTS Q&A | AWARDS GALA HONORS | STEP TURNS 50

DEPARTMENTS

2 PRESIDENT'S LETTER

3 LETTERS TO THE EDITOR / SOCIAL MEDIA

4-7 GRIST FROM THE MILL

42 SPORTS UPDATE / CALENDAR OF EVENTS

43-72 ALUMNI NEWS

44 SAA PRESIDENT'S LETTER

66 VITALS

FEATURES

8-9 WHO AND HOW WE TEACH

Dean Jean Zu talks with Stephanie Farrell M.Eng. '92, president of ASEE, and Mike Murphy M.Eng. '82 Ph.D. '87, president of SEFI

10-11 STEP AT 50

The anniversary honored the past and celebrated a bright future

12-37 RESEARCH IS ON THE RISE

From AI to cancer, Stevens research is flourishing

38-39 A CELEBRATION OF ACCOMPLISHMENT

A look at this year's Awards Gala recipients

40-41 FOR THE LOVE OF THE GAME

Bruce Boylan '63 leaves a legacy



Stevens alumni, students and staff assist in the trial inflation of several balloons at DeBaun Athletic Complex on campus, in preparation for the Macy's Thanksgiving Day Parade. This past fall marked the 33rd year that Stevens volunteers participated in the parade. One alumnus reflects on the experience on page 72.

PHOTO: JOE CARROTTA

Calling for submissions: Are you a photographer? If so, please submit your photos of any subject to editor@alumni.stevens.edu for an upcoming photography feature highlighting the work of Stevens alumni.

Cover Design: Simone Larson Design
Cover Illustration: Oliver Burston



PRESIDENT'S CORNER

RESEARCH FLOURISHING AS STEVENS IS DRIVEN TO MAKE LIFE BETTER FOR PEOPLE AND TO IMPROVE SOCIETY

When Stevens adopted its ten-year Strategic Plan in 2012, a bold vision was articulated: "...to become a premier, student-centric, technological research university." This carefully crafted combination of words emphasized the integral role of research to a university that, over many decades, built its reputation by providing a rigorous and broad-based technical education that has launched thousands of graduates into successful careers. In 2017, through the mid-point update of our plan, Stevens refocused its lens to identify six high-impact and multi-disciplinary "foundational pillars" that will define our research agenda in the years to come:

- Artificial intelligence, machine learning and cybersecurity
- Biomedical engineering, healthcare and the life sciences
- Complex systems and networks
- Data science and information systems
- Financial systems and technologies
- Resilience and sustainability

Stevens' growing impact in these areas is significant and is increasingly being recognized by national research funding agencies. In the past fiscal year, Stevens researchers set an unprecedented record in sponsored research awards of \$45.3 million. This represents a 49 percent increase in annual funding since 2011.

As these data illustrate, research has become central to the mission of Stevens. Our faculty are making new discoveries in areas that directly benefit individuals and families, from medical diagnoses and treatments of cancer, autism, Alzheimer's, Parkinson's, heart disease and other illnesses; to advances that have large-scale, system-wide impacts — including defense and homeland security, cybersecurity and the safety and security of our financial systems, maritime systems and infrastructure, to name just a few.



PHOTO: AARON HOUSTON

I am particularly proud of the newly established Stevens Institute for Artificial Intelligence (SIAI), an interdisciplinary education and research institute that brings more than 50 faculty members from all three schools and the College of Arts and Letters together to solve pressing problems in healthcare, business operations, finance, education and many other fields. Through this vehicle, our researchers are doing fundamental and applied research using AI and machine learning that will have truly transformational impacts on individuals and on society.

As the size and prestige of our faculty body continues to grow, and as new academic and research facilities come online — including many new and renovated laboratories across the campus and the anticipated opening of the Gianforte Family Academic Center in less than a year — the contributions of our faculty and students and of Stevens' research portfolio will become even more widely known.

I hope you enjoy learning more about some of the truly inspiring research taking place at your alma mater. We invite you to come back to campus to visit and see it first-hand.

Per aspera ad astra,

A handwritten signature in black ink that reads "N. Farvardin". The signature is written in a cursive, slightly stylized font.

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

WINTER 2019, VOL. 140, NO. 1

Editor

Beth Kissinger
bkissing@stevens.edu

Managing Editor

Rebecca Markley
rmarkley@stevens.edu

Contributors

Thania Benios
Stevens Division of
Communications & Marketing

Paul Karr
Stevens Division of
Communications & Marketing

Alan Skontra
Stevens Office of Development

Laurie Vazquez
Schaefer School of Engineering
and Science

Young Soo Yang
Stevens Division of
Communications & Marketing

Art Direction/Design

www.DanFlintDesign.com

Additional Art Direction/Design

Michael Hofmann
Simone Larson Design

Published three times a year by

The Stevens Alumni Association,
member of the Council for
Advancement and Support of
Education. © 2019 Stevens
Alumni Association

Indicator Correspondence

The Stevens Indicator
1 Castle Point Terrace
Hoboken, NJ 07030
Phone: (201) 216-5161

Letters to the Editor

editor@alumni.stevens.edu

Class Log submissions

alumni-log@stevens.edu

General SAA inquiries

Contact the Alumni Office
Phone: (201) 216-5163
Fax: (201) 216-8247
alumni@stevens.edu



REMEMBERING RICHARDSON

I enjoyed the last issue, especially the remembrance of Professor John Richardson. (See page 36 of the Fall 2018 *Indicator*.) In my freshman year, I was struggling a bit with my grades. Professor Richardson called me into his office and reminded me that my brother, Ara (Class of '51), gave me a path to shoot for and to buckle down. He did it in such a nice way; I never forgot it or him. Thanks again.

Leon Dourgarian '56

MAXWELL HOUSE MEMORIES

I read with interest your research spotlight article, "Brewing Benefits," in the Fall 2018 *Indicator*. As I reached the end of the article, I was disappointed that there was no mention of the Maxwell House coffee factory that sat just north of campus and operated until the early-1990s. When the wind was blowing down the river, the entire campus was bathed in the smell of freshly roasted coffee (except for the day of the weekly

roaster equipment cleaning, when the bitter smell of badly burned coffee greeted you when you walked out your door). After reading this, I now know the reason that many of my exams turned out better than expected. I recommend that Professor Madzharov and colleagues continue their research by investigating whether Stevens students' zero-hour exam scores fell after Maxwell House closed.

John Klein '83

FINE JOB WITH FALL ISSUE

I fully enjoy reading *The Stevens Indicator*, and the Fall 2018 issue was exceptional.

"Grist from the Mill" is very full of great information and updates.

The feature articles of "The Arts at Stevens" are all very exciting and sensational, providing tremendous insights into the diversity of the Stevens educational population and learning experiences.

"The President's Corner" by President Nariman Farvardin is outstanding, especially the focus

of student development on "human skills," beyond technical capabilities.

Paul Fein M.S. '90



Editor's Note: Several readers contacted us when we asked if you could identify students in the photo (above), which appeared on page 43 of the Fall '18 issue. They said that Jim Beardall '56 is the student holding the lacrosse stick, and Jim himself called in to confirm that this is, in fact, him! Jim and several other 1950s alumni also identified Ed Baisley '56 standing next to Jim, and Al Canham '55 sitting next to him.

SOCIAL MEDIA



This rainy day post from November, warning that "Winter is surely coming!" received hundreds of likes on the Stevens Instagram account @followstevens. Students, alumni, faculty and staff can all relate to the wintry weather of Castle Point.

Do you have any favorite winter photos taken on campus? Share your best photos and memories with the hashtag #stevenswinter and we may feature your photo in our next post!



GRIST FROM THE MILL

REMEMBERING SAMUEL PRESCOTT BUSH



With the passing of President George H.W. Bush this past fall, Stevens was reminded of its connection to one of America's most influential families. Samuel Prescott Bush, Class of 1884, the patriarch of the Bush political family, was an alumnus of Stevens before making his mark in history as one of the top industrialists of his time. Born in New Jersey, Bush graduated from Stevens with 41 other seniors in the university's 12th commencement. He went on to build a successful career as a railroad executive and president of Buckeye Steel Castings Company, having taken the helm of the company from Frank Rockefeller, brother of John D. Rockefeller. During his time at Stevens, the grandfather of the nation's 41st president and great-grandfather of the nation's 43rd studied mechanical engineering and rushed the football field with his teammates as part of one of the earliest regular college football teams in the U.S. He was also a member of the tennis team and Delta Tau Delta fraternity. "S.P. Bush is one of our notable alumni," said Leah Loscutoff, head of archives and special collections at Stevens. "He attended Stevens at a time of great innovation and promise, and embodied the entrepreneurial spirit that lives on in our students today." With classmate John A. Bensele, Bush wrote his senior thesis on dynamometers, a device that measures the power output of an engine. His research prepared him for his career and served as a foundation for his work in expanding our country's railroads, both shaping the industrial revolution and contributing to a flourishing economy. ❖

TEDx BRINGS SPARK TO CAMPUS

An exceptional group of Stevens professors and staff captivated a standing-room-only crowd filled with students, faculty and staff in DeBaun Auditorium — as well as thousands across the world via livestream — during the university's first-ever TEDx event, a program of independently organized events with "ideas worth spreading." On Sept. 12, 2018, professors Elizabeth Fassman-Beck, Alex Wellerstein and Jan Cannizzo, and Melissa Shuman Zarin, assistant director of counseling and psychological services, shared their research in diverse areas centered on the theme *Through Collaboration, Impact*. Topics ranged from nuclear war and the teaching of calculus to mental health and stormwater runoff. TEDxStevensInstituteofTechnology was brought to campus as a way to showcase Stevens researchers to a far-reaching audience.

"This event marks a milestone in placing Stevens research on a global platform to inspire critical thinking, build community and share discoveries, aligned with a theme from our strategic plan, *Through Collaboration, Impact*," said Mo Deghani, vice provost of Research, Innovation and Entrepreneurship, whose office presented the talks. "Common to all the presentations is the immediate applicability of the research results to our everyday lives." The event was followed by a reception attended by the speakers and audience, as well as the nearly 100 students who attended a live watch party in the Babbio Center. ❖



To view video of this TEDx event, visit stevens.edu/TEDx

CELEBRATING CALDER ON CAMPUS

The year 2019 marks the 100th anniversary of Alexander Calder's graduation from Stevens, and to honor our esteemed alumnus, the Samuel C. Williams Library will be hosting a



lecture with Calder's biographer and well-regarded art critic, Jed Perl published *Calder: The Conquest of Time: The Early Years: 1898-1940*, the first biography on the world-renowned artist, in 2017. In this lecture, Perl will discuss the book, which has unearthed some lesser-known details of the well-loved artist. Perl is a regular contributor to *The New York Review of Books*, was the art critic for *The New Republic* for 20 years, contributing editor to *Vogue* for a decade, and a recipient of a Guggenheim Fellowship. He lives in New York City. The lecture, which is open to all, will be held on Wednesday, April 3, in Babbio 122 from 3:30 to 5 p.m. A reception will follow in the Babbio Atrium. More details about the event will be announced at a future date. ❖

20 DeBaun PAC

TWENTIETH ANNIVERSARY SEASON



DEBAUN TURNS 20

DeBaun Performing Arts Center (DeBaun PAC) marked the 20th anniversary of DeBaun Auditorium's game-changing renovation over a memorable weekend last fall that included dinner, a musical revue covering 20 years of DeBaun musicals and a gathering of the theater's alumni and current students, where they shared memories, performed and enjoyed one gem of a theater. Joe Schneider '46 (bottom photo, far right) was honored for his unwavering support of the DeBaun PAC over the years. Presenting him the award are David Zimmerman '90, executive director of University Events, and awards committee member Barbara Cames '03 M.S. '08. ❖



STEVENS

Pre-College SUMMER PROGRAMS

STUDENTS WILL

- DISCOVER THEIR TALENTS AND EXPLORE A COLLEGE MAJOR
- LIVE IN RESIDENCE HALLS AND EXPERIENCE LIFE AS A COLLEGE STUDENT
- DEVELOP PROBLEM-SOLVING SKILLS THROUGH HANDS-ON LEARNING PROJECTS

Inspired to learn more?

call: 201.216.3683
 visit: stevens.edu/summer
 email: summer@stevens.edu

GRIST FROM THE MILL

RUS CONTINUES AI DISCUSSION

Renowned robotics and artificial intelligence (AI) researcher Daniela Rus served as the 12th speaker in the President's Distinguished Lecture Series at Stevens last fall. Rus, who is The Andrew (1956) and Erna Viterbi Professor of Electrical Engineering and Computer Science and director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT, delivered an inspiring lecture titled "Unleashing Your Inner Maker" last November that challenged the audience to rethink conventional notions of robots and imagine the limitless possibilities that could arise from the ability "to create the machines that can help save lives, improve the quality of life, or transport us to places we cannot go to on our own." Rus' talk continues a fascinating dialogue on artificial intelligence and machine learning that began last year when Google Research Director Dr. Peter Norvig and, more recently, Dr. Oren Etzioni, CEO of the Allen Institute for Artificial Intelligence, and Tom Mitchell, the E. Fredkin University Professor at Carnegie Mellon University, also addressed Stevens audiences. ❖



MIT professor Daniela Rus spoke last fall on campus.

▶ For more on Rus' talk and on the President's Distinguished Lecture Series, visit stevens.edu/lecture



STRONG OUTCOMES FOR CLASS OF '18

For the Stevens undergraduate Class of 2018, the future is bright, as 96 percent of the class received employment, admission to graduate school or other first-destination outcomes six months after graduation, with 79 percent of seniors finalizing their plans while still in school, according to the university's *2018 Student Outcomes Report*. Global corporate giants such as EY, Google, Jet.com, Merck, NBCUniversal, Prudential, PwC and UBS each hired multiple members of the class, contributing to an average starting salary of \$71,400, the highest in the university's history and a 5 percent increase from the previous year. The report further revealed that while 78 percent of graduates entered the workforce, the military or returned to their home countries, 18 percent continued their education and pursued advanced degrees. ❖

▶ To read the report, visit stevens.edu/outcomes

TRAILBLAZING ALUMNA PASSES

Audrey J. Vincentz Leef M.S. '47, a longtime mathematics professor who was among the first women to earn a master's degree from Stevens, died on Dec. 7, 2018, in Mountain Lakes, New Jersey. She was 96. Leef, who was an assistant professor of mathematics at Montclair State University from 1966



to 1992 and an ordained minister, was the third woman to earn a master's degree from Stevens, with a degree in mathematics. (While women were first admitted as undergraduates in 1971, they were allowed to enroll in graduate coursework, at the university's discretion, decades earlier.) Being among a pioneering group of women on campus was one of her proudest achievements. "Not only did this speak to her passion for mathematics and academic achievement, but also her deeply held belief in women's equality," her family said. Leef came from a Stevens legacy family, with her brother, Chester C. Vincentz '33, M.S. '37, nephew Chester Vincentz Jr. '59 and great uncle, Leon Guilloud, Class of 1887, all graduates. She met her husband of 70 years, George Robert Leef M.S. '53, at Stevens. At Montclair, Leef had a passion for helping students struggling with math and often gave up her lunch hour to help the line of students waiting for help outside her office. Earning a master's degree in divinity at Drew University, she had also served as assistant minister of Community Church of Mountain Lakes. Leef earned a bachelor's degree from Montclair in 1943 and a doctorate in mathematics education from Rutgers in 1976. Predeceased by her husband, she is survived by three of their four children, their families and many relatives and friends. ❖

NEW VP FOR DEVELOPMENT AND ALUMNI ENGAGEMENT

Jennifer A. McDonough, an accomplished leader with more than three decades of experience in educational and nonprofit advancement, joined Stevens in January as vice president for development and alumni engagement. She succeeds Brodie Remington, who retired late last year. McDonough will play an integral role in **The Power of Stevens** campaign, which exceeded its \$150 million goal last year, with a new goal of \$200 million by 2020. McDonough was previously an executive associate with Bentz Whaley Flessner, a fundraising consulting firm to colleges, universities, medical centers and other nonprofits across the country and around the world. Before that, she served as vice president for university advancement at the State University of New York (SUNY) at Buffalo and as vice president for development and alumni relations at the University of Vermont. At SUNY Buffalo, McDonough provided leadership for the final phases of a \$250 million campaign raising nearly \$292 million, a university record. She earned a bachelor's degree in art education and a master's degree in multidisciplinary studies from the State University of New York College at Buffalo. ❖



THE POWER OF INTROVERTS

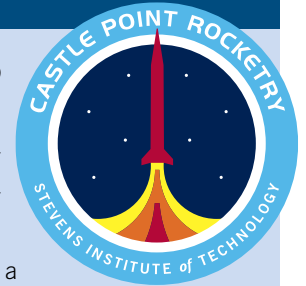
The bias in a global culture that tilts excessively in favor of extroverted behavior is harmful not just for introverted individuals, but for institutions across the board, according to Susan Cain, the fourth speaker in Stevens' Excellence Through Diversity Lecture Series, on Dec. 12. Cain's talk, "Quiet: How to Harness the Strengths of Introverts to Transform How We Work, Lead and Innovate," centered on the fundamental differences between extroverts and introverts in the ways they cognitively interact with the world and how those differences play out in the workplace and in the classroom. Along with her *New York Times* best-sellers *Quiet Power: The Secret Strengths of Introverts* and *Quiet: The Power of Introverts in a World That Can't Stop Talking*, Cain's record-smashing TED talk has been viewed more than 20 million times and was named by Bill Gates as one of his all-time favorite talks. ❖



To read more about Cain's talk, visit stevens.edu/introverts

STUDENTS PLAN TO LAUNCH ROCKET INTO SPACE

You don't have to be Elon Musk to launch a rocket into space. At least, that's what a group of Stevens engineering and computer science students will attempt to demonstrate, as they plan to build and launch a rocket past the Karman Line from Truth or Consequences, New Mexico, on June 19, 2019. The eight-person Castle Point Rocketry is one of several collegiate teams around the world working on projects to surpass the Karman Line, an imaginary line 100 km from the Earth, considered the boundary between the planet's atmosphere and outer space. The team is moving forward with the construction and testing of a 15-foot carbon fiber and aluminum rocket capable of putting an 8 kg payload into space. The team is fundraising to cover the cost of materials and research and development, with companies such as Aerojet Rocketdyne, A&P Technology, Gosco Valves, Kron Technologies, L3 Technologies, Misumi, Northrop Grumman, MICRO, NovAtel and Triton Space Technologies, along with some members of the Stevens Board of Trustees, pledging their support. ❖



To learn more, visit <https://castlepointrocketry.space/mission/>





WHO AND HOW WE TEACH

A CONVERSATION WITH TOP ENGINEERING EDUCATORS

Engineering educators from across the globe gathered in Copenhagen, Denmark, last September for the annual conference of the European Society for Engineering Education (SEFI 2018). Among them were two prominent leaders in engineering education who share another distinction — they are both Stevens graduates. SEFI President Mike Murphy M.Eng.'82 Ph.D. '87, academic registrar and director of academic affairs, digital and learning transformation, at Dublin Institute of Technology (DIT)*, and American Society for Engineering Education (ASEE) President Stephanie Farrell M.Eng. '92, professor and founding chair of the Department of Experiential Engineering Education at Rowan University in New Jersey, enjoyed a reunion of sorts, with Farrell also giving a keynote talk on her National Science Foundation-funded project at Rowan to increase the participation of all underrepresented and underserved groups in engineering. Both leaders recently spoke with Jean Zu, dean of Stevens' Schaefer School of Engineering and Science, about today's challenges in engineering education, initiatives they are leading to address these challenges and their time at Castle Point.

JZ: Did you know each other when Stephanie was a Fulbright scholar at DIT, and did you ever work together?

SF: Prior to my time as a Fulbright scholar at DIT, Mike and I had met through the international engineering education community. Mike was the original champion of the Fulbright Scholar Program at DIT, as he launched this initiative when he served as dean of the College of Engineering and Built Environment. When I visited in 2014-2015, Mike was in another role at a different location, as the manager of the Technological University Dublin collaborative initiative. However, our paths crossed several times during that year, and we continue to stay in contact.

JZ: You are now at the helms of organizations that are shaping engineering education in the U.S. and Europe. What do you feel are the greatest challenges facing engineering education and how are you addressing them during your tenure?

SF: My short answer is: Who do we teach, and what do we teach? The engineering profession today is practiced in a world where society and technology are changing faster than ever — where population growth, limited natural resources and global warming create enormous challenges, and technological breakthroughs present an abundance of opportunities. To meet the future needs of society, there is a critical need to expand and diversify the engineering work-

force. Engineering educators will need to recognize, recruit, cultivate and retain untapped talent; create an inclusive culture which is essential for learning, development, engagement and retention; and develop a workforce with technical skills and the ability to apply them in a broad context.

MM: Studies show that diverse teams perform better, and companies with diverse workforces perform better. Yet, generally within engineering education, we see less diversity in the classroom than we need. Therefore, we have a particular responsibility within engineering education to address this imbalance. (By the way, I am delighted that ASEE and SEFI are working on a joint position paper on diversity in engineering education that should be published in 2019.) Another challenge is that too often we focus on what engineering students need to learn and, consequently, we put a priority on the content of engineering curricula. Instead, we should place greater emphasis on how students learn, and therefore re-orient our teaching to include more engaged and active pedagogical approaches.

JZ: How did your Stevens experience shape you and help you get to where you are today?

SF: It was at Stevens where I had my first real teaching opportunity, when I had to come up with my own project during a summer pre-college science and engineering program for middle school girls. As a homebrewing enthusiast, I saw beer making as an exciting opportunity to explore chemical engineering principles and applications. The girls learned to do fermentation in the lab, to measure the growth of the yeast and to analyze their product. (I think it goes without saying that the students could not drink their product!) That became a common theme of my teaching: Using everyday examples of engineering that make new concepts more accessible to students through familiar applications. At Stevens, I was also a teaching assistant in process design with professor Harry Silla, and this experience solidified my interest in education as a career. When students were struggling to understand new concepts, I found it very rewarding to work together to develop different explanations until something clicked for them.


MM: As a Ph.D. student, I was fortunate to be in the company of exceptional academics, people like professors Frank Boesch, Paul Chirlan and Charlie Suffel, to name just a few. They gave me the opportunity to teach circuits and electronics, and I loved it. The energy and self-drive of the Stevens student body was always a huge motivation to improve. One of the highlights was receiving an Outstanding Instructor Award from the Department of Electrical Engineering. Later, when I worked at Bell Labs and then Bellcore, Joe Manogue asked me to keep teaching circuits and electronics at NYU for the dual degree program between Stevens and NYU. Because of Stevens, I stayed connected to engineering education, and this was a key reason for me coming back into the academy as dean of engineering at Dublin Institute of Technology. I am so grateful to Stevens for all of the opportunities that it offered me. It was, and is, a great place to learn.

JZ: Efforts to increase diversity can be found on a number of campuses; Stevens recently launched Stevens ACES and the A. James Clark Scholars Program, and Stephanie is promoting efforts at Rowan. Why is diversity in engineering education important, and can you give examples of how it is making a positive difference?

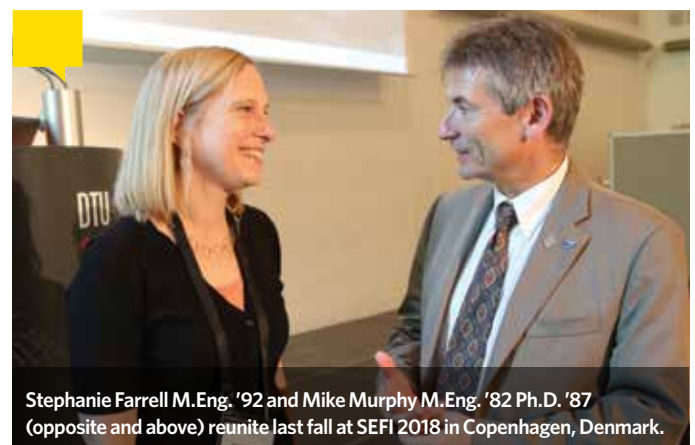
SF: I think the reason these initiatives are so important is because we have a critical need to expand and diversify the engineering workforce. As I mentioned earlier, we need to identify, recruit and retain untapped talent. If we keep looking in the same places, and we keep teaching the same things in the same ways, we can't expect to see change. These programs are important change-making initiatives that not only create opportunities for students from underserved communities and from underrepresented groups, but also enhance the learning experience for all students at the institution and ultimately contribute to producing a stronger workforce.

MM: Type "Why is diversity in engineering important" into Google and 337,000,000 results appear in 0.44 seconds. Diversity is fundamentally important in several key ways, and these apply to the individual, to the company and to society. First, diversity is important as a fundamental equity issue for individuals. Second, it is important to ensure that industry has a sufficient supply of qualified engineers to maintain our economy. Third, the most creative ideas and optimum solutions will come from teams that bring diverse life experiences to the design team. Valuing diversity through our actions is just an essential thing we need to do. ❖

Stephanie Farrell's SEFI 2018 talk, "Revolutionizing Engineering Diversity," examines her NSF-funded project at Rowan University that aims to increase participation of all underrepresented and underserved groups in engineering, including LGBTQ+ students, students with disabilities, low income and first generation to college students.

 To download Farrell's talk, go to stevens.edu/farrelltalk

**On Jan. 1, 2019, Dublin Institute of Technology was re-designated as Technological University Dublin (TU Dublin).*



Stephanie Farrell M.Eng. '92 and Mike Murphy M.Eng. '82 Ph.D. '87 (opposite and above) reunite last fall at SEFI 2018 in Copenhagen, Denmark.

STEP 50

CELEBRATION HONORS THE PAST, LOOKS TO THE FUTURE AT

Patty Torres '01 was visibly fighting to tell her story, before her emotions got the better of her.

"When you talk to me, I always talk about the STEP program," she said quietly, at the 50th anniversary celebration of the Stevens Technical Enrichment Program on campus last September. But she told her story well because here, even before a large audience, she was with family.

Growing up about four miles from campus in West New York, New Jersey, she got a chance in middle school to take an Algebra 1 class that would help prepare her for college. Class started at 7 a.m., and her mom, a single parent of two, needed to be at work in Massachusetts, leaving on a Monday and coming back on a Friday. So Torres would get her younger brother ready in the morning, take him to daycare, dash to algebra class, later head to her middle school, and then pick up her little brother from daycare after school. And she managed to do it for a while, but once the cold winter mornings and snow came, it just became too much.

"I don't recall telling my algebra teacher if it was the fact that I had to get up earlier than my classmates, or that the class was hard, or both. All I remember is crying that I couldn't do it anymore, I had to give up this opportunity," she said, filled with emotion. Years later, she would get a new opportunity through STEP and its summer, pre-freshman Bridge program, which she had to pass to be admitted to Stevens. She did it.

"All of us had challenges. All of us had hardships," Torres told three generations of STEP alumni, students and friends gathered. "We also had mentors, teachers, professors, deans, friends or families that have helped us along the way. For me, STEP gave me that opportunity, and that's why I come back and support the program and the students."

This golden celebration of a program founded to increase the number of underserved students in STEM fields, many of them African-American, Latino, first-generation college and low-income students, saw STEP alumni return from as far as California and Texas. The conversations turned to family, friends and career successes, and there are many with STEP, which has propelled engineers, scientists, physicians, lawyers, educators and CEOs over these last 50 years.

But the evening itself was mostly about the resilience of its students — some 1,000 over the decades — about the people behind them who always believed in them, and about giving back. ♦ — *Beth Kissinger*



PHOTOS: JEFF VOCK

 **To read the full story, visit stevens.edu/step50th**



Honored during the event, from left, were longtime STEP supporters Ronald West '71, Maria Ramirez Gonzalez '89 and Hermes Gonzalez-Bello '89 M.S. '95 and Patty Torres '01, seen with President Nariman Farvardin.



RESEARCH IS ON THE RISE AT STEVENS

Our faculty and students regularly produce groundbreaking research that solves pressing societal challenges, helps make us healthier and safer, and produces new business insight.

In this issue of *The Stevens Indicator*, you will read about our flourishing research program in artificial intelligence (AI), impacting fields such as healthcare, robotics and finance. You'll read about Stevens-driven advances in our understanding of tumor growth and metastasis, which could help improve the ways cancers are treated.

You will learn how social media can dramatically affect the value of Bitcoin and other cryptocurrencies, thanks to Stevens research noted by national media including *The Boston Globe*.

You'll read about the university's pathbreaking effort to probe the field of quantum communications, with implications for privacy and security. And you'll learn how new Stevens research reveals surprising benefits created by the autonomous technologies built into the vehicles we drive.

You will also get to know fellow Stevens graduates doing important research and serving in research leadership roles at MIT's Lincoln Laboratory, IBM, NYU, Colgate Palmolive and Northeastern University.

And there's so much more happening. To learn about Stevens' growing research program, visit campus to connect (or reconnect) with our students and faculty.

Online, visit stevens.edu/research. — Paul Karr



ILLUSTRATION: OLIVER BURSTON



ARTIFICIAL INTELLIGENCE GETS REAL

What it is, where it's headed — and how Stevens is using it to make life healthier, safer and more secure

Deep learning. Machine learning. Neural networks. AI. Everyone, it seems, is talking about artificial intelligence these days. But what is it?

AI, a broad term variously describing either a grandiose goal or a toolbox of technologies and techniques (see “AI: A Primer,” page 17), is poised to profoundly transform the ways we do business, monitor our health, commute to work and more.

In fact, that’s already happening: AI is gradually reshaping many aspects of our daily lives right now, right beneath our noses.

Siri and Echo use AI-type processes; so do Google Maps and Google Translate. So does Amazon’s recommendation engine. AI even helps your phone recognize you as, well, *you* — even on bad hair days.

The next wave of cars, hospitals and manufacturing plants will almost certainly incorporate AI technologies.

A Swiss bus already runs daily through its village and to Europe’s largest waterfall without a driver, having intelligently “learned” to drive the route safely. An experimental deep learning-based system uses algorithms to read chest X-rays, find lung cancers (with 99 percent accuracy) and classify them — all in about 20 seconds. And AI has proven highly reliable, in tests, at diagnosing eye diseases from retinal scans and training itself to spot forming brain cancers in MRI images of the head.

“Systems that can analyze what’s happening in hospitals and detect potential mistakes can save an enormous number of lives,” noted leading AI thinker Oren Etzioni, director of the Allen Institute for Artificial Intelligence, during a 2017 talk on the Stevens campus.

Stevens is a growing player in this new move to harness AI for societal benefit, too.

The Stevens Institute for Artificial Intelligence (SIAI) launched last spring, with more than 50 faculty now

affiliated, and provided a look under the hood at more than a dozen working projects during a special on-campus event in late November.

Prominent national voices in the AI space, including Etzioni, Google Research Director Peter Norvig and MIT robotics pioneer Daniela Rus, have visited Castle Point to share new insights and discuss the future of artificial intelligence.

And researchers across campus are deploying AI in disciplines ranging from medicine and security to emergency planning and sports science.

“Simply put, our vision is to drive AI research and application that solves some of those tough ‘big’ problems that have so far resisted solving,” says professor K.P. “Suba” Subbalakshmi, founding director of SIAI (see Q&A, page 18).

“There’s a lot of impressive work in the field happening at Stevens right now,” agrees Giuseppe Ateniese, a leading cybersecurity innovator and chair of Stevens’ Department of Computer Science.

Leveraging AI to diagnose diseases, spot fraud

Some of the projects on campus grew organically from interests that predated AI’s sudden renaissance.

For more than a decade, Subbalakshmi and fellow Stevens professor Rajarathnam “Mouli” Chandramouli have leveraged AI to produce a series of remarkable innovations offering increasing power and accuracy with applications to everything from elder care to banking fraud to homeland security.

Their work began with a government official’s offhand suggestion to pursue automated ways of identifying hidden messages concealed within normal conversations. From there, they became interested in deception detection and built an intelligent set of algorithms to detect lies in writing or speech. It performed well and became the basis of a startup.

Later, doctoral student Zongru (Doris) Shao Ph.D.’18 joined the team, which had begun developing applications to address broader societal challenges.

In one widely reported project, the trio trained software to scan written text and voice phone calls, then recognize the likely

early symptoms of Alzheimer’s disease, dementia or aphasia. More recently, Ph.D. student Harish Sista M.Eng. ’16, created an iPhone mobile application called Co-CoA-Bot that tests various cognitive aspects, from memory recall to language, as early detection for Alzheimer’s disease. It’s an effort to apply the team’s algorithms to personal health concerns in a more user-friendly way.

Another tool, developed by the team in collaboration with longtime Stevens partner Accenture, uses AI to spot likely signs of insider trading or other financial fraud.

“The reason we have been investing in this is simple: because we truly believe in it,” says Sharad Sachdev, a managing director and analytics lead with Accenture.

To create that product, the trio fed large

criminal communication from a huge volume of innocuous conversation. And, in true deep-learning fashion, the software became better at guessing as time went by.

“Traditional machine-learning algorithms actually don’t work that well for the sort of case where you have millions of routine emails and just a few suspicious ones,” explains Subbalakshmi. “We had to develop a new one that would.”

The software works by picking out unusual patterns in speech; the use of certain code words; and other signals. It also filters out legitimate sales chatter from suspicious material by looking at the context. A conversation about buying potatoes *could* just be about buying potatoes. But if that conversation happens suddenly, between traders



Ph.D. student Harish Sista M.Eng. ’16 created CoCoA-Bot, an iPhone mobile application that tests various cognitive abilities, as early detection for Alzheimer’s disease. Here, in a visuospatial abilities test, the user has drawn a cube on the black screen, based on the model shown below.

quantities of deceptive emails (including roughly 500,000 placed into the public record during the late-1990s Enron financial-crime trial) and routine communications into an analytic engine. The software quickly learned to pick out very occasional instances of

in a brokerage, without any surrounding conversations about food shopping? The tool can flag that.

The trio is also testing and developing machine-learning tools that can authenticate voices. They’re doing it because voices are

increasingly used to lock and unlock devices, data, even bank accounts — and falsified voices pose an increasing threat.

To fight back, the researchers fed a large database of both human and computerized voice samples into an analytic system known as a convolutional neural network (CNN) that quickly learned to tell the difference.

“Our best-performing experimental

- Another group, headed by Ateniese and Stevens researcher Briland Hitaj, designed a never-before-seen cyberattack that quickly became scary-good at “stealing” private pictures from a locked phone without ever touching it — one of the first demonstrations of deep learning used for a nefarious purpose. They did it in order to understand the

“Whenever we see a new product or software come out with a grand claim of security, we immediately begin looking at it with a critical eye,” says Hitaj. “If it leaks even one bit of information, we do not consider it safe nor secure.”

There’s a nucleus of healthcare-related AI research on the Stevens campus, too. Professor Samantha Kleinberg’s Health and AI Lab (HAIL) develops models and methods aimed at improving health, including tools that model uncertainty, factor in missing data and otherwise enhance analysis of medical data. The research is applicable in treating stroke and diabetes patients, among others. Kleinberg also uses an ingenious setup to harvest chewing sounds and motions from sensors in wearable devices. Sophisticated models work to automatically measure the types and quantity of foods eaten — without having to stop and write them down. The system

WHAT’S NEXT IN AI? THE SUB-FIELDS OF IMAGE RECOGNITION, LANGUAGE PROCESSING, ROBOTICS AND MEDICAL IMAGING WILL ALL HEAT UP, SAY STEVENS’ EXPERTS.

algorithm is already able to distinguish between a real voice and a computer-generated, falsified version as often as 95 percent of the time,” notes Shao.

Transforming cybersecurity, robotics, sports science

Other AI-based projects are also active throughout the university, including some with important implications for privacy, safety and security.

- Ateniese and his teams work on multiple cybersecurity projects leveraging AI and machine-learning techniques to probe networks and protocols. He led one team to a major breakthrough in password security, creating a machine learning-based system known as a GAN (generative adversarial network) to make faster, more intelligent guesses. In tests, the tool cracked passwords more successfully than the best current hacking tools.

“A machine can quickly learn all our human tendencies when making passwords, then teach itself to go *beyond* those rules,” explains Ateniese. “It discovers hidden patterns we didn’t even realize existed in our passwords. This can help us harden our own passwords, and understand how attackers get them.”

Professor Rajarathnam “Mouli” Chandramouli, left, and Founding Director of the Stevens Institute for Artificial Intelligence professor K.P. “Suba” Subbalakshmi

flip side of AI technology, create public awareness, and flag a specific weakness in machine-learning methods so that experts can begin building better protections into the learning models upon which AI depends.



AI: A Primer

already monitors nutritional intake roughly as well as we can.

In another project, professor Negar Tavassolian develops algorithms and learning-based systems that can monitor your heartbeat in medical settings — even noisy or crowded ones — looking for abnormalities, or hunt for skin cancers by using AI and sophisticated new antennae to create higher-resolution snapshot images of your skin.

Finance hasn't been left out. Last November, two Stevens School of Business student teams shared top prize in a UBS-sponsored competition requiring participants to develop and present AI-driven technologies that optimize the selection of corporate wealth management branch sites.

The arts at Stevens integrate AI, as well. College of Arts and Letters (CAL) Dean Kelland Thomas harnesses AI to teach computers the tendencies of jazz masters and then improvise in real time with live human players; the research may have applications to defense, computing and virtual assistant design. CAL professor Jeff Thompson created a machine learning-powered project on human-computer interactions.

Researchers across campus use machine learning to experimentally guide robots in a range of tasks, including underwater navigation (led by professor Brendan Englot) and evacuation of public spaces during emergencies (led by professor Yi Guo).

There's also a growing Stevens effort in the exploding field of computer vision — a subset of AI with applications to everything from transportation to elder care to counterterrorism. Projects in the realm include work by professor Xinchao Wang to analyze transit, medical center and sports videos, and research by professor Philippos Mordohai toward the development of improved wheelchairs.

"So much going on," sums up Subbalakshmi. "We have such breadth. It's really our strength."

What's next: promise, but cautions

What's next in AI? The sub-fields of image recognition, language processing, robotics and medical imaging will all heat up, say Stevens' experts.

(Continued on page 19)

Artificial intelligence, which feels brand new to most of us because the term is suddenly everywhere, was actually first sketched out more than 60 years ago.

That's when a group of researchers gathered on the campus of Dartmouth College to compare notes and propose a method of using the new tools of computation to analyze data and make decisions much like we do: by learning, through experience, to go far beyond what they have originally been "taught." AI originally referred to that grand aspiration — that computers would one day display human-like intelligence and prediction abilities.

Things looked promising, at first. Early techniques, relying on probabilistic inference, decision trees and other classification operations, excelled at tasks with very clear rules (such as playing chess). But computers were still room-sized, expensive, and limited in data storage and processing.

It would take decades for AI to re-emerge as a powerhouse.

Eventually, as more data began to be collected and stored, and specialized applications such as robotics began developing intensely, **machine learning** became one of the major paths to get closer to the goal of AI. Instead of simply following rules and reaching scripted decisions, a set of algorithms could now be built that not only spotted hidden patterns in huge amounts of data, but also automatically updated its own model's parts and predictions based on what it was encountering. In other words, the machine was learning.

Deep learning is a recent, more advanced form of machine learning that has rocket-fueled the AI field. To create deep-learning models, researchers begin by feeding huge quantities of data — it could be thousands or even millions of photos, video frames, emails, bank transactions, chemical reactions, anything — into software platforms known as **neural networks**. The networks, somewhat modeled after human neurons, deploy a series of stacked layers of analysis that are interconnected with each other.

So, if your algorithm is racing through photos trying to find people, the topmost layer might just check to see whether one individual pixel seems like the edge of a nose or doesn't. If it *does* seem like a nose, the pixel receives a high score or weight and a sort of valve is opened, passing the possibility of a "yes" to the next layer. Then the whole operation runs all over again on the next pixel. Later, different layers might work on discerning the possible shapes of an eye, ear or mouth.

After many passes and decisions — every one scored and added to a running tally — the system makes a final decision or prediction: Is this a face? Did I guess the password? Should we order a biopsy? Is that the person we have been looking for?

The network is also designed to automatically use each result to improve future performance. By adjusting the connections and weights of its scoring system — continually tweaking its own math on the fly to favor certain predictions over others, based on what's being seen — it can learn to do better over time without our constant intervention.

And *that's* how a set of complex, rapidly repeated mathematical processes, skillfully drawn, can begin to mirror some of the ways we learn through experience, and begin reaching toward an artificial form of "intelligence" and insight. ❖ — Paul Karr

Q&A

K.P. “Suba” Subbalakshmi

Founding Director, Stevens Institute for Artificial Intelligence (SIAI)



PHOTO: BOB HANDELMAN

What’s unique about SIAI?

Here at Stevens we are very multidisciplinary and collaborative, and that is where the power in this new institute lies. SIAI does not sit inside any one department; it includes faculty from the arts, music, business, systems engineering and other fields, as well as the expected engineers and computer scientists.

This means we have the agility to make collaborations happen faster, for whatever we need, whenever we need to.

In addition, Stevens, with its location directly across the river from New York City, is situated near leaders in industry, medicine, finance and the arts, so we can become a nexus for AI discussions, new techniques and evolving behaviors and practices.

The term “AI” is suddenly everywhere. Is it being used accurately?

You know, marketing is marketing. We can’t do much about that. But as scientists in this

field, we know that choosing and designing these models, and then tuning and adjusting algorithms to give better predictions, is much harder than it looks. There’s a lot of labor, a lot of failing and going back and doing it again, in the process.

Even when the models have been quite successful, in our own lab, we have resisted commercializing too soon. Because we are still refining, constantly, and we want to continue to do this until we feel these things are very accurate, robust and efficient.

What’s something people don’t know about AI?

They need to always remember that it’s we humans who are driving this, who are making the choices. We are nowhere near that science-fiction scenario of some all-cognizant AI being taking over the world. That’s Hollywood.

Instead, we are building the AI — and that means our human weaknesses and biases are reflected in it. When you train

algorithms on a data set, you try to make sure it’s clean and unbiased, but you may not know.

So mistakes can happen. You know those touchless hand-washing machines? They use an algorithm to “see” that a hand is there. And there was a problem with some machines deployed in an airport that were not able to recognize non-white colors of skin at all.

Turns out that it was because the company that built them used only a small set of people, taken off a street nearby, to design it. They just so happened to be predominantly Caucasian.

Fortunately, we have a lot of good people working on these problems and they do have ethics and a recognition of the limitations and biases of the technology, and the good sense to look at the conclusions made by AI with a critical eye.

What does the future of AI look like?

I think researchers will begin to search for tools that begin to “think” in a more meta way. For example, right now I am doing some work studying the viral spread of rumors in social networks. And the field borrows some ideas and models from the ways epidemiologists describe the ways that diseases spread.

There are many other types of algorithmic models available, as well, describing other kinds of problems in other fields. Eventually I think computers will learn to survey the entire landscape of possible models and choose the best ones for a given problem, regardless of discipline.

Of course, nearly all the available models and algorithms were originally written by people solving very specific problems. And humans made the connection to borrow the idea from a specific area to solve the problem in their own area. So we are still very much part of AI. ❖ — Paul Karr

(Continued from page 17)

But even as AI races ahead, some roadblocks — and caveats — still remain.

“Privacy and security are major concerns,” says Ateniese. “As we and other researchers have already demonstrated, machine-learning models can be compromised, tricked and hacked.”

Surveys show most consumers are still very wary of boarding AI-operated vehicles, in part because they fear hackers could create intentional crashes. (Those fears aren’t completely unfounded, say security researchers.)

Another sticky issue: Because they chiefly learn from published words, images and videos, machine learning models don’t learn perfectly. Instead, they reflect our own human weaknesses...because *we* built them. Researchers have begun discovering, for example, that certain biases can become baked right into algorithms if we’re not careful.

An MIT Media Lab study recently discovered, for instance, that the AI used to build facial recognition systems understands white faces clearly and in detail, but experiences some confusion when looking at darker skin colors. A Microsoft-built “chatbot,” trained to learn from the Twitter accounts it interacted with, rapidly degenerated into a racist, expletive-spouting mouth-off before the plug was swiftly pulled on the unfortunate experiment.

Other studies have demonstrated that AI learning systems tend to label a person in a kitchen as female, even if it’s obvious to all of us that it’s a man standing there cooking. Why? Because, for most of recorded history, movies

PHOTO: JEFF YOCK



Zongru (Doris) Shao Ph.D. '18

and images largely perpetuated the stereotype that homemakers were solely women.

Predictive models can also become too specific to what they learn to give useful insights on new questions. Models trained for one task won’t necessarily work as well for a similar problem, and a researcher might need to create a brand-new dataset from scratch — a huge task — or

tweak and train the model all over again.

Some also caution that AI is being over-promoted as a cure-all.

“We haven’t achieved true ‘intelligence’ with machine-learning methods yet,” says Hittaj. “That’s a very long way off. You can hand a 2-year-old child a single photo of a dog, cat or car and it will recognize it as such for the rest of its life. We’re nowhere near that level of

“PRIVACY AND SECURITY ARE MAJOR CONCERNS. AS WE AND OTHER RESEARCHERS HAVE ALREADY DEMONSTRATED, MACHINE-LEARNING MODELS CAN BE COMPROMISED, TRICKED AND HACKED.”

—Professor Giuseppe Ateniese

human intelligence with our models.”

Still, most scientists agree AI is here to stay, and that it could profoundly reshape business, medicine, logistics and more because — while it can’t beat the human brain for intricate complexity — its tools can process and predict some kinds of things far, far faster than we humans ever could hope.

“It will permeate everything that we are doing, that’s a fact,” concludes Subbalakshmi. “But how it’s going to permeate sensibly and how that will affect our lives is in *our* hands, not the machines.” ❖ — Paul Karr

Giuseppe Ateniese, chair of Stevens’ Department of Computer Science

PHOTO: MELISSA BLEMUR PHOTOGRAPHY





THE CASE FOR 'SMART' CARS

Professor researches vehicle technologies to save fuel, climate-changing emissions — and lives

Driverless cars are increasingly in the news: impressive videos of test runs on YouTube, reports of accidents, and regular reminders that Tesla, Waymo (originally a Google venture) and others are working hard to develop them.

But many of the advanced technologies that help autonomous vehicles steer, drive without hitting things, park safely and navigate through or around traffic are already being phased into cars we drive now.

And that leading-edge tech, says Stevens professor Yeganeh Hayeri, could save us *big* money at the pump — as well as save lives, keep the air we breathe cleaner, and preserve forests and fruit and vegetable crops.

“Simply put, advanced automated technologies in vehicles on the road — not making them driverless, simply upgrading the available technological systems — can benefit us in many ways that we are now beginning to understand,” says Hayeri.

In a collaboration with Carnegie Mellon University, Hayeri’s team recently put a number on the potential fuel-cost savings

alone, and it’s *big*: as much as \$6.2 billion.

It’s just one of several projects that Hayeri — who specializes in the study and modeling of transportation systems technologies and behaviors from a big-picture perspective — is working on to help us better understand future transportation, and the ways technology could help improve it.

How to save \$6 billion

Driving can be a frustrating experience.

Traffic congestion, construction, a dearth of parking: all can slow down your ride and burn extra fuel.

Multiply your personal pain by 260 million, the estimated number of cars on the road in the U.S. alone, and you begin to see a huge economic and environmental issue calling out for better solutions.

And it turns out there’s already a partial cure available, says Hayeri.

For the fuel-efficiency study, conducted with Stevens Ph.D. student Saeed Vasebi and researchers at Carnegie Mellon, Hayeri considered various low-level automated systems available for passenger cars and other light-duty vehicles.

These include a host of technologies and services such as blind-spot cameras; lane-keeping warnings; various forms of cruise control that help maintain constant speeds; and real-time mapping and route-optimization, which guide drivers (hopefully) to the quickest, least congested routes.

“These systems are demonstrated to reduce the likelihood of accidents and idling in traffic, as well as improve a vehicle’s aerodynamic efficiency,” explains Hayeri. “All these factors improve fuel efficiency and lower total fuel costs — both for vehicles with ‘smart’ systems and, more subtly, for *all* the other vehicles on the road, as well.”

To figure out the total impact, the Stevens-Carnegie Mellon team created a series of sophisticated stochastic equations and models to predict how “smarter” driving would affect fuel consumption nationwide.

“In the end, we found that the fuel consumption of light-duty U.S. vehicles — cars, pickup trucks and sport-utility vehicles — would improve by between 6 and 23 percent,” says Hayeri. (That range incorporates various scenarios of technology adoption and the effectiveness of the technologies involved.)

That translates to between \$60 and \$266 in the pocket of car owners every year, plus about \$35 in additional annual savings created for each driver (automated or not), thanks to more smoothly flowing traffic, for a total possible benefit of \$300 a year...or \$6 billion in all, if the market share of those advanced technologies rises to around 90 percent.

“This is even after factoring in the *additional* power and fuel consumed by automated systems such as radars, sensors and cameras in a vehicle,” she notes.

Vehicle tech improves air quality, human health, the environment

Hayeri also studies the broader societal effects of deploying smarter automated systems in vehicles.

In research that will be published next year, she and her team recently concluded that the health and environmental benefits of adopting low-level automated technologies are enormous — on the order of several times *larger* than the billions potentially realized through fuel-cost savings alone.

For the new project, Hayeri expanded her model, using an 86-urban area dataset and factoring in the various air pollutants emitted from vehicles: carbon monoxide and dioxide; sulfur dioxide; and ammonia, nitrous oxide, particulate matter and other volatile compounds.

The final verdict: up to \$25 billion worth of benefits could potentially accrue, nationwide, if automated technologies are more fully deployed in our vehicles.

Professor Yeganeh Hayeri, of Stevens’ School of Systems and Enterprises, in a “smart” car

“We’re talking about a host of benefits, from cleaner air and fewer deaths to more forests and green space remaining healthy and green to less agricultural loss due to those pollutants,” Hayeri explains.

Interestingly, the most effective vehicle tech depends upon where you live, since local air quality, land use, vehicle usage, traffic patterns and other factors all vary considerably from city to city.

In the New York City metro area, for example, the ever-present congestion (including a high density of taxis, buses, pedestrians and cyclists) is the main drain on fuel efficiency and a leading cause of accidents.

So-called cooperative and adaptive cruise control technologies, which help make decisions about when to accelerate or brake (or not), can alleviate a significant portion of wasted fuel, Hayeri’s group learned.

In Los Angeles, things are different: Drivers waste fuel and time circling city blocks in a desperate hunt for parking. So *that’s* where better mapping, route guidance around traffic and systems to assist with the actual parking can help save lives, crops and gas, discovered the Stevens team.

“In terms of policy,” Hayeri says, “these results suggest that a targeted adoption and promotion of automated technologies can maximize the collective energy and environmental cost savings for us all.”

When moods, weather, and driverless cars converge

In still another effort, Hayeri investigates the human factor: our driving behavior.

Existing traffic-planning models, she points out, have long used simplistic, two-car equations to describe the ways we drive. But the reality is a lot more complex than that. Tapping a huge database and using a powerful new model, her team is now analyzing so-called car-following behavior from a number of fresh perspectives.

“It matters how much traffic, and what kind, is around you,” she says. “It matters what the terrain is, and what the weather is. Whether or not you had coffee. And other characteristics may matter. We will look at gender, race and a range of other variables to see if any appear to significantly impact driving behavior.”

Driving behavior matters because, one day, conventional and self-driven vehicles will begin sharing the road — and we don’t have any idea how well they will get along.

“Lots of people talk about this glorious future when there are only driverless vehicles on our roads, but it’s going to take us 40 to 50 years, at least, to get there. Between now and then, the reality is going to be messier,” Hayeri says.

“That’s why I do this: to help anticipate and plan for the future.” ❖ — *Paul Karr*



PHOTO: JEFF VOCK

Dedication to Country

Alumnus Leads Northeastern's Research

ALUMNI PROFILE

David Luzzi '80 would probably agree: He is his father's son.

He's an optimist, and though he would defer to others — the retired generals he has worked with; the soldiers his research aims to protect; his father, World War II veteran and scientist Theodore Luzzi '51 — he is also a patriot.

David Luzzi, armed with a Ph.D. from Northwestern University, would go on to teach and conduct research at the University of Pennsylvania, where he would build the nation's first nanotechnology institute. In 2007, he joined Northeastern University as its dean of engineering. And today, he leads the growing research enterprise of this 21,500-student, research university.

As senior vice provost for research, Luzzi empowers faculty researchers in an effort that has chosen health, security and sustainability as research focus areas, with a total of 55 research centers and institutes across the university representing a wide variety of disciplines, from engineering, technology and the sciences to business, the humanities and arts, social science and law. External research funding — the National Science Foundation, the National Institutes of Health, the Department of Defense and others are major funding sources — has doubled over the past five years.

And Luzzi wears a second hat as vice president for the Northeastern University Innovation Campus at Burlington, Massachusetts. Home to the Army Research Laboratory, Northeast, and the George J. Kostas Research Institute for Homeland Security (KRI) — which Luzzi built with Northeastern alumnus Kostas in 2011 — the Burlington campus alone has brought in 17 corporate partners and multimillion-dollar sponsored research from the government and corporations.

As Luzzi sees it, his devotion to his work — and to addressing some of society's greatest challenges — is his way to serve his country.

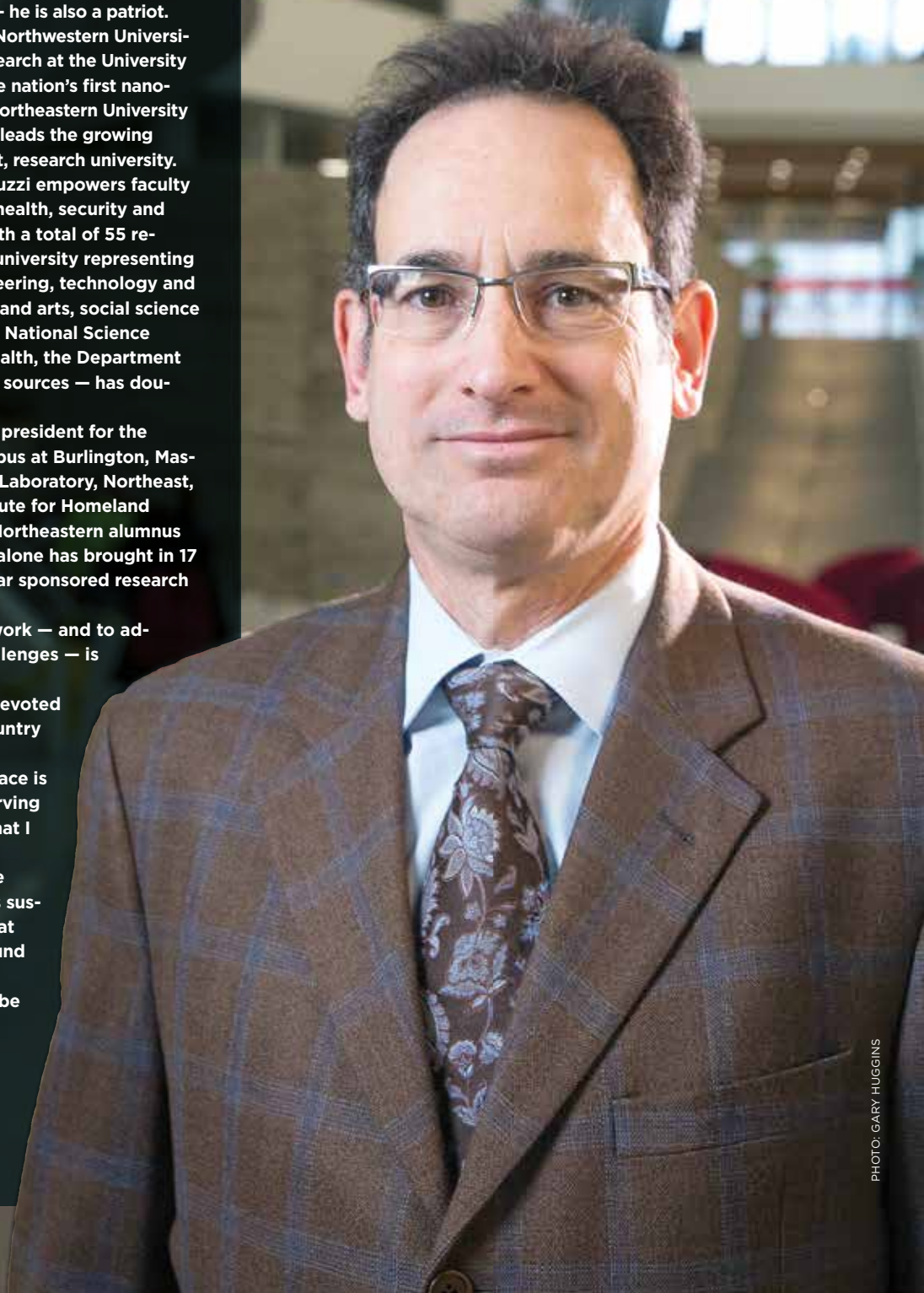
"A big motivator in my life is being devoted to this country and the future of this country and its very special model," he says.

"Its role in the world as a force for peace is something that energizes me, and preserving the future of this country is something that I take very seriously."

The optimism shines through when he speaks about research advances, such as sustainability research at Northeastern and at other universities and organizations around the world.

"I am convinced that technology will be the answer to global warming," he says. Clearly, Luzzi is a man with a mission.

To read more about Luzzi, visit stevens.edu/dluzzi. ❖ — *Beth Kissinger*



STEVENS TAKES AIM AT CANCER

Collaborations with Sloan Kettering, other major players take aim at deadly diseases

As many as one in eight U.S. women will be diagnosed with a form of breast cancer — and an estimated 2 million or more new cases will be diagnosed worldwide each year, according to the World Cancer Research Fund.

While survival rates have climbed over the past quarter-century, metastatic breast cancers still cause death within just three years of detection in half of all women diagnosed.

Now Stevens researchers, working with collaborators both locally and nationwide, hope to improve those odds and pave the way for more effective medications, treatments and therapies — not only for breast cancer, but other cancers as well.

One team, headed by chemistry professor Abhishek Sharma, recently unlocked a new class of substances that appear highly promising for breast cancer treatment — particularly for those with drug-resistant or dangerously metastatic (spreading) stages of the disease.

In collaboration with Memorial Sloan Kettering Cancer Center and the University of Illinois, the Stevens team tried an innovative attack, attaching a core compound to a series of experimental side-chains. After testing more than a dozen variations on cancer cells in the lab, the group found that many of these new compounds did indeed inhibit proliferation of tumor cells. The finding was reported in the journal *ACS Medicinal Chemistry*.

“These are structurally distinct from all the current drugs,” says Sharma, whose work has been supported by the Susan G. Komen Breast Cancer Foundation.

Next his team will select promising candidates from the new class of molecules and work to develop them into more potent drug candidates for further experiments.

New insight into breast tumor metastasis

In another project, Stevens researcher Hongjun Wang and his team have shed new light on the conditions that enable breast cancer tumors to grow and spread.

Wang’s team confirmed a hypothesis that stiffer regions of tissue surrounding a breast cancer tumor appear to speed the growth of tumor cells — at first. This wasn’t surprising, because previous studies indicated it might be true. After about three days into their experiment confirming the theory, however, the experimental cells’ rapid growth rate suddenly slowed (and even stopped completely in the very stiffest material).

That’s a major new insight, and it could point the way to medicines that stiffen the region around tumors intentionally to slow or even halt cancer’s growth.

“This insight should be applicable not only to breast cancer, but also to any solid-tumor cancer, such as prostate or pancreatic cancer, as well,” notes Wang.

Colon, ovarian cancer research also continues

Stevens faculty and researchers also delve into the processes that drive other cancers, as well. Their goal: to help inform the development of better medicines, therapies and treatments for those diseases.

Chemistry and chemical biology researcher

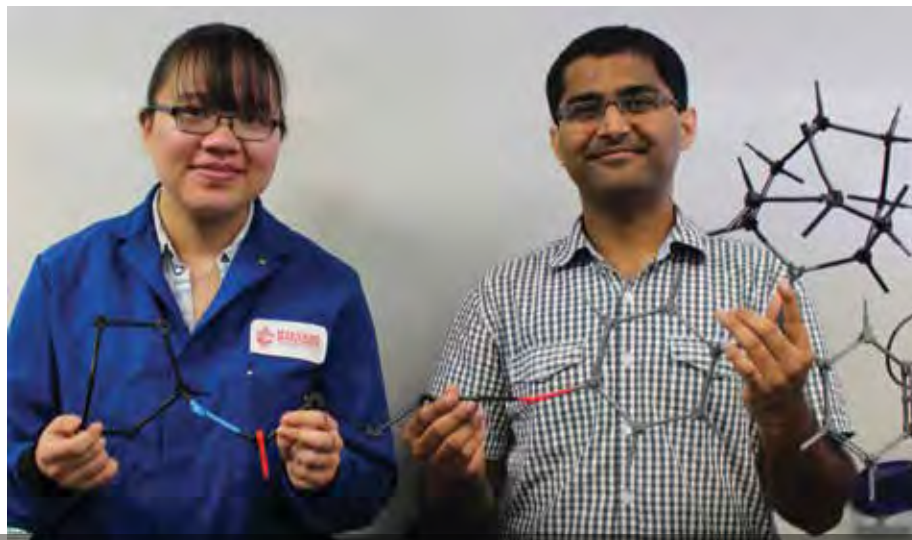
Ansu Perekatt, for instance, studies the molecular biology of colon cancer, which afflicts nearly 2 million new patients worldwide each year. In a joint research project with Rutgers University, she and her collaborators found a protein known as SMAD4 to be critical in the prevention of normal intestinal cells forming into nascent tumors.

Perekatt also recently received a major grant award from the National Institutes of Health’s National Cancer Institute. The \$450,000 award will assist in the seamless transition of Perekatt’s prior research with a nonprofit institute as she continues exploring cancer mechanisms at Stevens.

Stevens researcher Marcin Iwanicki, a former postdoctoral research fellow in cell biology at Harvard Medical School, studies ovarian cancer — in particular, the genetic mutations and other biochemical factors that lead to dissemination of ovarian cancer tumors. In his quest to learn why ovarian tumors break off and thrive in the body and study how they might be suppressed, Iwanicki deploys techniques including tissue bioengineering and gene editing technologies.

To learn more about Stevens’ efforts in biomedical and healthcare research, visit stevens.edu/healthcare. ♦ — Paul Karr

(Below) Ph.D. student Lucia Wang, left, with Professor Abhishek Sharma





FEMALE POLITICIANS PREFERRED

Researchers at Stevens were not surprised with the number of women voted into Congress during the 2018 midterm elections.

Having conducted a national survey of more than 1,400 American adults in June 2018, Stevens political science professors Lindsey Cormack and Kristyn

Karl found that voting-age Americans view female politicians more positively than male politicians when all other factors are equal.

The findings were unveiled at the American Political Science Association’s annual meeting in Boston in August last year.

Survey respondents were shown brief online articles about fictitious politicians who appeared to be making sorrowful or angry appeals in response to a set of policy

Political science professors Lindsey Cormack, left, and Kristyn Karl

failures or concerns; the gender of the politicians, their appeals, and the issue domains were varied in the articles. Survey subjects were asked to score their own emotional responses and to also make several evaluations of the depicted representatives.

“The main result was quite surprising,” says Cormack. “Simply put, an indicated general preference for women in politics is big news. It is possible that women may have taken a large step forward in the public eye, in the sense that they are now no longer penalized for their gender, but rather are preferred — regardless of the tone they use.”

“Indeed, male politicians faced the steepest penalties when communicating about

“IT IS POSSIBLE THAT WOMEN MAY HAVE TAKEN A LARGE STEP FORWARD IN THE PUBLIC EYE, IN THE SENSE THAT THEY ARE NOW NO LONGER PENALIZED FOR THEIR GENDER, BUT RATHER ARE PREFERRED — REGARDLESS OF THE TONE THEY USE.”

—Professor Lindsey Cormack

defense issues in emotional ways, particularly when they conveyed compassion,” adds Karl. “The theory that talking about masculine topics in an ‘unmanly’ way is damaging to evaluations of men may, in fact, still be true.”

But even with the historic gains made by women in the most recent election, both professors caution that there is still much room for improvement.

“Despite large gains, there are still three men for every woman in Congress. For those seeking greater women’s representation, 2018 is cause for celebration, but it also demands recognition that much work remains,” Karl says.

“Yes, despite the gains, women have a long way to go,” agrees Cormack. “But as women decide to enter more races, I anticipate that we should see voters more accustomed to women as political leaders and other women will aspire to roles that traditionally have been held by men.” ❖

— Paul Karr

Meet the Additive Manufacturing Master

ALUMNI PROFILE

It's no wonder that Derek Straub '11 was named to the Society of Manufacturing Engineers' "30 Under 30" list in 2018. As the technical director of additive manufacturing at

MIT Lincoln Laboratory, Straub has made his mark pushing the limits of today's 3D-printing methods and materials, through research and development, novel applications and by getting his fellow engineers to embrace the change.

"[Additive manufacturing] is a hot topic and it's not going away in the near future," he says. "The challenge is getting other engineers to change their way of thinking about design and qualification." Additive manufacturing, or 3D printing, allows engineers to build products and tailor materials from scratch, and while it offers amazing possibilities, it's almost entirely opposite from the way most engineers approach manufacturing.

But Derek is determined to change that.

While much of his work is classified — MIT Lincoln Laboratory is an R&D center for the Department of Defense — his current research focuses on finding new ways to additively manufacture composite materials, as well as making the process itself fast, inexpensive and easy. Straub, as described by *MIT News*, is, indeed, Lincoln Laboratory's "go-to expert for how to design, prototype and build 3D-printed parts that are used in systems as diverse as satellites, imaging systems, drones and breath monitors."

"My favorite part of my job is pushing the boundaries of what's possible. Additive manufacturing has been around since the late 1980s but it exploded in 2010. There are new machines, new processes and new materials, and it's relatively young compared to other disciplines of engineering. Because of that, there are no answers, no textbooks and limited published results," he explains. "But being a smart engineer isn't knowing all the answers; it's knowing how to find the answers. Stevens taught me how to think and solve problems, how to simplify a complex problem, and where to find answers. That problem-solving training has been vital to my success in my professional career since graduating."

For more on Straub, his research and his Stevens experience, visit stevens.edu/dstraub. ❖

— Laurie Vazquez





SPADES (the Stevens Passive Acoustics Detection System) is developed at Stevens to detect, track and classify underwater sounds from the distinctive breathing signals from divers and engine sounds of surface and sub-surface vessels.



AAD (Acoustic Aircraft Detection), built on the same principles as SPADES, is developed next to protect borders and secure areas by listening for planes, drones and other aircraft using microphone arrays, and quickly tracking and classifying them.



Stevens researchers are also using additional passive acoustic-detection techniques to listen inside cargo and shipping materials at ports of entry for the sounds of invasive species (bugs) before shipments are allowed to enter the U.S. Also, this sensor is currently being tested in forests to detect the presence of Emerald Ash Borers and Asian Longhorn Beetles, pests which pose a serious risk to trees and forests as well as cargo and wood-packing materials.

THE SOUNDS OF SCIENCE

From one great idea, many life-changing applications

Technical innovation can have an exponential impact. That's why Stevens researchers continue extending the practical application of newly developed technologies into novel solutions across a wide array of disciplines.

Case in point: Stevens' patented Passive Acoustic Detection System technology, SPADES, began with the concept of listening underwater in a new way to identify potential threats that might be of interest to military and law enforcement organizations.

Once SPADES was perfected, Stevens researchers created new variations of the technology that will address challenges in border and agricultural security.

This work in sensor technologies is now housed at the Sensor Technology and Applied Research Center (STAR Center) at Stevens. This multi-disciplinary center was formally established last year and has more than 60 faculty members and researchers dedicated to solving problems for defense, security, healthcare, critical infrastructure and communications applications.

‘BIONIC MUSHROOMS’

Researchers supercharge an ordinary mushroom to make electricity

Stevens researchers have taken an ordinary white button mushroom from a grocery store and made it bionic, supercharging it with 3D-printed clusters of cyanobacteria that generate electricity and swirls of graphene nanoribbons that can collect the current.

In the process, they have demonstrated — possibly for the first time anywhere — an engineered symbiosis between two distinct microbiological kingdoms, an innovation that could lead to greener, more easily harvestable energy.

The work, reported in the Nov. 7, 2018, issue of *Nano Letters* and covered by the BBC, CNN, *USA Today* and other media outlets, may sound like something straight out of *Alice in Wonderland*. But the hybrids are part of a broader effort to better improve our understanding of cells’ biological machinery in order to fabricate new technologies and useful systems for defense, healthcare and the environment.

“In this case, our system — this bionic mushroom — produces electricity,” said Manu Mannoor, a Stevens assistant professor of mechanical engineering. “By integrating cyanobacteria that can produce electricity, with nanoscale materials capable of collecting the current, we were able to better access the unique properties of both, augment them, and create an entirely new functional bionic system.”

Cyanobacteria’s ability to produce electricity is well known in bioengineering circles. However, researchers have been limited in using these microbes in bioengineered systems because cyanobacteria do not survive long on artificial bio-compatible surfaces. Mannoor and Sudeep Joshi, a postdoctoral fellow in his lab, wondered if white button mushrooms, which naturally host a rich microbiota but not cyanobacteria specifically, could provide the right environment — nutrients, moisture, pH and temperature — for the cyanobacteria to produce electricity for a longer period.

Mannoor and Joshi showed that the cyanobacterial cells lasted several days longer

when placed on the cap of a white button mushroom versus a silicone and dead mushroom as suitable controls. “The mushrooms essentially serve as a suitable environmental substrate with advanced functionality of nourishing the energy producing cyanobacteria,” says Joshi.

Mannoor and Joshi used a robotic arm-based 3D printer to first print an “electronic ink” containing the graphene nanoribbons. This printed branched network serves as an electricity-collecting network atop the mushroom’s cap by acting like a nano-probe to access bio-electrons generated inside the cyanobacterial cells. Imagine needles sticking into a single cell to access electrical signals inside it, explains Mannoor.

Next, they printed a “bio-ink” containing cyanobacteria onto the mushroom’s cap in a spiral pattern intersecting with the electronic ink at multiple contact points. At these locations, electrons could transfer through the outer membranes of the cyanobacteria

to the conductive network of graphene nanoribbons. Shining a light on the mushrooms activated cyanobacterial photosynthesis, generating a photocurrent.

In addition to the cyanobacteria living longer in a state of engineered symbiosis, Mannoor and Joshi showed that the amount of electricity these bacteria produce can vary depending on the density and alignment with which they are packed, such that the more densely packed together they are, the more electricity they produce.

Recently, a few researchers have 3D-printed bacterial cells in different spatial geometrical patterns, but Mannoor and Joshi, as well as co-author Ellexis Cook, are first not only to pattern it to augment their electricity-generating behavior but also to integrate it to develop a functional bionic architecture.

“With this work, we can imagine enormous opportunities,” Mannoor says. “For example, some bacteria can glow, while others sense toxins or produce fuel. By seamlessly integrating these microbes with nanomaterials, we could potentially realize many other amazing designer bio-hybrids for the environment, defense, healthcare and many other fields.” ❖ — *Thania Benios*





MASTER INVENTOR

IBM's Tim Dalton '88 Helps Lead the Future of Technology

IBM Master Inventor Tim Dalton '88 (yes, this is a real title) suggests that if you want to begin to grasp the staggering pace of technology, read a newspaper ad for Radio Shack from the late '80s or early '90s. You'll see VCRs, cameras, tape recorders, telephones and calculators — all that now fit inside your cellphone, in the palm of your hand.

What will be the next “wow” innovation ten years from now? It's hard to know. But Dalton insists that we will continue to be astounded. And as CTO, Science and Technology, with IBM Research, his job is to help deliver these future wonders to the world.

“I like the fact that we are inventing the future of technology,” he says. “And as you solve one problem, you move on to the next and the next and the next.” Indeed, in his job, “every day is new and exciting. *Every day.*”

Dalton helps lead the future of technology from the Thomas J. Watson Research Center, IBM's research headquarters in Yorktown Heights, New York, which is also home to IBM Watson — the supercomputer that burst into public consciousness in 2011 when it bested two *Jeopardy!* champions and is now an artificial intelligence tool used in areas from healthcare to business management to materials science.

During a visit last fall, Dalton leads several visitors down a corridor, eagerly opens a door and there is Watson — with its glass booth and banks of servers. He encourages stepping into the server room, which feels hot, and taking photos with Watson. He is like a kid in a candy store — a researcher still filled with wonder.

It is Dalton's job to try to predict the future of technology and how this will impact businesses and industry. He works with other team members in a leadership role focused on strategic and tactical research planning, meeting with clients around the world, making deals, and working within a broad range of areas within IBM.

Dalton's primary focuses are leading research efforts in quantum computing and AI — with most of his time

in quantum — in what have been identified by IBM as major research areas.

He clearly loves his work and speaks with great enthusiasm and authority on any number of research topics. But he is also self-effacing — a busy single dad of four (his son, Tobias, is Stevens Class of 2021) who juggles parenthood with his career as a top technologist. He shows small glints of pride when he talks IBM and quantum. If someone had asked him five years ago when a viable quantum computer may be available, he and most researchers would have said in 30 years, he says. But in May 2016, IBM released the IBM Quantum Experience, and in 2017 IBM Q, the world's first commercial quantum computer for scientific and business applications, available through the cloud.

Quantum — with its ability to model systems such as molecules — has exciting possible applications. One that Dalton mentions is antibiotic-resistant bacteria and the hope that, through quantum computing, antibiotic materials and bacterial pathways could be modeled to combat disease.

Dalton, who joined IBM in 1998 after four years at Digital Equipment Corporation, started doing microelectronics research, holds more than 300 patents and reached a level that qualified him at IBM for the title “Master Inventor.” He is quick to say that invention is very often a collaborative effort.

Probably his most recognizable invention is the technology inside the chips (low dielectric constant interconnects) that later went into both IBM Power and Z systems as well as the original Nintendo Wii, Xbox 360 and PlayStation 3 game systems.

When you visit his office, you see that it is filled with a collection of high-tech memorabilia, such as computer wafers and memory chips, along with photos of his children and framed copies of a few of his patents. He hangs his Stevens and MIT diplomas (the latter where he earned his master's and Ph.D. in chemical engineering) on a wall.

Dalton, who grew up in Keansburg, New Jersey, has fond memories of Castle Point, where he was a DJ with WCPR radio, did sound for the Jazz Band and Glee Club, played intramurals, was a member of the Tau Beta Pi engineering honor society and graduated as his class' valedictorian. He's a true believer in a Stevens education.

“Stevens provided me with what I call a broad base; I think it was an important thing,” he says. “To me, it was a solid, underlying foundation.

“Having that broad, underlying foundation is very important — to be able to understand different people you work

with, in different areas, to change as conditions change.”

When Dalton speaks about the future of technology — and its ability to solve intractable problems — he is visibly excited. There is the promise of quantum...and then there's AI.

“What did Watson do? It changed people's perception of AI,” Dalton says. “All of a sudden, you could do something with AI that you couldn't do in some other way. That's big. That kicked off a re-invigoration of AI.”

“AI is the new IT,” Dalton says. “It is going to be driving innovation and investments in institutions this century.”

IBM's AI business unit (IBM Watson) was created in 2014, and the IBM Watson Health Unit in 2015 as a particular focus. Dalton uses the examples of doctors who must read medical literature as a part of their work. Watson can read thousands more articles and help doctors keep up with the latest medical information, and in addition provide clinical decision support and help them make more informed diagnostic decisions.

“We're not going to replace the doctor,” Dalton says. “We're going to augment the capabilities of the doctor.”

Watson has also had applications in materials science and in business, helping businesses with customer relationship management (CRM).

Or, by gathering massive amounts of weather data from satellites and ground systems, AI can do calculations that can lead to models that help improve weather predictions, and guide the optimal times for planting, harvesting and irrigation.

Through an IBM fellowship program, the company has already demonstrated, working with nongovernmental organizations, how to better assist communities in Africa by using an AI system that relies on satellite data and simple analytics to determine which villages have more thatched roof huts. Communities with thatched roof huts — which tend to indicate areas in most need — would receive priority for funding.

After more than 20 years with IBM and three decades as a researcher and research leader, Dalton is still deeply passionate about his work, IBM, and the scientists and engineers he works with every day.

“I'm in a building with, like, a thousand of the smartest people in the world,” he says. “If you need to find someone who's an expert in something, you can find them. I think that's pretty unique.”

To read the full story, visit stevens.edu/tdalton. ❖

— Beth Kissinger



ALWAYS ASKING WHY

Researcher explores and engineers the world's most curious science

As a boy growing up in a tiny farming village in southern China, Yuping Huang always knew he wouldn't work on the family farm alongside his parents and brother raising rice, vegetables and ducks.

"I was physically small, back then," he chuckles now, no longer slight. "My mom told me that I'd better study *really* hard and do something else with my life."

He did, and soon gravitated to the one school subject where his expansive imagination found both plentiful questions and problems whose answers had not yet been fully worked out.

"I was always the little kid in the back of the room who didn't want to accept

what I was being taught," he explains. "I think I was actually a bit of a problem for my teachers. I always wanted to know why something was true. Even when they wrote $1+1=2$, I was puzzled and asked why. I still do.

"Because I knew you cannot ever find two oranges exactly the same — we grew a lot of oranges, as well, and I tried hard to find two identical oranges — and so one plus one never always exactly equals two."

And that's how he found quantum physics, a discipline whose theories actually prevent making an exact copy of *anything*, among its many other unusual properties.

Leveraging quantum's curious properties

After completing a science degree in China and research stints at Ohio, Michigan State and Northwestern universities in the U.S., Huang accepted a position on the faculty at Stevens Institute of Technology in 2014. He was drawn by the location, the instrumentation, the research...and the potential to do something bigger.

“THE BIG IDEA IS MAKING QUANTUM TECHNOLOGY EASY TO USE FOR EVERYONE, NOT JUST IN A UNIVERSITY OR GOVERNMENT LAB, AND THEN TO DEVELOP APPLICATIONS THAT HARNESS IT IN WAYS THAT BENEFIT ALL OF US ON A DAILY BASIS.”

“I knew the university’s reputation,” he recalls. “They had a legacy of engineering, access to terrific nanofabrication facilities and a real aspiration to create industrial innovation and entrepreneurship. This was where I wanted to be.”

With the encouragement and support of Stevens leadership, and assistance from such physics colleagues as Ting Yu (“a tremendous mind in theoretical quantum physics, particularly the way quantum systems interact with the environment”) and Stefan Strauf — “he interviewed me for the position, and we have since become very close friends and collaborators” — Huang eventually created Stevens’ Center for Quantum Science and Engineering (CQSE).

Today he spends his days in the lab perfecting arrangements of lasers and light-splitting lithium niobate nanophotonic chips with his teams of graduate students. This curious setup occasionally generates and forces a pair of elusive, poorly understood energy units known as photons to shoot off the chip, divide and travel to separate destinations on campus. (Last year, Huang’s team demonstrated a so-called hybrid quantum network, which may be the first of its kind on a university campus.)

Once those photons arrive at their separate stations, things get very interesting. If you alter either one of the photons in any way, then measure the *other* photon in the pair, you find (presto!) that it has simultaneously changed in a similar way even though you haven’t touched it at all.

Crazy? Impossible?

In fact, this odd phenomenon (known as quantum entanglement) has been demonstrated — even more or less proven, to the extent we can do so — on scales both large and small. It is being used, in tests around the world, to attach information to photons: the baby steps of an exploding new field known as quantum communication, QC for short. Huang’s team hunts for the engineering breakthrough that will finally bring QC to industry on a large scale.

But even as physicists work on the tricky problem of transmitting long-distance, super-secure communications, Huang is already thinking ahead to the next steps.

“The big idea,” he says emphatically, “is making quantum technology easy to use for everyone, not just in a university or government lab, and then to develop applications that harness it in ways that benefit all of us on a daily basis. Stevens has a century-long tradition in engineering and innovation. We already know how to build things that work well, that improve life.

“As a quantum physicist, I will need these collaborators to take the front seats and help engineer solutions, and those people are right here.”

To that end, more than 20 Stevens research groups are collected under the CQSE umbrella, working on a host of projects and potential applications Huang isn’t ready to talk about yet — but to which the National Science Foundation, Office of Naval Research and other agencies have already awarded millions of dollars’ worth of R&D support.

“We hope and believe quantum technologies will be able to solve real, large-scale problems that have so far defeated us,” Huang concludes. “Things like diagnosing, treating and preventing cancer, or protecting private information with perfect security.

“We don’t know which of these will happen first, but I believe many of them will happen here at Stevens, soon, as our team becomes larger.” ❖ — *Paul Karr*

Two New NSF Grants for Quantum Research

The National Science Foundation (NSF) has awarded two grants — one each to Stevens professor Yuping Huang and Stevens researcher Stefan Strauf — to fund quantum research in support of highly secure information networks. The NSF’s new RAISE-EQUIP program is designed to propel advances in quantum communication and will provide \$750,000 each to both researchers’ groups over a period of three years.

Huang, who directs the Center for Quantum Science and Engineering, will focus on developing a scalable integrated chip that creates entangled photons and transmits information across long distances under challenging weather conditions. He will work with the University of Texas at Arlington in an effort to build an efficient, integrated quantum system on a chip approximately the size of a penny.

Strauf, head of Stevens’ Nanophotonics Lab, will collaborate with University of Pennsylvania researchers to build a platform on a chip that can generate, process and detect so-called twisted single photons, on demand, in order to encode quantum information.

“We are at the cusp of creating real scalable and cost-effective technologies that transform bulky laboratory experiments with twisted light into tiny and highly functional quantum photonic chips,” says Strauf.

Both projects could one day help inform the creation of much faster, super-secure information transmission and storage. — *Paul Karr*



Keeping Consumers Safe

ALUMNI PROFILE

Arriving in the U.S. from the Dominican Republic when she was in middle school, Laura Dee '00 didn't speak English. What she did know was numbers. Her teachers noticed that math was an area in which she excelled, and they continually encouraged her to take more math courses. It paid off.

"I'm a senior research scientist with an expertise in gas chromatography and in nuclear magnetic resonance. I dabble in infrared spectroscopy and do a little bit of automated titration."

Dee explains that essentially her job is to use instrumentation to obtain information about the composition and structure of products that her employer, Colgate Palmolive, produces. Based in the company's Piscataway, New Jersey, global technology center, she's worked in the oral care global analytical sciences department for her entire 17 years with the consumer products giant, testing "anything that goes into people's mouths."

Dee laughs when she says she still doesn't know how she got where she is. Retracing her steps, though, it makes sense. Attending high school in Union City, New Jersey, her AP biology class took a field trip to Stevens where she heard a talk on genetics and was fascinated. She decided it was where she belonged and, coming from a low-income family, she says she thought she'd be able to get a good job to help her mom.

"I got accepted to Stevens and was part of STEP (Stevens Technical Enrichment Program). And they were — and are — my family. You're spending 24-7 with these people, you just get connected," she says.

She goes on to say that a year after graduation, it was a member of her STEP family, Martha "Patty" Torres '01 (who was working at Colgate Palmolive at the time), who brought Dee to the company, a move for which Dee is still grateful. Aside from her position, which she genuinely enjoys, Dee is involved in numerous outreach activities through Colgate Palmolive's Hispanic Action Network that help her continue the cycle of support she received when navigating her own education and employment.

It's especially important to Dee to reach out to high schoolers like she once was, so they know that they, too, can succeed in STEM fields.

"We really try to promote minorities in STEM because there aren't a lot of us," she says. "To work for a company that allows you to invest your time in these causes is truly wonderful."

For more on Dee, visit stevens.edu/ldee. ❖

— Rebecca Markley



SOCIAL MEDIA INFLUENCERS AFFECT BITCOIN PRICES

Bitcoin is still making moves. The ultra-democratic cryptocurrency, with many passionate doubters and acolytes, has taken the tech and financial communities by storm. The value of a single bitcoin has soared from approximately \$500 in 2014 to \$4,022 on January 7 (at times, as much as nearly \$18,000).

But can that value be manipulated by public sentiment, as expressed through social media channels?

“Common sense says that perhaps it can,” says Stevens School of Business professor Feng Mai, who led a four-university team investigating the question.

Mai, working with the University of Cincinnati, Dickinson College and Ivey Business School, collected and analyzed two years’ worth of forum posts on the world’s most

popular public Bitcoin forum, *Bitcointalk*.

The team collected the comment data using a Python script, classifying it into positive, negative and other sentiment categories using natural-language processing techniques. They also collected two months’ worth of Twitter data, including more than 3.4 million tweets about Bitcoin.

Using a powerful statistical method known as vector error correction, or VECM, Mai’s team then compared changes

in Bitcoin’s price with the chatter around the cryptocurrency. To account for broader economic effects, the team also factored in daily rises and falls in indicators such as the S&P 500 stock index, gold prices and volatility indexes.

The team’s conclusion, recently published in the *Journal of Management Information Systems*, is that periods of increasingly positive social media commentary do in fact influence the rising price of Bitcoin significantly.

“Many of us probably intuitively believe this, but this was the first robust statistical finding to verify that social media and Bitcoin prices are actually linked,” Mai says.

For more on the study and to read the full story, visit stevens.edu/bitcoin. ❖

— Paul Karr





Committed to (Cellular) Memory

“My aunt called me the other day and told me she has Stage 3 and I was devastated. She asked why it happened and how will she be treated. We talked about her fear of chemotherapy and how it will change her lifestyle. But I told her that cancer is a really bad guy and to kill it, we need something stronger. As with anything else, fighting cancer is a mental process and treatment works better with a positive attitude. While I knew she understood little of my science babble, she tells me she was comforted to hear the confidence and optimism in my voice, and it put her mind at ease.”

Payal Yokota '02 M.S. '04 is spirited. She smiles a lot while talking about her work as an immunologist, and she doesn't take offense when asked to explain things in layman's terms. “We scientists make it difficult for the rest of the world, don't we?”

Having spent years learning about cancer, she's now trying to understand how cancer works. As a postdoctoral fellow at NYU Langone, she's focused on trying to understand what incapacitates cellular memory when the disease strikes.

“To borrow an analogy from one of my favorite immunologists, if you ask a room full of people — ‘Show of hands, how many of you have had chicken pox?’ You'll see that most hands will go up. Now ask them, how many people have had chicken pox twice? You won't see many hands go up. That's because we have immune cells that memorize the signatures of pathogens and create a task force dedicated to recognizing them. So, the next time these immune cells see these signatures, they send the troops and kill those infected cells and thereby stop pathogenesis,” she explains. “What gets me going is what incapacitates that memory in situations of cancer. Because unlike viruses, a cancer cell is not an outsider — it's a self-cell gone rogue — so we want to know how to modulate and modify the immune system to make changes that are long-lasting and efficacious. I've been interested in this for a long time.”

It's an interest that developed through her time at Memorial Sloan Kettering Cancer Center in New York City, where she worked for a number of years upon graduation from Stevens. At Sloan, she developed vaccines designed to target reoccurring tumors upon surgery or chemotherapy. Yokota then moved on to UMass Amherst, where she earned her Ph.D. in molecular and cellular biology with a focus on infectious diseases and how to build immune memory against them. In particular, understanding the role of a subset of white blood cells called T cells (cells that actively participate in immune responses).

While her current research involves working with mice where her team is investigating how cellular memory forms and fails during cancer and viral infections, they hope to eventually translate this work for humans. Yokota says that “the interesting thing about memory is that the T cells are unable to kill pathogens at times because they are outnumbered and exhausted. So, the really important aspect of my

research is to ask why and when this exhaustion happens and how can we fix it?”

This curiosity and affinity for science is nothing new for Yokota. Born into a family of lawyers (her father, brother and sister are all lawyers) in India, Yokota's father saw his daughter's penchant for medicine at a young age. She says that he often tells the story about taking her to a skin disease clinic when she was in sixth grade, which left a deep impression on her and inspired her to become a dermatologist.

“But, Dad wanted me to come to the States to nurture my personality, so when I was 17, he brought me to Stevens a week or two before orientation and then he just left without me,” she laughs.

But she found her way, “being accepted” and making lifelong friends at Stevens — “it was a nerd-pocalypse,” she says. She also met her husband, Eugene (Yu) Yokota '03 M.S. '09, a computer scientist.

“Well, he likes to think he's a scientist but he's not,” she jokes. “Seriously, he's a programmer, but I think of him as a linguist. In his profession, everything has to be simplified for a programming language. That makes him an amazing sounding board because everything has to be distilled to the bare minimum — in order to have an airtight hypothesis — so if he buys it and sees what I see, I know my audience will, too. He's my source of fundamental support and excitement.”

Being able to have a fulfilling career and marriage is something Yokota values and finds important to talk about.

“There are STEM and Women in Science programs that really nurture and mentor younger scientists, and there are so many role models that prove you can have it all: You can have a wonderful career and a family,” she says.

She also says that women are becoming more prevalent in her field and, while there's room for improvement, she sees things getting better. “It's becoming more equal than it used to be.”

Once her research at NYU comes to an end, Yokota is optimistic about her future opportunities. Whatever it is she ends up researching, she'll love it.

“I'm addicted to science so I'm open to anything,” she says. “You know, if you surround yourself with enough scientists, you start to believe that science is the only thing out there that's fun.” ❖ — *Rebecca Markley*

YOUNG GUNS

Undergraduate researchers do big things at Stevens, too

For many undergraduate students across college campuses, the roadmap to a dream career or admission to an elite graduate program might be dotted with impressive study abroad experiences, volunteer work for laudable causes or internships at some of the most influential companies on the planet, like Amazon or Facebook, or maybe all three. (Stevens undergraduates often do.)

But if you're a Stevens student, you can also add perform hands-on, pathbreaking research alongside Ph.D. candidates under the direct supervision of highly accomplished faculty.

"That's exactly why I came to Stevens when I was debating which school to attend. I had done a tour of the biology department and had the chance to meet a Ph.D. student I wanted to work with. I knew then the second I got into Stevens, I wanted to work in that lab," said Steven biology senior Penelope Halkiadakis.

She was able to have the research experience she envisioned, but was still surprised

by the generous mentoring by Stevens researchers, as well as the independence and responsibility she was afforded.

But Halkiadakis' experience is hardly unique at Stevens, according to Professor Matt Libera of the Department of Chemical Engineering and Materials Science.

"Stevens provides opportunities for undergraduate research throughout all schools and departments, and these research experiences can have a powerful impact on the students. In my experience, the really serious students emerge when something in

the project goes wrong. When they figure out on their own, or with the help of others in the research group, how to solve the problem and move forward, that's when some of the magic of the education process really happens," says Libera.

In Stevens' research centers and laboratories, it's common to find undergraduate students working on some of the most pressing research challenges of our time, touching upon such areas as gene therapy, genomics, quantum computing, green infrastructure and infection detection.

Some have even seen the fruits of their tenacious and collaborative labor published in journals, presented at conferences or implemented in the real world.

And no matter the field, most agree that helping advance research that might potentially make a difference in the real world was the defining experience of their academic careers.

Samantha Conte, Class of 2020, and Joshua Ross '18





*Robert Scully, Class of 2020, and
Penelope Halkiadakis, Class of 2019*

Halkiadakis worked in the gene therapy lab at Stevens studying the biological causes of the rare mitochondrial diseases MERRF and MELAS, for which there are no known cures. Under the supervision of professor Peter Tolia and senior research associate Ueli Gubler, and former Stevens professor Philip Leopold, she and then-Ph.D. student Ciara Ann Agresti (who graduated last May) contributed new insights into gene therapy research devoted to curing those diseases.

Their findings were published last summer in the *Journal of Translational Genetics and Genomics*.

“I remember the countless hours in the lab — the ebb and flow of success and failure in experiments — and the sheer number of hours my Ph.D. mentor and I put into writing the paper. After all our hard work, finding out our paper was accepted into a journal was a humbling and amazing feeling,” she recalled.

Robert Scully, a junior majoring in physics, should soon experience the excitement of seeing *his* name in a peer-reviewed, scientific journal as well. He is part of professor Stefan Strauf’s research team studying quantum materials in the nanophotonics lab at Stevens.

For Scully, the publication of that research study would cap off an extraordinary learning experience.

“Participating in research to the degree I’ve been able to do, and operating equipment like the Raman spectroscopy instrumentation I used all the time, are experiences that

AND NO MATTER THE FIELD, MOST AGREE THAT HELPING ADVANCE RESEARCH THAT MIGHT POTENTIALLY MAKE A DIFFERENCE IN THE REAL WORLD WAS THE DEFINING EXPERIENCE OF THEIR ACADEMIC CAREERS.

at other universities are often reserved for graduate students, not undergraduate physics majors,” Scully says. “I’m looking to go to graduate school and continue doing research, and this is a very exciting start.”

For civil engineering major Samantha Conte, a junior, research required being outside most of the time. The Living Laboratory project, spearheaded by renowned green roofs researcher and Stevens professor Elizabeth Fassman-Beck, was ramping up when she came on board in the summer after her freshman year. Located in the North Building on the Stevens campus, the research site now comprises 40 green roof tables, a rain garden and four bio-retention planter boxes.

“I remember building the 150-pound table trays to hold the green roof material that’s now on the building, analyzing the data from the bio-retention planters, spending hours making hydrographs, sitting out in the rain to observe the inlets and outlets to try and figure out what the problems were,” she recalls.

Throughout that process, Conte acquired a depth of knowledge that convinced Fassman-Beck that Conte was the right person to represent Stevens at the NJ Water Environment Association Conference last May.

“I remember professor Fassman-Beck telling me why I needed to present at the conference: ‘No undergrad knows as much about stormwater management as you do now,’” Conte recalled.

Recent graduate Joshua Ross ’18 also knows a thing or two about the real-world impact of Stevens research. The chemical biology major took part in a Stevens-Hackensack University Medical Center collaboration headed by Libera that continues working to develop a rapid-detection technology that can identify bacterial and viral infections before they become life-threatening.

“Our test requires extracted DNA or RNA from a blood sample that’s been spun down, which would be a quicker, easier and more cost-effective method than current tests that involve culturing bacteria,” Ross says.

Ross notes the generosity and patience of Ph.D. students such as Youlong Ma, who shared his knowledge and training, including in the operation of sophisticated hardware in Stevens’ Laboratory for Multi-Scaling Imaging.

“He taught me everything about scanning-electron microscopes and electron beam lithography, which involve incredibly complicated, multimillion dollar pieces of equipment. But more importantly, he also really took the time to answer questions on anything.”

Now in his first year at NYU School of Medicine, Ross says his Stevens experience taught him to see research in very concrete ways, rather than in abstract terms.

“I was an EMT when I was at Stevens. I still am. I’m not interested in research for the sake of research. The most important thing to me is making a feasible, attainable difference. To have worked on a project that I could see being scaled in a large way and saving people’s lives was just incredible for me.” ♦

— Young Soo Yang

A Celebration of

MEET THE PRESTIGIOUS HONOREES OF THE STEVENS AWARDS GALA

From Castle Point to boardrooms, courtrooms, construction sites and production lines, home and abroad, the honorees of the 2019 Stevens Awards Gala have had a palpable impact on industry, society, academia and their alma mater. Hear their inspiring acceptance speeches, see a rousing showcase of Stevens and enjoy the festivities by attending the gala on April 6, 2019, at The Plaza Hotel in New York. ❖



INTERNATIONAL ACHIEVEMENT AWARD **PAM P. CHENG '92 M.ENG. '95**

Pam Cheng is the executive vice president for global operations and information technology with AstraZeneca, where she is responsible for a global organization of more than 18,000 employees, including manufacturing and supply chains, procurement and IT for the leading pharmaceutical company. Previously, Cheng served ascending roles with Merck in the U.S. and abroad, including as president of Merck (MSD) China and senior vice president of global supply chain management. Cheng is a chemical engineer and started her career with UOP/ Union Carbide and ISP.

OUTSTANDING CONTRIBUTION AWARD **PHILIP P. CROWLEY '71**

After a career at Wall Street law firms, Phil Crowley served for more than 30 years as corporate counsel for Johnson & Johnson, advising the pharmaceutical giant on corporate transactions, federal regulations and other legal issues. He now operates his own firm in New Jersey focused on helping high-technology companies. In addition to his physics degree from Stevens, Crowley earned a degree in applied physics from Harvard and a law degree from Columbia. A university trustee for the past 25 years, Crowley served as president of the Stevens Alumni Association and recently on the board of the Stevens Venture Center.

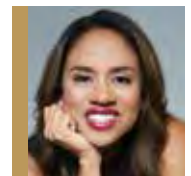


LIFETIME SERVICE AWARD **RICHARD S. MAGEE '63 M.S. '64 Sc.D. '68**

From the classroom to the boardroom, Dick Magee has made a big impact on his alma mater. A former university trustee, past president and long-time volunteer with the Stevens Alumni Association, he has served the university in numerous capacities for more than 50 years. Magee, who was a longtime mechanical engineering professor with Stevens, received the SAA Outstanding Teacher Award in 1979 and 1984, and established a mechanical engineering senior award in his name. Outside of Stevens, he has chaired committees for the National Research Council, testified before Congress and advised the United Nations on the destruction of Iraq's chemical weapons.

YOUNG ALUMNI ACHIEVEMENT AWARD **LEANNE N. METCALFE '00**

An expert in health care economics, Leanne Metcalfe is the executive director for research and strategy at Blue Cross Blue Shield. She earned a doctorate in biomedical engineering from Georgia Tech, and she was a Rhodes Scholar finalist. The U.S. Chamber of Commerce cited Metcalfe for improving the health of patients with asthma and Crohn's disease, and she was a recipient of the Top Women of Color in STEM award from the National Society of Black Engineers.



Accomplishment



PRESIDENT'S LEADERSHIP AWARD

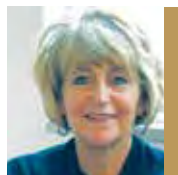
VIRGINIA RUESTERHOLZ '83
HON. D.ENG. '08

From diligent student to devoted alumna, Virginia Ruesterholz, a retired Verizon executive, has shaped an enduring relationship with her alma mater. She was the first woman to chair the Stevens Board of Trustees, presiding for five years, from 2013 to 2018, during an era of unprecedented growth. She continues to serve as a trustee and previously served on the School of Systems and Enterprises board and chaired the Edwin A. Stevens Society. With her husband, Kevin '83, Ruesterholz established the Ruesterholz Admissions Center and endowed an ACES scholarship to support students from underserved communities.

STEVENS HONOR AWARD

RICHARD FREDERICK HARRIES '58

Decades before he became the leading voice to build the Richard F. Harries Tower at the planned university center and residence halls, Richard Harries served Stevens as a resident engineer for the construction of the Howe Center, South Dorm and Palmer Hall. He then served as chief engineer for Frank Briscoe Co. and the Hackensack Meadowlands Commission. In 1971, Harries founded his own development firm, which completed more than 900 projects over the course of 45 years.



DISTINGUISHED ALUMNI AWARD IN BUSINESS AND FINANCE

LISA M. MASCOLO '82

Lisa Mascolo is a C-suite leader with expertise in leadership development and transformation, information technology, business development and change management. She is known for delivering solutions for

her clients and their clients, developing and strengthening the skills and capabilities of her teams, and driving shareholder value. While at Accenture, she led the global public service business. Today, she leads IBM's US Public Service business. Mascolo founded a leadership and executive coaching firm, and she has served on the board of local Washington, D.C., schools focused on educational opportunities for all children. She supports veterans' and women's causes including the Lore-El Center for Women in Leadership at Stevens.

DISTINGUISHED ALUMNI AWARD IN ENGINEERING

ROBERT J. FIOCCO '58 M.S. '61 Sc.D. '64

Robert Fiocco holds 20 patents and published 22 technical papers. He retired as a senior engineering associate with ExxonMobil Research & Engineering, researched for Johnson & Johnson, and was a member of the American Institute of Chemical Engineers. A former Stevens trustee, Stevens Fund chairman and Stevens Alumni Association president, Fiocco received the Thomas Alva Edison Patent Award from the Research and Development Council of New Jersey in 1998.



FRIEND OF STEVENS AWARD

EMILIO FERNANDEZ

A university trustee, Emilio Fernandez is the leading supporter of iSTEM@Stevens, a program to spot instinctive future engineers. Fernandez is vice chairman of Wabtec, a global supplier of technology for the railroad industry. He is an engineering graduate of the University of Maryland with a business degree from George Washington University. Fernandez has served on cultural, academic and corporate boards, including the Smithsonian's National Museum of American History and as chair of the George Washington Medical Center.



To purchase tickets for the 2019 Stevens Awards Gala, visit stevens.edu/awardsgala



FOR LOVE OF THE GAME

Boylan leaves a legacy

At Stevens, it seems like almost everyone knows Bruce Boylan '63. Generations of lacrosse players know him as a Hall of Fame scorer, Delts know him as their proud fraternity brother, alumni see him at countless campus events and wine drinkers know him as the spirited connoisseur who hosts a popular tasting every Alumni Weekend. And, one day, the legacy gift Boylan recently made will connect even more Stevens people.

Boylan's legacy at Stevens starts with his love for lacrosse. He grew up playing other sports in New Brunswick, New Jersey, but at Stevens, he gravitated toward a game that demands speed, grit and seamless stick-handling. "You've got to learn to deal with your stick like it's an extension of your arm, without thinking," Boylan says.

Boylan scored 60 points in 1963, which lasted as a single-season school record for 34 years, and that year he was picked for the



PHOTO: JEFF VOCK

USILA North-South College All-Star Game, where he competed against the best players in the country. He also elevated his teammates. In fact, Boylan's induction into the Stevens Athletic Hall of Fame in 1991 set up later honors for his fellow attackman and good friend, the late Walt Stamer '64.

Boylan learned lacrosse from his beloved mentor, varsity coach Irvin "Buzz" Seymour. "Buzz always encouraged us, and he was full of enthusiasm," Boylan recalled, in a remembrance of Seymour that he wrote for the Fall 2017 *Stevens Indicator*.

Seymour saw more than a scorer; he saw

a leader, making a point to introduce Boylan to opposing coaches and star players. Boylan's teammates agreed, voting him team captain, a role in which Seymour paired him with goalie Dick Magee '63 M.S. '64 Sc.D. '68. As Boylan jokes, Seymour trusted co-captain Magee to get Bruce on the bus for morning road games if he was too rowdy with the Delts the night before, but the two complemented each other well. "Bruce made me a better goalie by challenging me day after day in practice with his well-placed shots," said Magee, who is still close with Boylan. "Equally important was his constant support and encouragement. Bruce was always there for me."

Boylan also stayed close with Seymour for decades; the latter passed away in 2016 at the age of 92. "Buzz was one of a kind," Boylan wrote. "When I think of him, it's 'Give it your all! He was about doing the right thing, always. I miss him.'"

FROM MENTEE TO MENTOR

Boylan maintained his talent for lacrosse, and for connecting people, after he graduated. He played in alumni games into his 50s, and he became an assistant coach. Like his mentor Seymour, Boylan encouraged his players to give their all.

Dave Manhas '88 M.S. '90 M.S. '92 remembers how his friendship with Boylan formed during rigorous practices. "As my lacrosse coach and (quiet) mentor, he was constantly nailing me with lacrosse balls that I had no chance of stopping from point-blank range," Manhas says. "I recall him saying to me as I lay on the ground, 'Rub some dirt on it and get up, and let's do it again.'"

"Over 30 years, his influence and support for not only myself, but also for generations of Stevens undergraduates, remains unwavering. I am so glad to have the honor and privilege to consider Bruce a friend."

A DELT PRESENCE

Many of Boylan's fraternity brothers played lacrosse, and traditionally, Delta Tau Delta has dominated the roster. Boylan is proud of the connection. He regularly organizes fraternity reunions, he helped name Seymour as an hon-

orary brother, and he led the Delts in creating a fund that now supports seven scholarships.

"The amazing thing is, the personality of the fraternity has not changed," Boylan says. "When I started the scholarship in '98, it was because I was coaching guys and hearing them talk, and that camaraderie was just like when I played. It's still there. When I go to the house, they talk to me like I'm one of the guys."

"Bruce has always managed to walk into the house and make friends with whoever the brothers are," says current Delta Tau Delta President Liam Regan '19. "Whenever he's here, the brothers thoroughly enjoy his visits. He takes the time to learn the stories of everyone he meets."

MAKING AN IMPACT

Boylan retired some years ago as an executive with a computer firm, and he spends time with his Stevens friends, especially Delts, often walking to Castle Point from his home in midtown Hoboken. If you go to the alumni holiday party, campus lectures or the annual scholarship luncheon, you'll likely see him, chatting at ease.

Boylan's frequent presence on campus, and his deep knowledge of wine, led to Delt brother Ed Eichhorn '69 suggesting that he host a wine tasting. The event has become a staple of Alumni Weekend, connecting Boylan to new Stevens friends. He enjoys enlightening them on lesser-known wines. "It makes me feel good to give them something they probably never heard of before," he says.

Boylan is gearing up for his next wine tasting on June 1 on campus, during Alumni Weekend 2019. As part of *The Power of Stevens* campaign, he also recently notified Stevens of his plan to leave the Hoboken apartment building he owns as a home for students. Hopefully, they will form enduring friendships at "The Boylan House."

While the Park Avenue building isn't actually on campus, Hoboken has a linked grid where any street connected to Castle Point can lead to it, just as so many Stevens roads lead to a distinguished alumnus named Bruce Boylan.

❖ — Alan Skontra



FOUR 'INDUCKTED' TO STEVENS HALL OF FAME

The Stevens Athletic Hall of Fame inducted four new members last September, who join the 127 outstanding former student-athletes, coaches and administrators whose contributions to Stevens Athletics are forever enshrined in the Hall of Fame. The Stevens Athletic Hall of Fame was established in 1990 to honor the very best in the history of Duck athletics. Also celebrated was the awarding of The President's Cup to two teams — a first in the Cup's history. ♦



The women's fencing team celebrates their win of The President's Cup, awarded to the varsity program — or programs — that best exemplifies both academic and athletic success, and dedicated service to the community. Women's fencing posted a 3.494 cumulative GPA.



The four new members in the Hall of Fame are, from left to right: John Millard '66, inducted for soccer, basketball and baseball; Dana Bacalla '08, inducted for tennis; Melissa Rhode Jablonski '09, inducted for volleyball; and Simon Smith '09, inducted for basketball.



Representatives from the men's volleyball team pose with Stevens President Nariman Farvardin, far left, and Stevens Director of Athletics Russell Rogers, far right. The team was also awarded the 2018 President's Cup with a 3.378 GPA.

CALENDAR

MARCH 12
TUESDAY

SAA Dinner and Forum
Bissinger Room • Howe Center

MARCH 14
THURSDAY

OnStage at Stevens presents "A Celebration of Women," with the NJSO Chamber Players • DeBaun Auditorium
stevens.edu/onstage

APRIL 3
WEDNESDAY

Jed Perl lecture on Alexander Calder, Class of 1919
Babbio 122 • Stevens campus

APRIL 6
SATURDAY

Stevens Awards Gala • The Plaza Hotel • New York City • stevens.edu/awardsgala

APRIL 10
WEDNESDAY

President's Distinguished Lecture Series presents Bruce March, president, ExxonMobil Research and Engineering Company
DeBaun Auditorium • stevens.edu/lecture

APRIL 18
THURSDAY

Old Guard Spring Luncheon
Bissinger Room • Howe Center

MAY 3
FRIDAY

Stevens Innovation Expo • Stevens Campus
stevens.edu/expo

MAY 31-JUNE 2

FRIDAY-SUNDAY
Alumni Weekend 2019

For all events, visit stevens.edu/events

alumni**news**



**A SCENE INSIDE A STEVENS
CHEMISTRY LAB, FROM
NOVEMBER 1958.**

If you can identify this young scientist,
email editor@alumni.stevens.edu.

SAA President's Letter

Reflecting on a period of change

The winding down of one calendar year and the start of another naturally brings us to a time of reflection, to think back on memories and experiences, and to give thanks for them all. It also presents the occasion to look forward to new opportunities and renew our hope for things to come.

These past five years have brought a substantial change to the Alumni Office, many changes just this past year.

In early 2018, Vice President for Development Brodie Remington announced his plans to retire, which he did in December. Since starting at Stevens in June 2014, Brodie was instrumental in Stevens' turnaround, from increasing philanthropic support to our alma mater to working with the alumni leadership to improve the collaborative partnership between the alumni association and the university. It was during his tenure that the Alumni Engagement and Annual Giving programs were integrated in order to build a seamless effort of alumni engagement and giving participation. Most significantly, Brodie has led Stevens through the most ambitious fundraising campaign in its history, *The Power of Stevens*, which surpassed its initial goal of \$150 million last year and is targeting a new goal of \$200 million through 2020.

In August, Melissa Fuest announced she would be stepping down from the role she has held since September 2015 as executive director of the Alumni Office and assistant vice president for Alumni Engagement and Annual Giving. During her years with us, Melissa demonstrated her commitment to our alumni community, working alongside hundreds of alumni to implement innovative strategies to increase alumni participation and engagement, resulting in record attendance at events, as well as record levels of philanthropic support. The connections and relationships that Melissa has helped us to cultivate throughout this time have helped strengthen the association.

In September, we received the heart-breaking news that StacyAnn White, director of Alumni Engagement, had passed away. With previous experiences with organizations and institutions in the New York area, StacyAnn had joined the team in May. Vibrant and with fresh ideas on how to engage our alumni, she had been working with our alumni volunteers to gauge how to implement new programming. We give thanks for the time StacyAnn spent at Stevens, and express our deepest sympathy to her family and friends.

I hope you will join me in giving thanks for the support and dedication that Brodie, Melissa, and StacyAnn have demonstrated to the Stevens Alumni Association. It has been invaluable to our work. We will introduce you to more people who will be filling some of these roles in a future issue of *The Indicator*.

But now, I would like to take this opportunity to welcome Jennifer Mc-Donough as the new Vice President for Development and Alumni Engage-



ment. Jennifer, who started with Stevens on Jan. 14 and succeeds Brodie, has enjoyed a successful career spanning more than 30 years and including a wide variety of leadership roles in development and alumni engagement, with particular expertise in campaigns. You can read more about Jennifer on page 7 of this issue.

As we have shared over the course of the last five years, the alumni association has taken tremendous strides to improve the process and framework used to engage with our alumni.

Under the leadership of Thomas Moschello '63 M.S. '65 and Joseph DiPompeo '98 M.S. '99, we saw the updating of critical documents that

have a direct impact on the strength of our alumni community, as well as the greater Stevens community. Our new Association Board Directors are now implementing a plan to continue working "as one" with the university, while ensuring that the members of our alumni network are engaged. To learn more about our alumni leaders and association committees, please visit www.stevens.edu/alumni. In the spirit of reflection and appreciation, I continue to give thanks for each alum who helped propel the course we are on today. Thank you for seeing each challenge throughout the process as an opportunity to reflect on and strengthen our alumni community. You can hear more from some of our current and past leaders throughout this issue's class logs.

As we continue to make changes, I welcome your suggestions on how we can continue to better serve you, and cultivate and maintain your interest in your alma mater. Please feel free to email me at any time. Best wishes for 2019!

Per aspera ad astra,

A handwritten signature in black ink that reads "Victoria Velasco".

Victoria Velasco '04
President, Stevens Alumni Association
SAA.President@alumni.stevens.edu

The opportunity to actively engage with the SAA in a leadership position has helped me rekindle friendships and develop new ones, and advise recent alumni, all while supporting the Institute and the positive trajectory it is on. — Jeffrey Capone '91 M.S. '95

Class Logs

'43

October 31, 2018 — I continue to correspond regularly by phone with Bill Caldwell and C.H. Anderson. Bill Caldwell reports from his retirement community in Maine that all goes well in the cottage that he designed and that they built for him. He reports that his granddaughter, Julia (who is his daughter Kim's daughter), graduated from Stanford University here in Palo Alto, California, in June with a degree in civil engineering. My recent telecon with C.H. was educational. C.H. advised that growing old is not easy, since he experienced a minor fall recently which was not debilitating. As you know C.H. lives in Charlottesville, Virginia, and has sailed across the Atlantic Ocean three or four times in his 47-foot ketch sailboat and worked for years in the Mediterranean using his boat during that time.

In June 2018, the following classmates enjoyed a 75th Class Reunion via telephone conference:

R.M. Andersen, C.H. Anderson, Bill Caldwell, Ted Duncan and Ben Lewis.

Should any of you wish to contact them, just email me at rmandyandersen@comcast.net.

Photo herewith is of me on my lithium battery powered electric four-wheel scooter which I highly recommend. Contact me if interested. — Roland M. "Andy" Andersen, 20 Valley Drive, Orinda, CA 94563-3534; (925) 254-3789; rmandyandersen@comcast.net

Alumni Weekend reunion, 5/31/19 – 6/2/19

'44

It saddens us to learn that Lewis Stone Goodfriend of Longmont, Colorado, passed away on Monday, July 30, 2018. He was 95. Lewis was a long-serving member of INCE and contributed much to noise control engineering.

Lewis was born in 1923. He was predeceased by his parents, Henry Bernheim and Jane Elizabeth Stone; his sister, Grace; his brother-in-law, Herbert Shaw; his son-in-law, John Chaffee; and his wife, Susan Banker. He leaves behind three daughters, Karen Chaffee, Anne Oberg, and Jane Strandberg; Jane's husband, Steve; a son, Henry; and his nephew, Brandon Shaw. He also leaves behind grandchildren Corey, Lexie, Gracey, Cameron, Ian, Emma, David, Mary Louise, Victoria, Henry, Crane, John, and Brenda; and great-grandchildren Hannah and Ellie.



Andy Andersen '43 checks in, with updates from some longtime friends.

Lewis enjoyed ham radio, traveling and spending time with his children and grandchildren. He was passionate about continuing to advance his profession and had a lifelong enthusiasm for learning. He loved science, art, and photography, and he enjoyed going for walks and riding his bike. Helping people in both his personal and professional life was very important to him. He will be dearly missed.

Lewis received his degree in mechanical engineering from Stevens Institute of Technology in 1947 and his master of electrical engineering degree from the Polytechnic Institute of Brooklyn in 1952.

Lewis served in the United States Marine Corps from 1943 to 1945. He was a combat veteran on several islands in the Pacific Theater, including Guam, Guadalcanal and Okinawa, serving as a radio operator.

Earlier in the war, Lewis worked for the Office of Scientific Research and Development on special projects contributing to the successful execution of the war.

Lewis served as president of Lewis S. Goodfriend & Associates from 1953 to 2002. He was a consulting engineer serving clients in the areas of architectural acoustics; noise assessment and control programs for industry, communities and airports; air-conditioning noise control; and product development.

Lewis was a fellow of the Acoustical Society of America and the Audio Engineering Society. He was a past president and former member of the board of Directors of the Institute of Noise Control Engineering; senior member of the Institute of Electrical and Electronics Engineers; a member of the Consulting Engineers Council, the American Industrial Hygiene Association, and American Society for Testing and Materials; and served on the Board of Trustees of Stevens Institute of Technology. Lewis also served as editor of the *Journal of the Audio Engineering Society*; *Noise Control*, a publication of the Acoustical Society

of America; *Sound and Vibration Magazine Noise Control Engineering*; and the *Noise Control Engineering Journal* of the Institute of Noise Control Engineering.

Lewis authored two books, *Sound in the Theater* and *Acoustics for the Architect*, both with Harold Burris-Meyer. — [The Stevens Indicator](http://TheStevensIndicator.com), 1 Castle Point, Hoboken, NJ 07030; (201) 216-5531; alumni-log@stevens.edu

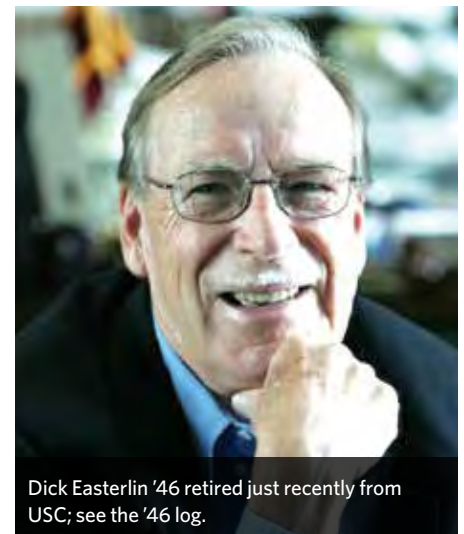
'46

Happiness and other stuff... Following is the copy of a message dispatched in mid-October — at the peak of Vermont's flaming fall foliage display — to my computer-connected classmates:

Hey guys, if you received the Fall 2018 issue of *The Stevens Indicator* in this week's mail, you'll have read it by now and noted in the Class Log that I'm really counting on you to send me something/anything to let us know (1) that you're still alive, (2) that you can still read, and (3) that we'd really like to know how you're spending your "golden years" as nonagenarians. Make it a "Day in the Life of _____" essay, as short as a long sentence or as long as a half page.

Unfortunately, within days of the issuance of each periodic *Indicator*, the Alumni Office reminds class secretaries that the deadline for the magazine's editor is about a week away. In this instance, my deadline for the receipt of copy is Teddy Roosevelt's (and my) birthday (Google it) so please send us the gift of your gab.

This appeal is being sent to the ten other '46-ers whose email addresses are on file at the Alumni Office...of the 32 living classmates listed, so you have first crack at having your immortal



Dick Easterlin '46 retired just recently from USC; see the '46 log.

SAA Update

The Stevens Alumni Association has welcomed a new group of leaders to its Director Board; they represent a variety of class years, professions and Stevens experiences. Meet Olivia Schreiber '18 and hear from more members in future issues of *The Indicator*.

What is your new role in the SAA?

As a Stevens Board of Trustees young alumni trustee, I am also an appointed voting director of the SAA and now chair the Recent Alumni and Current Students standing committee. The committee's main objective is to create relevant programs that will better connect our most recent graduates back to Stevens and cultivate philanthropy at the undergraduate level. I am also a Class of 2018 officer.

Why is it important for you to continue to support Stevens with your time and financially?

Stevens opened a lot of doors for me. This

university provides many opportunities if you work hard and open yourself up to different experiences. Now, I want to pay back with all the resources I can provide, including time, energy and dollars.

What do you hope to change or improve about the SAA/Stevens Alumni committee?

The transition from college to "real life" isn't always the smoothest — you might be required to move for work, start a career in a completely different field and pay back student debt, all at the same time. I hope that the SAA and Recent Alumni and Current



Olivia Schreiber '18

Students Committee will be able to implement programming that connects recent and older alumni, to show them how to balance all the changes after leaving Stevens. I envision the SAA as a supportive network that all alumni can fall back on whenever they need a career change, financial advice or want to dedicate their time and resources back to Stevens.



words published. Think about it; do it! Make an old man smile with happiness...

I did get this welcome response from Dick Easterlin:

"Hi Dick, Retired last year from USC where I was professor of economics. Happiness is my thing. Google 'Easterlin Paradox.'"

Well, I *did* Google it and was enlightened by this fascinating entry:

"The **Easterlin Paradox** concerns whether we are happier and more contented as our living standards improve. In the mid-1970s Richard Easterlin drew attention to studies that showed that, although successive generations are usually more affluent than their parents or grandparents, people seemed to be no happier with their lives. It is an interesting paradox to study when you are writing about measuring economic welfare and the standard of living.

What is the Easterlin Paradox?

- 1) Within a society, rich people tend to be much happier than poor people.
- 2) But, rich societies tend not to be happier than poor societies (or not by much).
- 3) As countries get richer, they do not get happier.

Easterlin argued that life satisfaction does rise with average incomes but only up to a point. Beyond that the marginal gain in happiness declines.

Easterlin and others...have spawned a huge

amount of research into the economics of happiness and well-being.

One of Easterlin's conclusions was that relative income can weigh heavily on people's minds.

Faced with this choice, what would you rather have? You get £5,000 and a friend gets £3,000 or you get £10,000 and a friend gets £15,000?

Some economists have challenged the Easterlin Paradox. There is a continuous debate about whether we can actually get accurate and reasonably objective measures of our well-being. Clearly income is just one of many factors that influences how satisfied we are with our lives."

For further study, here's more from Dick: <http://www.bcf.usc.edu/~easterl/papers/Happiness.pdf>

(The term *paradox* is from the Greek word *paradoxon*, which means "contrary to expectations, existing belief, or perceived opinion.")

Thanks, Dick; here's your "reward" for this intriguing tidbit, the result of another research effort — a look at your entry on page 101 of the 1945 *Link*, above your smiling apprentice seaman mug shot:

"A connoisseur of alcoholic beverages, 'Easteregg' is reputed to know every bartender in Queens County...never seems to get enough sleep...an outstanding Stuteman in his grades but otherwise an all-around good guy...From Spring to Fall, he can be found basking on the sands of Rockaway, surrounded by a group of female fans...quick of foot as well as mind, he is a small working model of Gunder Hagg...keeps in trim by

pursuing fast women...Richard Ainly Easterlin, *Who's Who - 2055.*"

Some might find these peer observations embarrassing, but flattering could just as well apply. I don't know much about Queens County, but I seem to recall that the number of beer joints along River Street between the Hoboken Ferry terminal and our campus totaled more than I've ever seen along such a limited route before or since those V-12 days. At any rate, Dick, I appreciate your speedy reply and hope that your retirement years are as happy as mine have been. Since I started my (remunerative) retirement 29 years ago, I'm sort of surprised that you labored on with USC so long — but that's another paradox...

BTW, did you note in this issue that '46 is now among the first classes listed among the 26 pages of Class Logs, an honor I guess, but one that I sort of dreaded. The small number of early classes writing it doesn't mean that all members of earlier classes are deceased. It may mean that earlier class members have let down their respective class secretaries in the mistaken belief that intra-class communication wasn't valued by their classmates. Let's hope that's the only reason for our standing "atop the pinnacle."

Warmest regards...and good health...to all — A. Richard Boera, 90 Allen Road, Apt. 16, South Burlington, VT 05403; (802) 495-5815; arbjob@comcast.net

'48 News from our Class of '48. Our ranks are surely thinning, but we have some great guys left!

Had a great phone call with **Bob Bruce**, who is living in Hampton, Virginia. Bob was with NASA at Langley Air Base (adjacent to Hampton) for many years and is now retired. Though now confined to bed, Bob sounded great during our talk on the phone, with a very positive attitude on life.

Good conversation with **Martin Graham** (originally Goldenberg). Having his own interior design company, he has done custom designs for 35 years for customers in many locations. In addition, Martin found time to teach ballroom dancing in the evenings. Earlier, he reduced the teaching of ballroom dancing to one evening a week and now has retired from this activity. On the telephone, he sounds like he will be with us for many years!

One of the pleasures of serving as secretary are the great conversations with our classmates. We Stevens graduates all seem to convey a strong positive attitude on life, and an active interest in events.

And **Dan Haagens** is another great example. I received a superb input from Dan, which is included as follows:

"Attached is a brief description of HOSPACT®. I had a 1994 backup tape of all the IBM libraries involved. I managed to have it copied to my PC. That involved baking the tape to drive out moisture. The tape traveled to New Jersey, then Houston for baking, back to NJ for copying. The vendor emailed me the contents, which is a group of downloaded Partitioned Data Sets in EBCDIC and compressed. I wrote a Fortran program to peel this apart and convert from EBCDIC to ASCII. Unfortunately the structure of the files is tailored to restore the PDSs to an IBM mainframe and I could not find a correlation between the PDS directory and the location of PDS members on the tape. The online literature helped a little and I am going through a laborious procedure to recover all the programs. I hope to create a version that will run on a PC together."

The following is the report from Dan concerning **The History of HOSPACT® (Hospital Patient Accounting)**:

"Starting in 1967, Hospact was originally developed by IMI (Information Management Incorporated) a firm organized in San Francisco in 1965 by Daniel Haagens and John Gilbert. HOSPACT was written in COBOL, the then-fairly new business computer language, which IMI

specialized in. HOSPACT was constructed as a modular system with seven main components and over 50 sub-programs, as well as a number of ancillary components.

"Original versions were IBM 360/370 based. Later developments included GE and Control Data versions. HOSPACT ran in service bureaus and hospitals in several locations around the country. A major installation was at Mt. Sinai Hospital in New York City in 1973 where it operated successfully for 20 years on a large-scale IBM compatible system.

"HOSPACT prorates costs to up to four insurance carriers, handled inpatients, clinic and outpatients. It produced bills, 3D party statements and dunning notices. It survived several management reorganizations at Mt. Sinai until 1994."

Talking with **Jim Ware** is always a pleasure. Unfortunately, I caught Jim at a bad time - but he seems fine!

My calls to **Eddie Cassinis**, **Howard Heydon** and **Curt Van Valkenburgh** did not connect, so I left my message. I will forward to you any input received.

Gus Scutti died on February 10, 2018.

Thus far, that's a total of eight (Robert Bruce, Eddie Cassinis, Martin Graham, Dan Haagens, Howard Heydon, me (Lou Shook), Curt Van Valkenburgh and Jim Ware) of our remaining 15 members of Class '48. The seven remaining members are **Peter Ash**, **John Koziol**, **Miles Kuchar**, **John Hayes**, **Francis Murray**, **John Nelson**, **Peter Hannan** — of whom we had news four months ago. More about them next time.

If you would like contact information for our classmates, call the Alumni Office at 201-216-5163 or email alumni@stevens.edu. — **Louis L. Shook**, 220 Bay Colony Drive, Virginia Beach, VA 23451; (919) 619-3955; loushook@cox.net

'50 October 31, 2018 — **Walt Carow** again. I'm taking on the role of class secretary and will be doing the Class Logs. Thanks to **Bill Vande Vaarst** for his years of service.

Got a list of surviving class members and have called a few for an update.

Edward Havranek (echavranek@comcast.net) responded to my email in the last issue "Hi Walt, I don't know if you remember me but I was one year behind you, '51. We had some conversations from time to time. Elsie and I now live in Denver, Colorado, in an independent living facility named

“

My involvement in the SAA has let me strengthen my connection to Stevens while learning more about major improvements recently made as well as planned. It has also allowed me to meet and reconnect with alumni, bringing back memories of my student days. — **Frank**

Roberto '76

”

Brookdale University Park. It is not really independent when you have to rely on their transportation, which is not always available. We moved from Point Pleasant, New Jersey, in March, after 23 years enjoying the beach. You make a lot of friends here. We had a few inches of snow Sunday but it warmed up enough to melt it all."

Sorry others did not email but here are some notes from members I called. Just finished a long call to **Joe Finnerty**, a fantastic, prolific character, busy enjoying life with six kids nearby. He is 91 and lives in Scottsdale, Arizona. Moved from NYC to California in 1954 and after an MBA and a number of jobs, moved to Arizona to work on a statewide water supply system — The Salt River Project.

Jim Mitchell, 93, says he has had six careers starting with Union Carbide and moving to four different divisions, over 15 years. Then consulting in chemicals, etc., traveling to the Middle East for eight years. He was invited by the State Department to go to Korea for three and a half years. Had a schooner built and sailed the Yellow Sea. Had a smaller boat built and shipped it to Panama where he sailed it to Maine where he now lives (1,000 feet to the ocean or a cove) with his wife Lorrie. Did five books on photography and women's place in history. Fully retired in 2010. Takes no prescription medicine and has no spare parts and is living a full life. — **Walter M. Carow**, 12300 Vonn Road, Apt. 5307, Largo, FL 33774; (727) 593-3234; E: wcarow@yahoo.com

'52 October 31, 2018 — Our class of 1952 lost one of our most valued and trusted leaders when **Frank Ross Troeger** passed away on October 15, 2018 in his home in Rancho Palos Verdes, California. In a call with Frank's wife, Marcelite, I learned more information about how he had been

dealing with Parkinson's disease for quite some time and had been able to receive loving care from her, their family and friends, supplemented by 24/7 care. We send our sincere condolences to Marcelite and the family for our classmate and valued friend, Frank Troeger.

Frank Troeger was born in Hoboken, New Jersey, on August 9, 1931. By the time he entered Stevens Institute of Technology in the fall of 1948, he had a scholarship in hand for academic excellence awarded to graduates of the Hoboken school system. It was one of many scholarships he would earn over the coming years.

During his undergraduate years at Stevens, Frank distinguished himself in many ways, both as a scholar and in his commitment to the school's undergraduate activities and honor system. He served many editorial roles including: press relations co-manager, *The Stute*; co-sports editor, *The Link*, and *Events* magazine. He had a deep respect for the school's honor system and served on the Honor Board as a member, secretary and then president in his senior year. He was also elected and served on the Student Council which guided the many student extra-circular activities. He was a treasurer of the Delta Tau Delta fraternity. With all these activities, he maintained his Dean's List for academic performance for all four years. This included earning membership to Khoda, as president in his senior year (a select group of upperclassmen who interviewed and provided guidance to incoming freshman) and the Gear and Triangle (an extra-circular activities honor society). For his academic performance he was awarded membership in Tau Beta Pi (an engineering honor society) and Pi Delta Epsilon (a journalism honor society). Athletically, his interest was in the Gym Club and soccer. At graduation, he was able to meet all his college expenses with scholarships including those of civil engineering and William Macy Awards.

In the Stevens class yearbook, Frank was described as a soft-spoken, easy-going leader who had an uncanny ability to make the organization of a mountain of activities and schoolwork seem like a snap. When he graduated, he joined fellow classmate **Erwin Muller** in accepting offers from Hughes Aircraft in Southern California. One of the inducements was that they were encouraged to further their education at the company's expense. Both earned master's degrees at UCLA. While neither finished their professional careers with Hughes, Frank met his wife while attending UCLA and eventually spent his professional life

in Southern California where Frank and Marcelite raised their family in their Los Rancho Verdes home while he pursued his professional and refereeing interests.

Frank described that his primary profession had been aerospace guidance systems, working as a technical consultant to the Air Force on ICBM and launch vehicle programs for 40 years, principally specializing in the hardware and software of their onboard guidance systems. He considered his challenge as being able to come up with simple explanations to subtle problems in technically sophisticated systems. Athletically, he continued his interest in amateur soccer refereeing — youth and adult — for 44 years and was the founding president and long-time scheduler of the referee association which had grown from fewer than ten members in 1976 to over 2000 while he was there. He received special recognition for his contributions in promoting and developing soccer in Southern California.

He did write in the class' 50th class reunion survey that he was most proud about being married to the same woman, Marcelite, for his entire married life with three sons and a daughter, six grandchildren and one great-grandchild.

Since the previous log, I have received phone calls and updates from several other members of our class including **Pete Rodts**, **Bob Mahra**, **Charlie Kientzler** and others. Pete and Nancy Rodts were on their way driving home from their summer residence on Nantucket Island and returning to their year-round home in New London, New Hampshire. Pete said that New London's a wonderful location to live, especially if you like winter sports, and that his wife, Nancy, still does some downhill skiing. I mentioned that the town of Siasconset was located on the far Eastern part of Nantucket Island and that sounded like it was close to the Atlantic Ocean; Pete said they have enjoyed their summers there also. A lasting memory and a longtime activity that Pete talked about from his undergraduate years was the Stevens Flying Club. This was a most unique organization that formed on campus after World War II when a group of ex-aviators purchased a surplus Aeronica Champion high wing mono-type plane and kept it at a nearby airport where students could learn to fly quite inexpensively. Pete was one of their students and embraced his ability to fly. He received his license and had been an enthusiastic pilot until age limited the activity.

I have now over-spent my 800-word log limit but want to thank the others for their informa-

tion. By the time the next log is due, and if I'm still in good health and able, I will have plenty of information to start that log. — **Robert F. Wolf**, 3740 Broadview Road, West Lafayette, IN 47906-8608; (765) 497-3853; bobw3740@gmail.com

Alumni Weekend reunion, 5/31/19 – 6/2/19

'54 October 31, 2018 — I received a very nice and totally unexpected email from **Harold Bossung**, who provided us all with a synopsis of his retirement life. Bos retired in early 1990 from Boston-based Stone and Webster Engineering Corp. after a 26-year career. Since retirement, he added a new dimension to his life: "new experiences." Turns out his church secretary suggested that he do some volunteer work at a homeless shelter in downtown Boston distributing clothing to homeless men and women. After about ten years of doing that, Bos trained to be a hospice volunteer at a ten-patient hospice homeless shelter in Wellesley, Massachusetts. He has now been doing that for 14 years. Bos said that studies show that people who are happy show the trait of compassion. He also believes — and I do, too — that one doesn't need a fancy title on their office door or need material wealth to be happy. Well said! Bos mentioned that he has added two sports to his life, pickleball and stand-up paddling, which are keeping him in shape. It sure was great to hear from you, Bos, and many thanks for your note. For a future *Indicator* article, hopefully you'll provide us with a resume about your marketing career at Stone and Webster prior to your retirement.

A welcome note from **Pete Kalika** passed on some of his observations that I will share with you. Pete said that from what he has observed of old codger engineers from our age group, we are mostly cynical, poorly informed duffers whose best years are firmly lodged in our rear-view mirror. But that most of us have optimistic thoughts on a regular basis because of our education at Stevens Tech and that our early experiences filled us with a "can do" approach to our professional challenges. Pete goes on to say that whether this is due to influence from our teachers, student leaders or just overall love of what we chose to do with our lives, is hard to nail down. But Pete says it works and that if you need an answer to a problem, just ask a Stevens engineer. Good advice Pete!

Well, all that is the extent of the input from our class. I hope that you and your family are well and that nobody experienced some of the unusually severe weather that recently hit our shores, like in certain parts of Florida and the East Coast. Please consider providing me with some input for our next *Indicator* class log. — **Jack Sanborn**, 3994 Ballynahown Circle, Fairfax, VA 22030-2498; (703) 754-6499; Jack62@aol.com; Pres. **George J. Hromnak**, 45 Glenridge Blvd., Homosassa, FL 34446-4450; (352) 382-7445; ghromnak@embarqmail.com

'55 Oct. 31, 2018 — It is no mystery that as classes grow older, their tendency to contribute news diminishes. Our class, unusually so despite that tendency, has never over my 59 years as class secretary missed a column because of that kind of slump. My latest device for forestalling such a slump is my silent addition of five of our classmates to be the class secretary's (i.e., my) "class news committee." The resulting informal cross-fertilization among various constituencies of friends among our classmates has been productive, so I now can present a working committee to you for our collective use henceforth. You are hereby offered (if it fits your needs) interaction with one or more of the below named committee members (in addition to with me as class secretary) toward the end of stimulating and aggregating class news about our various classmates' lives/careers/families, at any previously unreported stage. The news is there; let's smoke it out better by tapping more sources. Pass on what you know or hear to one of the below committee members (or to me directly, if you wish), and I will edit the bits and pieces and send it all to the *Indicator* editor.

Every classmate should be able to find at least one member of the below-listed committee to which he would be comfortable mentioning new life events: (grandchildren? retirement location?). Contact me or one of those committee members to forward your news/events/observations, via their email (or postal) address or my email/postal address for my combination into a column. Here are the committee member names (alphabetic): **Dick Cimera, Ed Hess, Rich Muller, Tom Wright, Joe Wolf** (further volunteer "gatherers" are welcome).

Dick Cimera has already implemented the (above) "news gatherer" role. The *Newark Star Ledger* has published a list of 35 New Jersey



Marie and Chuck Filippone '57 and their family celebrated the wedding of granddaughter Katherine Bulling to Salvador Fierro Dalmases last June in Zaragoza, Spain. Read more in the '57 log.

PHOTO: ANA CARMEN ALEXANDER

colleges, ranked by the median salaries attained 10 years after enrollment. These were obtained from the federal government's College Scorecard website. The paper published the list of 35 New Jersey institutions, but many of you either don't live in New Jersey or missed the article. So, a perfect "news gatherer" situation. Rich sent the article to me, and I (and *The Indicator*) am hereby spreading it to the whole class through you and *The Indicator's* office.

The top 10 are Stevens (\$89,200), Princeton (\$74,700), NJIT (\$68,500), The College of New Jersey (\$58,500), Rutgers (\$57,900), Seton Hall (\$57,200), Ramapo (\$53,200), Drew (\$52,700), Rider (\$50,600) and Monmouth (\$50,500). Spady editorial: The Stevens to Rutgers comparison will probably be fruitful in Stevens' recruiting direction, particularly for commuters (as yours truly was). — **James A. Spady**, 200 Locust Street, 8D, Philadelphia, PA 19106-3917; (215) 922-1606; (215) 880-3989; kinneyj@wharton.upenn.edu

'57 The six months of April to October 2018 have been the most exciting of my life!!

In early April, I was taken by ambulance to a local hospital, followed by two weeks at a nearby rehab center undergoing around-the-clock treatment for a blood infection!

Marie conferred with my medical caretakers and they agreed that it would be better to administer my meds for the next two weeks (end of April) at home!!

At this point, the infectious disease specialist had determined that the blood infection had been caused by a cracked molar in the lower left side of my jaw and its removal was done the first weekend in May. We spent the month of May

trying to get me well enough to make a trip to Spain for the wedding of our favorite (and only!) granddaughter during the first weekend of June. Katherine had been working in Spain for the last six years and met her (now) husband there three to four years ago.

Literally, the day before we left, my brother the M.D. was calling Marie, expressing his concern whether I was well enough to make the trip to Spain — which we did on 5/30/2018 — and thanks to Katherine's father (our favorite son-in-law!) and the groom's family, I rarely took a step the five days we were in Spain without physical support getting around!!

The church wedding was magnificent, as was the food we enjoyed before, during and after the wedding celebration!!

The rest of the month of June and July and August were uneventful, but in September (on the 14th), Marie and I celebrated the 60th anniversary of our marriage, accompanied by two of our three daughters and their families, the oldest from NYC and Katherine's parents from Ohio. The bonus highlight of this event was that Katherine and her husband were in the states for the wedding of one of her college classmates in nearby Connecticut, the day after our anniversary celebration.

What A Year, So Far! — **S.J. "Chuck" Filippone**, 84 Paul Place, Fairfield, CT 06824-5836; (203) 254-3197; sfilippone@aol.com

'58 August 26, 2018 — After starting this log on the date shown, I found out it's not due until late October, but I persevered. I'm starting it on Labor Day weekend, sitting on our front porch, watching the crowds go by heading for the last gasp of summer at the Avon-by-the Sea

beach on the “Jersey Shore.” Lately we feel the summers fly by and we know we will be looking for any signs of life during those bleak winter days (which is why we try to travel a lot during winter). Thankfully we’re not in Hoboken this week — in case you didn’t know, the streets are flooded again — the 18th water main break so far this year. I understand when we graduated the pipes were already 50 years old. Sounds like an interesting project Stevens undergrads could tackle but I’m sure the main solution (I hope you saw the pun) is lots of \$\$\$.

Once more unfortunately I must report some sad news—we learned that our classmate **Bill Ziganto** passed away in late July at the age of 82. We learned roundabout—**Bob Fiocco** sent me an email after a call from **Dick Zemann**. (In the back of my mind I think one of them was best man at the other’s wedding, but I may be wrong.) I was surprised since I spoke to Bill in April as one of my contacts, and after years of not participating in reunions because of health issues, he said he might try to make the 60th. For those interested, I googled Bill’s obit and found a nice writeup with a recent photo showing a distinguished gentleman. Bill’s wife passed away some time ago, but on behalf of the Class of 1958, we offer our condolences to the Ziganto family.

Speaking of our 60th reunion, I was hoping by now we would have seen the latest issue of *The Stevens Indicator* which should be highlighting our 60th in addition to **Rich and Carol Harries’** outstanding financial gifts to Stevens. I’m mainly interested for your benefit, in the photos, including a class photo of all attendees. We did receive a short Stevens publication, once again showing **Rich** with a matching funds check, since we met his challenge of achieving ten Legacy donors. It includes a photo of **Roger Bond**, who was the tenth Legacy donor. Once again, we were very glad both **Roger** and **Art Bendelius** joined us at the reunion, as they both lost their wives in recent months. We received a copy of the memorial service held for **Ginny Bendelius**, which showed that she not only attended most of our reunions but was obviously much loved and active in many of the social events of the Big Canoe/Atlanta community.

We had a few events involving participation by ‘58-ers. The first was a Jersey Shore Stevens mini-reunion. (I always vigorously point out that this has no connection with an obnoxious TV program with a similar name.) Our Stevens event was held at the Asbury Park “festhalle” (or beer

garden), fairly new to the area. Unfortunately, it was a midsummer extremely hot afternoon, held on the roof at a place supported by the under-30 crowd (fortunately not as unruly as the TV bunch). Consequently, it was not well attended. My wife and I joined **Rich Harries** and **Carol** as the only ‘58-ers, but we did know some people from neighboring classes. Indirectly it got me a visit to **Rich and Carol’s** beautiful Bay Head, New Jersey, home, which he said he had to re-design and renovate, and since it’s right on Barnegat Bay, had the obligatory boat tied up to the dock.

The next events were the seasonal Old Guard Luncheon held in late-September, followed by the Philanthropy/Legacy Dinner at the end of the month. The usual suspects showed up at Old Guard: **Mestanas, Fiocco, Bonner, Walker and Boyle**, and heard an interesting talk by a Stevens professor on the U.S. decisions to drop the atomic bombs on Japan. Our class and **Rich and Carol Harries** were highlighted at the legacy dinner for having the largest number of members, and **Rich** for the matching challenge. Other attendees included **Nick Mestanas** and **Jasmine, Bob Fiocco** and **Sue Ellen**, and **Mike and Pat Bonner**, with **Barry Ficken** and **Gael** (they could not attend) cited for his leadership. I was very glad to see they included the wives in the commitment and honors.

Just as I was putting this column to bed, I received a call from our long-missing friend **John dePillis**, still emeritus professor of mathematics at U California/Berkeley, and still active cartooning and giving talks at various universities on his main books, one on relativity mathematics and the other more popular 700+ math topics as conversation starters. **John** was sorry he couldn’t attend the 60th but had a personal commitment he had to take care of. **John** plans to come east around the holidays and I encouraged him to contact Stevens about him giving a talk, maybe at its relatively new College of Arts and Letters, since he is something of a pioneer in combining engineering, science, writing and cartooning as an art form, while we were still a hard-nosed MEcampus. He planned to follow up. **John** sounded strong and healthy and mentioned that he attended a birthday party for **Bill Giles**, who lives near San Jose and who still does mountain biking !!, a while ago. We talked for at least a half hour, on family, travels, career activities, some of which I’ll follow up on in the next log.

As always send me some news, otherwise I’ll have to talk about our two weeks in Vermont followed by an enjoyable river cruise down the

Rhine, plus Milan and Amsterdam (New York’s Times Square in the 50s). — **Michael F. Bonner**, 329 Sylvania Ave., Avon by the Sea, NJ 07717-1242; mfbonner@optonline.net

Alumni Weekend reunion, 5/31/19 – 6/2/19

’59 October 31, 2018 — SAVE THE DATE! Believe it or not, our 60th reunion will be coming up in 2019 on Alumni Weekend. Thanks to our tireless “instigators” like **Leo Collins**, a number of special events are planned for the Class of ‘59. Here are preliminary dates and times:

Friday, May 31

6 to 9 p.m. - Welcome Reception and Complimentary Dinner for Class of ‘59

Saturday, June 1

Noon to 2 p.m. - Special Luncheon for Class of ‘59
2 to 6 p.m. - Afternoon Activities
6 to 7:30 p.m. - All Alumni Celebration Reception
7:30 to 11 p.m. - Alumni Dinner Dance & Awards Presentation (*reserved tables for the Class of ‘59*)

Sunday, June 2

8 a.m. - Farewell Breakfast

Gents, there won’t be too many more reunions for many of us, so consider this a “Command Performance,” even if you need to bring your cane or a walker. For more information on the reunion, email **Leo Collins** at Lfc27@aol.com or contact the Alumni Office at 201-216-5163 or alumni@stevens.edu.

Now for some class news. I’m sure most of you remember **John “Slats” Slattery**. **Slats** started with our class and opted for the “five year plan,” graduating in 1960. I recently asked him to give me news for *The Indicator* and he sent a beautiful “Adult Life Span of About 60 Years,” but it was 1,454 words long and this column is limited to 800 words, so he replaced it with this “Reader’s Digest” condensed version:

“Dear George,

“Upon graduation I worked at Columbia University. **George Pezold** and I shared an apartment near Columbia as **George** was a law student at NYU. I later moved to Princeton, New Jersey, from Columbia to a facility where industry tested the effect of radiation on their products as many thought radiation could square the circle and turn coal into gold. It did not!

"I soon married my dear Judy, a damsel I met in NYC, and joined a Swedish company which built heat exchangers for industry and rediscovered the principals of heat transfer including how to convert BTUs per. sq. in. per hour/degree temp. differential to U.S. dollars. Also, I learned to endure the Swedish feast of St. Lucia and drinking glug. While living in the Princeton area, Judy and I had our first child, Sean. My next job was with ESSO's Engineering/Construction Co. After joining I discovered I was one of ten engineers recruited from outside the company rather than inside as was the practice. Of the ten hired, I was the ninth to leave as the qualities valued in us new hires assured we would quickly become dissatisfied with the company. During this period, Judy and I had our second son, Colin.

"I next joined PDM, a steel fabrication/construction company, and we moved to Pittsburgh for training, then relocated to the NYC office. It was an exciting time, major projects were aplenty at PDM, including the first 16 stories of the World Trade Center buildings and the St. Louis Arch. For Con Ed, we constructed an underground fuel storage tank built under a park occupying a block on East 33rd Street in Manhattan. The park was removed and replaced after the tank was fabricated in place.

"I next joined Allied Chemical's coal coking division and worked for **Walter Carbone '34**, a Stevens graduate, and great mentor. We built coke oven plants for the steel industry, starting to show signs of decline, I didn't notice! I traveled throughout North America and during this period we had our third son, Gareth.

"Once again, the Slatterys pulled up stakes and moved to Chagrin Falls, Ohio. We all thrived as a family here, where our fourth child Samantha was born. She was a delightful change for our family and to this day keeps all of 'us guys' in line. Five years later I was offered a chance to join, as a 'key executive', a small engineering company designing furnaces for the steel industry. This turned out to be a great success, except that I discovered too late the fine print in my contract said that profits were not shared with anyone but the owner. I was naïve...but that's a story for another day.

"I looked for another position in New England where we had family and found a spot in Portland, Maine. Judy decided to pursue a law career so she enrolled in Maine School of Law as a full-time student, and three and a half years later hung out her shingle. Soon, two of our

children started college and two sons enlisted in the Marines. Years later we are all living in New England, including six grandchildren. I spent 15 years working for an industrial general contractor in Portland which acquired an electrical contractor and I found myself responsible for business development of both firms. This kept me active until 2013 when I retired; a year later Judy, my wife of 53 years, died after a lingering illness and I lost my very best friend.

"I continue to work as a consultant to the construction industry, I visit family frequently and enjoy being a coastal dweller. More good fortune as **Andy Bradick's** (a classmate) daughter Nicole, a lawyer, settled in Portland with her husband Mike (a delightful guy) and their children bring Andy and his wife Dolly to our shores frequently where I share their company and enjoy Dolly's Lebanese cooking. Life is good!

"As I reflect on life, family and work, I know my Stevens experience was of great value. How fortunate I was to receive the technical education and our humanities program which was the elixir that made it all work.

"My best wishes to you all, you know who you are! - John "Slats" Slattery, Ipswich, Massachusetts — **George C. Pezold, 120 Main St., Huntington, NY 11743; (631) 271-8817; george.pezold@transportlaw.com**

'60 Oct. 31, 2018 — Thanks to your response to **John Dalton's** request on your Hayden experiences, I am able to produce this log. As you may know, Hayden Hall will be demolished to make room for a new dorm. Some comments.

John Dalton reports that his brother, **Ed**, and he shared room 316, and **Mike Danon** and **Herb Cook** were across the hall from us.

Bernie Blum and **Frank Fernandez** roomed together.

I reported that I was appointed the chief dorm counselor at Stevens and got the apartment in Hayden over the front entrance. I had a bedroom, separate kitchen and separate bath. And Stevens paid for all of this. In 1959-60 these were indeed luxury accommodations. I moved out in January 1960 after Rosemarie and I got married during Christmas 1959. **Dick Reeves** was my best man, and **Doc Ardrey** was the groomsman.

Tom Muldowney noted that he was in room 208 with **Dick Kowler**. The apartment that Don mentions was just a few doors away. **Carl Eycke** was the dorm counselor in the early years.

Buddy Roedema spent semesters 1 and 2 in Hayden, but "due to the immaturity of my brain at the time, can't remember the room number nor my roommate's last name," he writes.

"His first name was **Bruce (Yerry)**. Next door were **Al Filskov** and **Jim Roe**. I was about four doors down the hall from your room, in the direction opposite to the door that ABLES came through. (Same door close to the TV lounge.)

"It is still 91 degrees here in Florida and I think my brain has been fried. Lots of good memories. Keep up the good work."

Mike Danon would be interested in a "last supper" as we did have many adventures while residing there

Chris Williams, hearing that Hayden Hall will be demolished, made me count the years since I entered Stevens. "I am continually reminded how old I am, but it's better than the alternative. In 1956, I was originally booked into Reed House where Sigma Nu had their rooms. I was able to swap with a person who wanted to be with someone in my four-man room.

"So ended up for the first semester in a room in Hayden overlooking the Hudson River. As I recall, my roommate there was Andrew Schiebler, who I knew from high school. We were on the first floor, first room on the left entering from the north entrance. I do not remember the number. Andy never graduated from Stevens, leaving in sophomore year. I believe he was ill and passed away at a very young age.

"This got me to thinking, and I found a 1940 census online where he was listed as a 1-year-old. Google never ceases to amaze me. Thanks for the memories. I am now living in Sedona, Arizona, and get back East once or twice a year for family events."

From **Milton Ludwigson**: "**Joseph Roskos** and I were roommates in 425 (not sure). Thank you for keeping us updated. Milton Ludwigson M.S. 1962."

Art Ketterer '61 also reported on John's Hayden Hall question, which brought back some memories. "In the Fall of 1957, a year after you in the Class of '60 but still as an early Hayden Hall resident, Art was on the campus side with **Mel Kramer** a few days, but after meeting **Al Kuehn** (again after having met him on a trip to Germany) I moved. Al decided to commute (in his 1950 Mercury) and so Art moved in with **Jerry Richter** in 403 Hayden Hall with a view of the New York skyline, which I probably won't see again from my own residence. Jerry and Art were in that room all four years. It had a really

great view. Neighbors were **Bill Fisher** and **Al Herman** in 401 Hayden Hall '57-'58, and then later **Fred Dietrich** and **Al Bublick**, with **Bill Zegel**, **Buzz Stengel** and **Matty Sowul** all '61, among others across the hall at least during our first year at Stevens."

Ev Davis said that he was amazed that John Dalton remembered his room number. "We were on the top floor about half way down the hall and next door to **Joe Marino**," Ev writes. Ev's roommate was that esteemed character, **Tom Adams**. Happily, Ev's mother never knew the kind of character she was leaving him with in the room. "She had the idea that an older roommate would be a good influence since he was 'more mature.' Was he ever! I have completely lost touch with Tom and wonder where he is now."

"Good to hear from you. It is great that you are staying involved. Keep up the good work."

Bob Marshall: "I spent one semester in Hayden Hall. I guess I do not count among the first, but I did share a room with **Robert Sinatra** in the Fall of '57. I do not remember the room number but my recollection is of it being at the south end of the 2nd floor. To the best of my recollection **Paul Terreri** and **Martin Fernandi** were in a room across the hall."

Ron Furtak: "Wow. Freshman class has tripled in size."

Marty Fernandi: "Yes, I, too, was a resident of Hayden. Can't remember the room number, but was across the hall from Muff Terreri and Bob MacDonald (Farfel). Those were some days! My roommate, Bill Dufee, never made it past freshman year." — **Donald N. Merino**; [E: dmerino@stevens.edu](mailto:E:dmerino@stevens.edu)

'61 Nov. 19, 2018 — Greetings, '61ers. I've been doing most of the maintenance in both my houses for the last 15 years, while trying to pursue my hobbies of golf, band playing, email correspondence, investing, doing tax returns, yard work, TV, etc. Most of my house problems usually occurred upon arriving, most often at the Rochester, New York, house. There always were issues of some kind when we arrived in late May (big yard cleanup, water leaks, failed appliances, HVAC, etc.). All expected stuff, given the season and age of the house, but still a nuisance, especially to the wife.

Now the Dallas house, built in '81, is misbehaving. We were forewarned by our next-door neighbor that our 18-year-old refrigerator failed,

but not that one of our two water heaters wasn't working. Also, the circuit breaker that serves three kitchen outlets, the refrigerator, and a front hall outlet needed to be reset. Had to hire help to fix the problems. I still enjoy puttering, fixing, etc., on both houses, but clearly I have too much on my plate. Some health issues came on me suddenly in the last year that added to the need for a workload reduction.

This tale reinforces the wisdom that **Fred** and **Joan Dietrich** showed several issues earlier by downsizing on their own. **Earl Greenleaf, Jr.** communicated more on this subject, in the following letter.

"Fred Dietrich's downsizing story hit a nerve, as we have been doing the same. Diane's mom, who had been living with us for the past 10 1/2 years, passed in late March 2018 at the age of 96. Her passing spurred my wife Diane to start our downsizing. We rented a 70-cubic-yard dumpster and with the help of our three daughters, Laurel, Jennifer and Heather and their spouses, plus available grandchildren, filled it to overflowing. In addition, some stuff was sold, other stuff given away, and a lot of useful items brought to the road for scavengers.

"My 50 years of being a car guy resulted in accumulating a lot of collectible items: over 200 license plates, with 111 New Jersey plates with dates starting from 1912, 50-plus New York, and 38 Vermont, and decades of *Motor Trend* and *Road & Track* magazines. Over 500 assorted hub caps, wheel covers, trim rings, model cars, etc. will be advertised in *Hemmings Motor News*, a car collector's bible.

"After graduating Stevens, I returned to my home in Lyndhurst, New Jersey, and spent 20 years working in the New York City area. That period was also the family-building era. Diane and I married in June 1966. Our four children were born and raised in the same Lyndhurst house, which we acquired from our parents. Twins Earl III and Laurel were born in '68, Jennifer in '70 and Heather in '76. The first four years following graduation, I was an engineer with International Harvester Truck Division "specing" trucks, and tractors for their national account group, as well as dealers, and customers all over the Greater New York City area. In 1966, I transferred to sales after two years with International Harvester, and stayed in sales and management for 46 of my 48-year career. My next six years were with a container, trailer and truck equipment manufacturer, Theurer, with plants in

Newark, New Jersey, and New York City.

"I then joined Fruehauf Corporation as national account sales manager, doing that for four years. I subsequently became trailer and truck equipment manager directing operations in Kearny, New Jersey, and Maspeth, Queens, for the following six years. In 1980, I accepted the position of branch manager in Albany, New York. We bought a house in Malta Ridge, New York, about 20 miles from Albany. After four years in Albany, I was asked to run the Kearny branch, which was not performing well. I kept my family at Malta Ridge. I commuted to Kearny for five months, driving there every Monday morning and returning home every Friday afternoon. This was not a good way to live.

"Right after Christmas 1984, my top Albany salesman, Don, and I decided to start our own business, based on Don handling the Albany area and I handling New York City. The next six months were spent on business planning, locating buildings, offices, equipment, staff and professional support. On June 18, 1985, we founded White Bear Equipment. We had fun, made some money and ran White Bear until June 2003, when we sold it to a similar company, STS Trailer and Truck Equipment, who had their headquarters in Syracuse and branches in Buffalo, Rochester and Syracuse, and wanted a branch in the Albany area, which we supplied. The new operation went well. They hired all of our employees, and I was the last one left in 2009, when I was laid off at age 70. I spent the next four years as a retiree. Missing my customers and cohorts, from 2013 to 2016, I was a driver for ADK Auto Wholesalers, picking up and delivering cars throughout New England, eastern New York and Pennsylvania.

"During our time at White Bear, all of our four kids went through college, got married and moved elsewhere. Our son, Earl III, is a Clarkson grad, an M.E. and works for Ingersoll Rand, N.C. He lives there and has two grown daughters, 30 and 27, and three sons, ages 24, 20, and 14. I have a total of eight grandchildren and two great-granddaughters, ages 5 and 3. Life is good! Earl."

Regards, Jay — [Jay Wartell](mailto:JayWartell@letraw@yahoo.com); letraw@yahoo.com

'62 Oct. 31, 2018 — In the last *Indicator* you read about **Vince Citarella's** celebration of two reunions, so now, in the words of the late Paul Harvey, here's "the rest of the story..."

Vince writes, "I was born and grew up in Cuba. I came to the U.S. in September 1960 when the political situation in Cuba started to deteriorate due to the Cuban revolution led by Fidel Castro. I had completed three years of mechanical engineering at the University of Villanueva, a Catholic university that existed then in Havana and also had a connection to Villanova in Philadelphia. I applied to Stevens as a transfer student and was accepted as a junior.

"Following our graduation, I did some post-graduate work at Cal Tech in California, and then started working for Exxon in 1963 at their Engineering Center in Florham Park, New Jersey. At the same time, I came back to Stevens and earned a master's in management science in 1966. I ended up working for Exxon, now ExxonMobil, until I retired in March 2000. During my long career I held various technical and managerial positions related to the engineering of petroleum refining projects. I was involved in all phases of project development including project planning, process engineering, process design, construction, start-up and operation of petroleum refining and LNG units throughout the world. I had various overseas assignments and lived in Spain, Libya, London and Venezuela. The second half of my career was spent in activities related to the licensing of ExxonMobil refining technology to non-Exxon companies, and I was responsible for licensing activities in Latin America and Spain.

"Regarding my personal life, I was married in 1965, and since 1971 we have made Florham Park our home base. Josefina was a teacher at the Kent Place School in Summit, New Jersey, for 27 years and just retired last year. We have three children and eight grandchildren living in Florham Park, Connecticut and Vermont."

"It was good to see Frank and Pat Derato at the TX house during Alumni Weekend, where Frank related their adventures in Belgium, from which they had just returned. He added that a group of alumni, including John and Stephanie Cienki, had just met for dinner at a restaurant in Hoboken, then had a great get-together at the W Hotel to share old memories. They laughed a lot and Frank noted that John still had his great sense of humor.

Since space limitations prevailed in the last issue, here now is the full story of their trip. Frank writes, "We have been in and out of Belgium several times before (this was our 33rd European trip), but this time we concentrated on Belgium

where there's a lot to see. We landed in Brussels, rented a Peugeot 200S, and drove to Waterloo, Antwerp, Brugge, Ghent, Ypres, Namur, Dinant, Bastogne, Liege, Leuven, and back to Brussels. Belgium has had an interesting history. Twice it was in the wrong place at the wrong time. It was invaded in 1914, and again in 1940, as the German army rolled toward France, both times with tragic results. Belgium does not forget its friends who came to its aid. In a little town near the Flanders American Military Cemetery, the young school kids are taught our National Anthem. Every Memorial Day there is a ceremony at the cemetery and the school kids wave little American flags and sing 'The Star-Spangled Banner'.

"In Bastogne, where the American forces were surrounded by the Germans during the Battle of the Bulge, we stayed in a hotel on the Place McAuliffe, and enjoyed an Airborne Beer in the Nuts Café. (It was General McAuliffe who gave the famous reply, "Nuts!" to the German demand for surrender.) Here's how Airborne Beer came about: While Bastogne was surrounded during the Battle of the Bulge, a young paratrooper named Vincent Speranza from the 101st Airborne brought some beer to a wounded friend who was lying in a 'hospital' in the ruins of a church. He had wandered through town and found a bombed-out tavern where the beer tap was still working, whereupon he filled his helmet with beer and brought it to his buddy. This became a legend and now a beer company brews Airborne Beer, served in small helmet-shaped cups. The owner of the Nuts Café told me that Speranza visited last December, at age 94! If you search YouTube for 'Airborne Beer,' you can find Speranza's story in his own words by selecting the 11-minute version. Bastogne keeps the memory of the battle alive with three major museums: The Bastogne War Museum, the 101st Airborne Museum and the Barracks Museum, where General McAuliffe had his headquarters. They've also preserved the remains of foxholes near a road leading to Bastogne where our soldiers dug in to fight the Germans. It's quite a moving experience to stand there amid the foxholes, knowing what took place there.

"But what I liked best about Belgium was its mussels. There is nothing better than a kilogram pot of mussels, cooked in beer or white wine, with a side of French fries and a good Belgian beer. It was a great ending to a busy day of 'touristing.' Hope to see you next year at Alumni Day 2019, our 57th!"

And lastly, for those of you who haven't yet read Carl Mitchell's futuristic novel, *Sundown*, I highly recommend it, as it's well-crafted, fast-paced and rekindles the "techie" in all of us!
—Phil Kimball; pbkim25@gmail.com

'63 Oct. 31, 2018 — Hi guys, It feels like winter's coming way too early this year. The fall started out warm but the latter half of October has been cold and incredibly wet. Here in the North Country, it seems like we've had rain almost every day for the last three weeks, but the good news is that today is sunny and I'm scheduled to spend most of the morning hiking in an area where we do trail maintenance.

The Indicator log hasn't received much input from the rest of you but (thankfully) Rich Polizzotto wrote "Yikes! Are we really going on 55 years since we graduated from Stevens? Well, I guess it is. Anyway, here is a brief overview of my doings since then.

"Soon after we all graduated, I married my sweetheart, Marge, and we recently celebrated our 54th anniversary! We had three sons along the way. Our oldest is a sea captain in Juneau, Alaska. The middle one is in distribution management in Atlanta. The youngest is in data analytics in Orlando, Florida. Today, we also have three grandchildren, whom we love to visit.

"Career-wise I retired about nine years ago from Poolcorp (ticker symbol POOL) as a vice president of operations. I spent much of my career in the pool industry, and most of that at POOL and its predecessors. Early on, I got an M.B.A. from NYU, attending nights.

"Besides visiting family, Marge and I love to travel, especially cruises. We have done quite a few since retiring. The most recent were Iceland/Greenland, and the Amazon. So, we split our time between our home near Chattanooga Tennessee, our home in Destin, Florida, and travel."



Bonnie and Norm Morrow '63 attended a Houston Club happy hour event last fall.

In a later note, he wrote that they were fortunate that their home in Destin, about an hour's drive west of Panama City, had only minor damage from the hurricane that did so much in destroying the area.

On other topics, we had a good representation at the fall Old Guard Luncheon. **Joe Polyniak, Dick Magee, Tom Moschello, Charlie Perruzzi, Roy Olson, Tom Bentey,** and I wish I'd made notes at the time because I'm sure I'm forgetting someone! We were the second most populous class there and only the recent inductees to the Old Guard exceeded the Class of '63. During the lunch, one of the topics of conversation was the time the window blew out of the second floor, immediately above the entry of the brand new Stevens Center. I thought it was Roy Olson who just missed getting hit by it, but Roy says it wasn't he. Does anybody remember who it may have been?

On a personal basis, I'd like to thank all of you who have contributed to the Class of '63 Scholarship Fund. This year our granddaughter, Lauren Sachs, received a substantial award from the class and I'd like to pass along her thank you.

For the rest of you guys, please write something or send some photos that we can pass along.

As you read this, we'll be well into 2019, and I wish all of you and yours a healthy new year.

—Neville W. Sachs; nevsachseng@gmail.com

Alumni Weekend reunion, 5/31/19 – 6/2/19

'64 Oct. 31, 2018 – Gentlemen: As the new Stevens year begins, we look forward to our 55th reunion coming up next June. I realize it is nine months away, but planning ahead is what we engineers do. Make your plans to spend it with us at Stevens in June. If you can help us out with the planning, etc., please contact me or **Peter Astor** so that we can make this a memorable reunion. We will send more information in upcoming correspondence. Watch your mailbox.

First, I would like to apologize to **Mike Lettini** for misspelling his name and to clarify his note in the last *Indicator* article. The program he was involved with, "AIM," is 'Alliance in Innovate Manufacturing'.

Vem Chuang writes: "I retired from Daimler Chrysler Corporation in 2007 shortly after Chrysler was sold by Daimler to a hedge fund. The new owner, Cerberus, started cutting costs immediately. They offered an earlier retirement package to me and I accepted it. I was 65 and

three months old. At the time, I was staying in Michigan. We bought a home in Berkeley, California, shortly after I retired but did not move there until five years later.

"Since retirement came rather suddenly, I did not have lots of time to plan for it. I was planning on working for another five years till I would be 70. I spent a few months half-heartedly looking for another job but finally decided we would spend our early retirement years helping our only daughter looking after our two grandchildren. Daughter Jessica is an architect graduated from Cornell University. She likes to work and does not trust other people to look after her children. That is what we have been doing for the past 11 years. We pick up our grandchildren in the afternoons from their school and look after them until one of the parents comes home. We have weekday mornings and weekends to ourselves. We do ballroom dancing two, three to four times a week. We travel three, four times a year.

"During my freshman year, I had three roommates. My room was in Jacoby's (Jacobus) Hall and had three rooms, two very small bedrooms and a large study room. At the end of the second semester, all the three roommates left Stevens. Later years, **Tim Yu** and **Richard Treidel** became my roommates. During my senior year, I had a single room in Jacoby's Hall.

"Yes, I still have my copy of *The Link* and my K&E slide rule. I also have a set of very well made drafting instruments made by Wild Heerbrugg of Switzerland. My father bought the set in Hong Kong as a college-going gift for me. I used the set also during the early days of my working career. Later on, when one of my brothers came to the states from China, I loaned the set to him. He used it for many years until computer drafting became popular. He returned the set to me in perfect condition.

"My most treasured item from Stevens is a stuffed toy dog I acquired during my freshman year. I am not sure if it was the college mascot. It looked so cute, I bought it and sent it to my girlfriend, now my wife, in Hong Kong. She later brought it to the states with her. And to this day, we still have it. I would like to show it to all of you."

Frank Holman writes: "You'll be glad to know that I was going to answer your email about the same time I got it....but I forgot... you know the drill. It was nice of you to reach out to the class in an attempt to collect data on what we are or aren't doing. Well, you found me living in Fountain Hills, Arizona, where we don't get hurricanes,

mudslides or many of the natural disasters that plague the rest of the country. The summer is hot. But remember, it's a dry heat, (and that's a true statement), and like our snowbird neighbors we leave the heat for the Pacific Northwest, where we keep our boat. This area is known as the best cruising water in the world...although I am prejudiced. The crabbing, shrimping, halibut and salmon fishing are world-class and the number of islands and marinas is beyond belief. We have Seattle, Victoria, British Columbia, and Vancouver all within a few hours of cruising, from our marina, to those extraordinary locations. The trips back and forth take us through Las Vegas, where we attempt to depart with only slightly less money than when we arrived. During the winter in Arizona, we can and do enjoy skiing in the mountains of northern Arizona. It is a state where you can literally snow ski and water ski on the same day. Not many states can make that claim to fame. We attended our 50th class reunion and would have enjoyed an extensive road trip, but for the fact that I was bitten by a Diamondback rattler just before the trip and had to rearrange my plans. We enjoyed coming back to the Stute and meeting old friends and fraternity brothers but were disappointed in the fraternity house that served me so well during my college days — Mu chapter of Chi Phi — being totally run down."

Fred Chasalow, Ph.D., tells of his day: "I competed at a bridge club this morning. We finished second in the open event. We won 2.4 master-points. When I got home and opened my email, I received an announcement that my paper was accepted for presentation at the Endocrine Society Meeting on March 17 in Chicago. The paper describes the identification of a new steroid with a new function.

"I emailed to my business partners the plan to start a new business to use the new discovery for diagnosis and therapy of many diseases. As you can determine, I am still active as a scientist and bridge player, just as I was while I was at Stevens,

1 2 Scenes from Alumni Weekend 2018, including Laurie and Chris Coccio '63 and Andrew Lee '83, photo at right, enjoying the evening. **3** Luis de Larrauri Ros '65 and his wife celebrated their 50th anniversary last year with Mass at Almudena Cathedral in Madrid, with the bishop presiding. **4** Ken Madonia '65 wed Marybeth Goudet, his high school sweetheart, last fall.

more than 50 years ago. P.S. I still have my slide rule, even though I haven't used it in more than 30 years. Sunday, my wife and I (51 anniversaries) will go to the Lamplighters to sing along with the Gondoliers (Gilbert & Sullivan).

"Still looking forward."

If you haven't sent your letter, just wait, they will be in future *Indicators*. Please do not hesitate to write as we want to hear from you and about your life's work.

In conclusion, as I write this note, I became a grandfather again. My second granddaughter was born last week. And also congratulations to Peter Astor on becoming a new grandfather recently. Best wishes to all the families. — **Harley Graime**, hgraim@att.net

'65 Oct. 29, 2018 — Note: 2020 is our 55th reunion year.

News: On Oct. 6, 2018, **Ken Madonia** married Marybeth Goudet. They had been high school sweethearts long ago. While traveling the world on trips over the past two and a half years, they fell in love again.

Ken and Marybeth combined have 30 grandchildren who all attended the wedding. This must be considered a record for the Class of '65, unless I receive proof otherwise. By January, the 31st grandchild should have arrived.

Gary Cymrot writes on June 30 at the Seaview Resort in Atlantic City, New Jersey: "I shot my age. As the youngest guy in our class — I'm only 73 — I shot a 1 under par of 70!!" He invites any classmate for a round of golf.

Luis de Larrauri Ros emailed: "Hope you are able to come to Madrid on vacation someday. I will show you around Madrid and enjoy a touching evening meal at home with my family. Attached is a photo of our 50th anniversary Mass in Almudena Cathedral, celebrated by the bishop. Another photo shows me, 75 years old, going down a huge slide."

George Fichter from Auburn, Washington,

writes: "I retired in 2013 and am now volunteering full time for a Christian organization. I train and coach translators around the world to use computer-aided translation (not machine translation) tools. My last trip was to Mongolia, the next one at the end of the month will be to Albania."

The **Semcers** reported that their twin granddaughters, who are in their first semester at Northeastern, are in Italy having a good time attending classes four days a week and traveling over the three-day weekends. Another granddaughter of **Frank and Mary Jane** is a freshman at Stevens — she called Frank to say she was at a Theta Xi Friday night party! "How can that be?" he asked. She is enjoying Stevens and doing well."

On a more serious note **Dennis Blahut '62** reported the death of his brother **Ken Blahut** after a very short illness with Alzheimer's. Ken had been a member of the Student Council and active at Stevens as a member of Phi Sigma Kappa fraternity, Gear and Triangle, Khoda and as chairman of the Honor Board.

Class of '65 Scholarships from 2017-2018

John Henrich junior, mechanical engineering, from Woodcliff Lake, New Jersey; Paul Moyer, junior, biomedical engineering, South Windsor, Connecticut; Ashley Peck, sophomore, environmental engineering. Ashley is the granddaughter of **Dan Peck** and Paul is the grandson of **Hank Troy**.

Sources of information

You may feel that Frank Semcer gets more column inches in the class log than most people but that is mainly due to the lack of information arriving at my desk. My primary source of information is Frank. Please feel free to correct any observed imbalance by sending me some information. Good news or not so good news both are acceptable to maintain more contact between classmates.

How different is Stevens from what we knew



True leadership is recognizing not only an opportunity but also an obligation to serve others. Coming out of Stevens, with the thinking and processing skills learned there, into the professional world leading teams of various sizes and characteristics, and remaining an active SAA member, has given me much personal satisfaction that I have helped others in various ways. — Wayne Monsees

'71 M.Eng. '72 M.S. '78



1961 to 1965?

There are a lot of differences. Are you well informed?

- Undergraduate women first admitted in 1971
- Developments in education and the administration
- Academic options, but retaining strong math and engineering first year
- Student Council
- Honor System
- Admission standards
- Retention rates
- Support system available to students
- The internet transforming academic interaction, information for students, transparency of rules and regulations
- Expansion of information available to students, academic staff, applicants and alumni.

Check the Stevens website yourself and use the search option to be more specific. If you want me to write a summary opinion, just let me know and I will try to assist.

Until I hear from you, remember 2020 will be the year of our 55th Reunion. — **George Greene**, gwgreene43@hotmail.com





1 Class of '67 friends reunited at their 50th reunion in June 2017. Seated, from left, are Larry Olson, Tony Cocco, Andy Metropole and Buddy Reichlen. Standing, from left, are Ron Parisi, Bob Kopki, Carl Decina, Marc De Rossi and Bob Payne. **2** Carol and Alex Kiczek '67 with their grandchildren Alex III and his little brother James, in March 2018.



'67 Alex Kiczek writes, "My wife and I had a miniature kiddie railroad in our backyard for 17 years. It held 12 children and an adult engineer. We had 200 feet of track and the gauge was 12 inches. We have ridden just about every mile of Amtrak, sometimes many times. Worldwide: Canadian Rail; Vancouver to Toronto and Montreal to Halifax. India Rail, Italian Rail and France to Spain. We took our railroad outfits to New Jersey in March where my son, Alex Jr., lives, so our grandkids could see us 'in uniform.'"

Don Daume writes, "I retired in 1992. Been volunteering lots since then. To Stevens. To my town. To Freemasons and more. I've been class

captain (since the 1980s when Bob Eisenberg conned, I mean convinced, me to pick it up from him when we were both at General Electric). I'm a 40-year resident of Teaneck, New Jersey. I've been appointed to the Environmental Commission (the last 20 years), the 'Preserve the Route 4 Greenbelt' Committee (the last 10 years), and the Shade Tree Advisory Board (the last two years). No political positions, thank you very much. I'm a 52-year Freemason (the worldwide 301-years-old fraternity), following in my father's and grandfather's moral path. I've served as master and grand chaplain, and continue efforts for my lodge, which originally was in Hoboken. I have been and continue to be active in other masonic

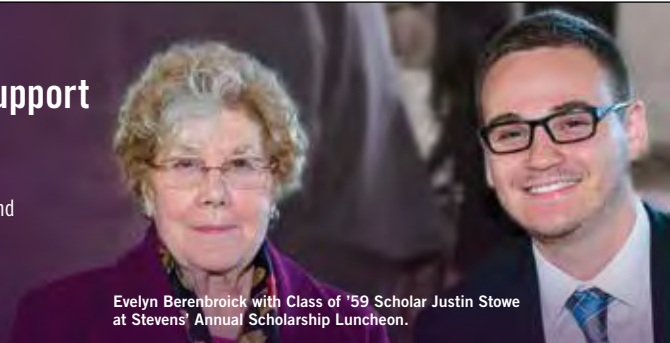
bodies as well. My very best wishes to all. Be well."
 Bob Kopki writes, "Thirty-one of the Class of 67 attended our 50th Reunion; nine from Delta Tau Delta showed up, making the Deltas 29 percent of the turnout. It turned out to be an amazing 60 percent of our Delt graduating class. I ran a private dinner for us Saturday night, and it was a special event, seeing all those guys again.

"As for myself [Kopki], we moved from Alexandria, Virginia, to Boca Raton, Florida, last year and are now fulltime Florida residents. I am trying to keep up my travel schedule. Last fall, my son Rob and I went diving in Indonesia for 11 days and lived during that period on the tall ship Dewi Nusantara. It was a FAB trip. I did a lot of photography, both underwater and in Jakarta. In May, Rob and I spent two weeks in Sequoia and Yosemite national parks. In June, I went to Berlin to see a Rolling Stones concert. It was awesome, most of the audience my age. My wife, Suzanne, and I just completed a one-month trip to Prague, Budapest, Vienna, several medieval cities in Germany, and finished up in Amsterdam. We will return to Indonesia in January 2019 and also visit Bangkok and Chaing

IRA Rollover Gifts: Prudent and Powerful Support

“Stevens awarded my husband (Frederick J. Berenbroick '59 M.S. '62) scholarship funds which allowed him to afford to attend a top-quality engineering school. Today, I support the Class of '59 Endowed Scholarship as well as the Evelyn M. and Frederick J. Berenbroick 1959 Endowed Scholarship Fund, which I established in 2014 and add to annually with gifts direct from my IRA.”

— Evelyn Berenbroick



Evelyn Berenbroick with Class of '59 Scholar Justin Stowe at Stevens' Annual Scholarship Luncheon.

If you are over the age of 70½ and own an IRA, you can authorize your IRA administrator to make transfers each year (totaling no more than \$100,000 per year) to one or more charities – without the amount being added to taxable income.

An IRA Charitable Rollover Gift to Stevens Institute of Technology can:

- Be an easy and convenient way to make a gift from one of your major assets
- Be excluded from your gross income: a tax-free rollover
- Count toward your required minimum distribution
- Be applied to support vital scholarships for deserving students

The information is offered for general informational and educational purposes. You should seek the advice of an attorney for applicability to your own situation.

To make an IRA charitable rollover gift or to learn more, contact us today:

Michael Governor
 Director of Planned Giving

201-216-8967
Michael.Governor@stevens.edu

For more on IRA Charitable Rollover Gifts, visit: stevens.giftplans.org

Learn more about how Stevens supporters are making a difference, visit: connect.stevens.edu/donor-stories

Mai in Thailand, Angkor Wat in Cambodia, and believe it or not, Hanoi. My plan is to be an active traveler and diver as long as my health stays OK. I have already been retired 18 years. I've never looked back nor had a thought of working again."

Stevens Indicator editor Beth Kissinger of the Division of Communications and Marketing forwarded to me an article that appeared in the *MIT News* magazine about the recovery of the remains of Air Force pilot David T. Dinan III. Dinan's body remained at his Laos crash site since the Vietnam War. His fatal crash occurred on March 17, 1969. See: <https://www.technologyreview.com/s/610118/a-long-journey-home/> Reportedly, Dinan began his education at MIT. He then transferred to Stevens before joining the Air Force in 1966. At the time of *The Indicator* going to press, Beth and the SAA are trying to determine information about Dinan's time at Stevens. Does anyone remember him? Please let us know.

As for your class secretary, it was a busy summer. I was invited to give lectures on the history and sociology of chemistry in Tallin (Estonia), Brussels and London. It was a grand time. I especially enjoyed nearly two weeks in Estonia, visiting its other university town (Tartu) and several smaller towns on the Baltic Sea (Haapsalu and Pärnu). My time in Brussels coincided with the NATO meeting, and my hotel hosted many White House officials — the security was so tight, I hardly was able to get to the street of the hotel! There were hundreds and hundreds of police. Very exciting. No, President Trump did not attend my lecture.

Be well! — **Jeffrey I. Seeman**, jiseeman@yahoo.com

'68 Oct. 31, 2018 — I'm writing this for the winter issue of *The Indicator*. Hope you all had a great summer and autumn.

By now, all of you should have received a copy of the updated Class Logbook that was compiled for Alumni Weekend. We found it necessary to update it because some additional information was provided and did not make the original issue. The Logbook was sent out as an attachment to an email in October, including an option to obtain a hard copy if you so desired. If you did not receive this email, please contact me and I'll see that it is sent to you.

An extension, or result, or neither, of Alumni Weekend and our 50th celebration is that our own **Michael Hollander** took it upon himself to set up a Facebook group page for our class. This



Tina and Joe Rocky '69

is a private group, open only to members of the Class of '68 and their significant others (wives, girlfriends, family members). Only those who join the group will have access to the information posted on the group page.

In order to become a member, you need to go to the Facebook page and ask to join. Michael Hollander and myself are currently administrators and will approve anyone who wishes to join.

The mission of the group page is to share current information without having to write me and wait several months to see it published in *The Indicator*. With this group page, you will be able to share photos and other experiences (like wedding anniversaries, children, grandchildren info and travel experiences) in a timely manner. And don't worry. You won't be putting me out of business. For those who do not wish to be members of Facebook, the class log in *The Indicator* will continue to be an option for communication with classmates.

The group name and location are as follows: Stevens Tech 1968 Alumni; <https://www.facebook.com/groups/2130847887197301/>.

We're looking forward to sharing up-to-the minute information with our classmates. Here are some of the ground rules for its use: To convey information and photos of yourself, significant others, children, grandchildren, great-grandchildren, friends and classmates. Please no political or religious content as well as no commercial ads. Content of this nature will be immediately removed from the page.

I've decided that when I do not receive "live" communiqués from any of you, I will feature one of the contributors to the Logbook. This gives me 10 years of logs to send you guys!

The first classmate featured is **Frank Brice**. Frank was a science major at Stevens and after graduation, he received an M.S. in computer

science from Rutgers University. He states, "Stevens allowed me to pursue my very early interest in science and technology, and introduced me to computers, which became the foundation for my career." He worked for General Electric and IBM in various locations. He notes, "I retired from IBM on November 30, 2008, at age 62, having previously reduced my work schedule to 4 days per week at age 60 in a program that continued providing fulltime pension credit. I wanted time for myself and my family after a 40-year career, as my son was entering college to begin his own pursuit of computer science. My wife and I have not relocated (from Hurley, New York) after retirement because the mid-Hudson Valley of New York is simply a great place to live." Frank also attended Alumni Weekend as well as our class dinner.

So, as many of you stare out your window looking for the first signs of spring, please be careful and stay safe! — **Allen A. Foytlin**; foytlin1@gmail.com

Alumni Weekend reunion, 5/31/19 – 6/2/19

'69 Oct. 31, 2018 — Helloooo 2019! We are officially in countdown mode for 50 years! That is half a century, but only 5 percent of the millennium. It's a half full glass looking for the other half. It's the face of JFK wishing he were Ulysses S. Grant. It's just enough distance from the Stute that you are beginning to forget the difficult times and can still remember the good ones — another reason you just don't want to wait for our 75th.

With our 50th reunion fast approaching, our reunion committee has been meeting every month and we are working with the Alumni Association to plan a great "meet-up." We just need you.

By now you should have received our letter about the reunion and if you have any questions or comments, send us an email. We have booked a group of rooms at the W hotel which is within walking distance from the campus, or you can stay at the Sheraton in Weehawken and Uber to campus. We are planning a great party for our class on the Friday evening of Alumni Weekend in the library. Saturday, there will be tours of the campus — a campus, we might add, that has been growing over the last few years and will likely turn a few heads when you see it. We can also arrange a dinner in Hoboken at a great restaurant if you are flying or driving in on Thursday.

The Saturday dinner dance will likely be in the

Babbio building atrium overlooking Manhattan (in case you missed it, the Babbio building is on the site of the old Navy building where many of us fondly — or not—can still recall the classes we enjoyed/endured during our time at Stevens). The Babbio building and plaza are a stunning location, especially compared with the building it replaced, a relic of post-World War I.

You may also recall that when we entered Stevens in 1965 (or 1964 if you preferred the 5-year plan), the library was also on Fifth Street, behind Burchard and the Carnegie lab. That old building is also gone and, in its place, the Gianforte Family Academic Center is being built. We hope that by the time we get to campus in June, this new building should be near completion.

If you haven't been back to campus in a long time, there is a lot of very positive change for you to see during our reunion, not the least of which is a student body that is every bit as engaged, and actually maybe more so than we were.

If you are seeing this column for the first time, it means we don't have your email, so please send us a note and, even if you can't join us in June, let us know how you are doing. Send to GerryCrispin@comcast.net or Ed.Eichhorn@medilinkgroup.com.

And answer a couple questions on this survey <https://www.surveygizmo.com/s3/4453005/Class-of-69-50th-Reunion-2019-Tell-us-what-ya-want-if-you-haven't-yet-responded>.

We also received several pictures from **Russ Eitel** that we are very happy to share with you. Please email us pictures and stories that you would like to share with your classmates because we are on a roll and will be writing once again for the next issue of *The Indicator* (as well as sending all of you with email addresses a monthly update). Check out a number of pictures with this log. See you all in the beginning of June!

— **Ed Eichhorn**, ed.eichhorn@medilinkgroup.com; **Gerry Crispin**, gcrispin@careerroads.com

'70 Oct. 31, 2018 – Happy Halloween! Maybe there was a reason why the Alumni Office chose this date for submitting the logs.

I saw **Frank Ginfrida** was celebrating a work anniversary on LinkedIn, so I congratulated him. Frank responded. "The truth of the matter is a few years ago I gave up all executive/management roles and traded in meetings and presentations for good old-fashioned software development work, albeit with new technology (nothing ever really changes anyway). My thought at the time is that management is pretty much a life choice, with plenty of hours and aggravation; definitely not an option for 'retirement' work. But I didn't, and still don't, see myself as content without a challenge. It's worked out well: it keeps me on my toes but involves modest hours and flexible work location but gives me nearly as much leisure time as I'd like. I guess the nicest thing is that I've not been to an 'official' meeting in over a year. To paraphrase Joe Friday... 'just the code, ma'am, just the code.' Also, it is amazing how relaxing work can be under those circumstances. Should have done it much sooner. The next step is to cut back to about 30 hours a week, limited to seven months a year. That would solve the 'nearly as much leisure time' issue; it's a damn fine goal. If you hear of anyone who needs a business intelligence consultant and offering those hours..."

"I think that I may become the last regularly employed member of the class. If you keep writing the class log, we'll have a chance to test that assertion.

"Ann and I just returned from a Cape May family vacation. Next year will be Saint Lucia, Cape May (the usual summer break), and Eastern Europe on a river cruise. Gotta keep the PM skills sharp planning vacations, even if I don't use them for anything else.

"The only member of the class with whom I have spoken recently is **John Harding**. John is

living in Tennessee; he still works as a contractor doing field engineering work in nuclear plants. It sounds like he's doing well and mostly enjoying himself." — Frank can be reached at Francis_Ginfrida@epam.com.

Bruce "Baldy" Hacker and his wife, Nancy, visited **Bernie** and **Diane Chachula** in early October as part of his visit to the Air Force Museum for a reunion with his flying buddies. They had a couple of hours to reflect on all the things which changed in their lives over the nearly five decades. The Hackers planned on continuing their trip westward to visit Nancy's sister and brother-in-law. Bernie provided a picture for this log.

Bernie mentioned he is staying pretty steady in dealing with his multiple myeloma. "I'm focused on building up my strength and stamina as the best way to support the chemotherapy support maintenance dosing."

We are all cheering for you, Bernie, and hope all turns out for the best. Bernie can be reached at chachula@gmail.com.

Father **Gabe Costa** let us know he had a freak fall on stairs that required rebuilding his knee and extensive recuperation. This is the first time in his life Gabe has been sick. We all hope everything also turns out good for you, Gabe. Gabe can be reached at Gabriel.Costa@usma.edu.

Unfortunately, I need to end this log on a sad note. **Robert Helmut Kayser**, AKA "Bob," "Papa," and "The Good Kayser," died suddenly and unexpectedly from cardiomyopathy at his home in Mashpee, Massachusetts, on June 23, 2018. He was 69 years old. The following informal obituary was written by his daughter, Kristin, and son, Mike, who acquired Bob's writing skills, and was only slightly modified for this log.

Bob was born in Orange, New Jersey, to the late Eleanore and Helmut Kayser. According to early photographs, Bob was a serious child who occasionally dressed up in cowboy gear and overalls along with his big brother, Bill. According to Helmut, "Bobby" was a clever child and a problem solver, as evidenced by his successful years-long scheme to dispose of his dinnertime peas behind the kitchen stove. Later, Bob was a frugal steward of his weekly allowance, frequently loaning his brother money at an interest rate that would appall the other Jersey loan sharks. In high school, Bob developed what would become a lifelong interest in chess, reading books by Nimzowitsch, Reinfeld and Lasker to perfect his strategy. He even taught himself to play blindfolded, and as an adult went on to compete



1 Class of '69ers, from left, Dave Vercollone, Don Kennedy, Russ Eitel, will mark their 50th Stevens reunion this spring.



2 Diane and Bernie Chacula '70, left, and Nancy and Bruce Hacker '70 enjoyed a visit last fall.



Robert Helmut Kayser passed away last June. A remembrance appears in the '70 log.

and win first place in events such as the Region III Chess Championship in Washington, D.C. He was fond of the Gruenfeld Defense against P-Q4, and Sicilian against P-K4.

At Stevens, he became friends with **Donn Viviani** and both planned to attend graduate school in Washington, D.C. They decided to find housing together, sharing an old, run-down house on Military Road with four other grad students.

One fateful day in 1970, Donn's cousin, Julie Vellutello, drove down from Pennsylvania, to visit Donn. After getting lost, she called the house on Military Road for directions. Bob was the only one home. He guided her to the house, after which they stayed up until 2 a.m. talking about books, music, and other things. In a true case of opposites attract, quiet, introverted Bob was smitten with the outgoing young Julie and courted her with long letters and phone conversations. She was equally smitten with the smart, thoughtful and unassuming young man. The couple were married in July 1972.

The newlyweds settled in Columbia, Maryland, where Julie worked as a teacher and Bob worked on his page-turning doctoral thesis on the "Photoreduction of Methylene Blue by Amines," proving to the world that organic chemistry is primarily comprised of made-up words like "photo-oxidations" and "arylamines." Two years later, they had a daughter whom they named Kristin after a character in "Kristin Lavransdatter," an Icelandic trilogy, and NOT, as was jokingly planned, Methylene Blue. She is very grateful.

Bob worked as a postdoctoral fellow at the University of Maryland, Baltimore County, for several years until he was hired in 1980 by the Environmental Protection Agency in Washington DC. In 1981, their second child, Michael (Jeffrey? Michael? Jeffrey? Michael), was born, and the family of four moved on up from their townhouse to a single-family home on Iron Pen Place. Every day, Bob would commute three hours (in various

combinations of trains, buses, cars, and vanpools) to the city and back again, which may have been why he was occasionally cranky in the evenings. After working as a branch chief for a few years, he became a trouble-shooter for several branches in the Solid Waste Division. He retired from the EPA in 2012. In 2015, he and Julie relocated to Cape Cod to be closer to their children.

Along with chess, Bob's hobbies included reading, especially science fiction and fantasy, playing various computer games (Bloons Tower Defense was a favorite), dropping devastating one-liners, and making dire predictions about traffic and the weather. He also managed the finances for many family members and had an encyclopedic knowledge of the stock market. He enjoyed cooking for his family and could be relied upon each year to single-handedly save Thanksgiving dinner with his amazing turkey gravy.

Bob loved nothing more than spending time with his family. He is survived by his wife, Julie, his children: Kristi (Eric) Bader and Michael (Kristen Stelljes), his five grandchildren: Jake, Danny, Anna, Alex and Clara, sister-in-law Peggy Kayser Lewis, and five nieces and nephews. He was preceded in death by his brother, Bill. He will be remembered as a quiet, loving man with a dry wit who treasured his family and would always be there if you needed him.

Donations in Bob's memory can be made to a charity of your choice, Doctors Without Borders, International Rescue Committee or The Southport Scholarship Fund.

On behalf of the Class of 1970 we offer our sincerest sympathy and condolences to Julie and the rest of the family. — Julie can be reached at jkayser2002@yahoo.com. — **Eugene A.J. Golebiowski**; eagolebiowski@att.net

'71 Oct. 31, 2018 — **Mark Schubin** wrote about his recent exploits. In October 2017, he won the 2017 Presidential Proclamation of the Society of Motion Picture and Television Engineers. The citation read: "In recognition of his five decades of contributions to the technology of television. An internationally recognized expert with an insatiable intellectual curiosity, Schubin has worked in every aspect of television production, including design, manufacturing, lighting, sound, camera, editing, distribution, and even as talent and director, and his projects have spanned every continent of the globe. Today, he supports the broadcasting of Metropolitan Opera productions



Attending Stevens events — from luncheons to meetings to alumni reunions — not only enriches my life but also makes me live longer by keeping my mind active. At our Stevens Metropolitan Club meetings, it's interesting to hear of all the wonderful places in the U.S. and abroad that our alumni have worked. At Stevens, a new world of great alumni, students, staff — all the way to the President's Office — makes my life very enriched!

— *A. Joseph Schneider '46*



to cinemas and televisions around the world. Schubin is an active SMPTE Life Fellow and a sought-after resource to help educate the industry on current and historical technology."

In the summer of 2018, Mark made pilgrimages to two old European opera houses that made important contributions to media technology. Teatro Sociale in Bellinzona, Switzerland, was the site of the first transmission of a complete opera by wire in 1878. Teatro Nacional de São Carlos in Lisbon is where pay cable was born in 1885 (after an interesting stereo transmission the previous year).

In October, his third historical paper was published in the *Proceedings of the IEEE*, this time on how people watched live remote baseball games for half a century before television (<http://bit.ly/pre-tv>). The previous two were on why television research began in 1877 (and why history books don't say so - <http://bit.ly/siemens-eye>) and on how opera created the modern electronic media (<http://bit.ly/operastem>). He is currently researching the origins of showboats.

Joe Moaba writes from Florida that he tried early voting and loved it — except for the half hour wait. It seems to be the thing in Florida with over 2 million votes (of 13 million) already cast. Joe also noted that Florida seems to have taken over the distinction from California as the preferred home of crazy bombers and mass murderers.

Don't see your class log listed? Send an update to alumni-log@stevens.edu or call 201-216-5161.

After many years of procrastination, Pat and I finally made it to Hawaii for the vacation at the top of our bucket list. We spent three days in Oahu, doing Honolulu, Waikiki Beach and touring (Pearl Harbor and the North Shore are musts). We then took a cruise which included two days each on Maui, the big Island of Hawaii, and Kauai. What a great trip with incredible scenery — volcanoes (not active when we went), lava beds, lush forests, beautiful valleys, waterfalls and lots of great coastline. Coffee and macadamia nuts were the big local crops. Sugar cane is gone and only one small Dole pineapple plantation is left. We lost count of the hundreds of “Aloha” greetings we received. We even survived the 10-hour flight each way. If you haven’t been there yet, you should really put Hawaii on your vacation bucket list. Save your pennies, because it is not a cheap place to live or vacation.

Please send me your annual holiday/Christmas newsletter so I can let your fellow classmates know what you are doing. Only about 850 days until our 50th reunion — so keep June 4-6, 2021 open. One last big party before we all start to fade into oblivion. — **William F. Stengle;** wfs20hlm@aol.com

'72 (Written collaboratively by Enrique and George — October 2018)

Oct. 31, 2018 — Fellow Classmates: First of all, we’d like to thank all of you for your contributions to our class scholarship; 27 percent participation. That’s great! Stay connected with Stevens; great things are happening. Whenever you are in New Jersey, visit the Stevens SU+RE House at the Liberty Science Center – we won first place in the nation! Since our log is packed with updates from classmates (thank you again), I only have room to wish you a happy holiday season and a new year

with good health and laughter. Now to George.

Thanks, Enrique! Heartiest congratulations to **Bruce Stroeve** (brucestroeve@comcast.net), on his retirement as chief executive officer of MTF Biologics. During his 29-year tenure at MTF, Bruce led the non-profit organization to become the largest tissue transplant bank in the world, with 1,100 employees and over \$400 million in annual revenue. In his more than 45-year career in life sciences and biotechnology, Bruce has been a member of many transplantation-related advisory boards including the NJ Sharing Network. He was a founding member of the Tissue Policy Group of the American Association of Tissue Banks (AATB) and served two terms on the AATB Board of Governors. According to William Tomford, MD, chair of MTF’s Board of Directors, “MTF would not be the world-class organization it has grown to be without Bruce’s dedication and commitment to our mission of saving and healing lives, and his ethical, thoughtful and careful approach to this organization.”

In an *Orthoworld* article, Bruce attributed some of his success to a “desire to learn. And I don’t mean read books. You have to be willing to learn from your coworkers, your customers, your suppliers. Someone will teach you something every day; you just have to be willing to hear it.”

Bruce, well stated! And we’re sure that the Stevens education (and Honor Code) also had a lot to do with your great accomplishments. Hoping you are enjoying retirement and keeping on learning.

Bill O’Sullivan (Sigma Nu, billjosullivan@gmail.com) wrote that he recently retired after 47 years with the New Jersey Department of Environmental Protection (NJDEP). In 1968, Bill entered Stevens with a Clean Air and Water Scholarship that paid room, board, and tuition, and a contract to work for New Jersey during the summers of

college and three years after graduation. Those 3 years and 9 months stretched to 50 years of public service. Bill’s entire career was with the NJ Air Pollution Control Program (NJAPC), from a stack test intern, to the Director of the Division of Air Quality. In between, he did inspections, enforcement, permitting, rule development and administration. Along the way, there was another Stevens degree in mechanical engineering and a master’s of government administration from the University of Pennsylvania.

After marriage to Denise Hilbert, sister of Sigma Nu fraternity brother, **David Hilbert ’70**, there were four children, three of whom have engineering degrees, with a current total of seven grandchildren in New Jersey, Texas, Utah, and Boston. Bill’s advice to high school students with math and science interest is to start with an engineering degree and add other degrees as needed or desired.

Bill says his favorite task in air pollution control was rulemaking, and over the years, he either wrote or oversaw the development of many NJAPC rules. Bill’s mercury regulations became models for other states and the U.S. Environmental Protection Agency (USEPA).

Bill also was a key member of a team that challenged USEPA’s first mercury rules, which the court ultimately overturned. That rule included emission trading for hazardous air pollutants, which Bill believed to be inappropriate. The subsequent USEPA mercury and air toxics (MAT) rule has performance standards, which were modelled in part after Bill’s New Jersey rules.

For 20 years, Bill co-chaired the New Source Review (NSR) subcommittee for the National Association of Clean Air Agencies (NACAA), a national organization of state and local air directors. He was also active in New Jersey legal actions against power plants, which modified units without a NSR permit in New Jersey and other states. Bill says that working with the New Jersey Attorney General’s Office was one of the major challenges and pleasures of his career.

Over the last three years, Bill was air and energy advisor for the Air Quality, Energy and Sustainability (AQES) program, focusing on state and federal efforts to regulate carbon dioxide. Bill said “There is an enormous amount of work remaining to combat global warming, with no clear or effective regulatory solution on the horizon. That’s something for the current generation of environmental professionals to tackle, perhaps with some advice from the old-timers like me.”



1 Bill Moore '73, with Susan Cornish, enjoys his class' 45th reunion last spring. **2** Jude and Jim Wallin '73 celebrated the wedding of their daughter Jamie last May. Pictured, from left, are their son Jesse Wallin, Jude, Jamie Wallin Senko and her husband, Drew Senko, and Jim.



Bill O'Sullivan '72, seen here with his family, retired in 2018 after a 47-year career with the New Jersey Department of Environmental Protection. Read about his extraordinary career in the '72 log.

Bill, what a fantastic and meaningful career. Congratulations and thanks for helping clean up our New Jersey air. Although I still have fond memories of the strong smell of coffee emanating from the Hoboken Maxwell House plant on cloudy days. And Bill, thanks for writing!

In fact, many thanks to all of you who responded to our e-blast to provide updates. We continue to welcome your help by sending information and photos about your interests and accomplishments. Just do it! Thanks in advance. — George W. Johnston; gwjohnstonjr@msn.com; Enrique L. Blanco; elbmc@optonline.net

'73 Oct. 31, 2018 — Last June, our class celebrated our 45th Anniversary with a special luncheon in the library. Thirteen members of our class attended the luncheon, and we also got a surprise visit from President Nariman Farvardin, who came to accept our check for \$106,775, which officially established the Class of '73 Endowed Scholarship. It was a great event.

During the luncheon, **Bruce Blondina** circulated a survey of those in attendance to solicit ideas, suggestions, and personal information that they thought might be of interest to our other classmates in an *Indicator* class log. From that source we got the following ... **Fred Vanderbeek** told us that he retired in 2016 and hasn't looked back since. **William Moore** shared with us that his hobbies back in 1973 were scuba diving, camping and basketball. Now his hobbies are scuba diving, global travel and music (classic rock). I guess getting older tends to dampen your ability to go camping and play basketball. **Larry Nummy** told us that he recently retired after a 45-year professional career as a practicing chemist, team leader and manager in pharmaceutical development. Currently, he is working

with the Hudson River Maritime Museum to establish a Climate Change Academy to educate the public on climate science and its impact on our future. **Hans Kernast** also shared with us that he is currently the president of the Battle-ground Historical Society in Englishtown, New Jersey. He told us that they own and operate a 300-year-old building as a museum that was an inn/tavern for 200 years.

Subsequent to Alumni Weekend, your class officers followed up with another survey to the entire class to get their input. As of the writing of this article, we have received the following updates from class members. **Ron Rego** tells us that he is working in healthcare information technology for New York City Health + Hospitals. He still lives in Little Falls, New Jersey, in the town that he grew up in. He goes on to say that he started his family late in life and his three daughters attend the University of Pennsylvania, Villanova, and Georgetown. **John Hochstein** writes that he is still teaching mechanical engineering at the University of Memphis.

Frank Vastano provided some updates from our 45th reunion. He wanted to let everyone know that pictures from the reunion luncheon can be found at the Stevens Class of 1973 Facebook page at <https://www.facebook.com/groups/StevensClassof1973/>. In Fiscal Year 2018, which ended on June 30, 2018, the Class of '73 made 54 donations to Stevens, which represented a 22 percent participation rate, and the endowed scholarship rose to \$112,475. Frank also enclosed a picture from his daughter's wedding. In that picture are daughter Cassidy Vastano, wife Arlene Vastano, daughter Alexa Pace, Frank and daughter Vanessa Ciervo. The wedding was held on July 7, 2018 at the Galloping Hill County Club in New Jersey.

Speaking of weddings, **Jim Wallin** sent a picture from his daughter's wedding. In it are his son Jesse Wallin, wife Jude Wallin, daughter Jamie Wallin Senko and her new husband, Drew Senko, and Jim. That wedding was held on May 25, 2018, at Trout Lake Conference Center in Stroudsburg, Pennsylvania. Finally, **Tony Callendrello** writes that as part of his "retirement" plan, he has built upon his long interest in wine and opened a 24-seat wine bar and restaurant in Exeter, New Hampshire, called *Vino e Vivo*. Tony modeled it after the local wine bars found in Europe and offers a full menu. Since opening in July, Tony has been steadily busy and welcomes any alumni to stop in if they are in the area. — **Anthony Callendrello**, acallendrello@comcast.net; **Francis L. Vastano**, fvastano@comcast.net

Alumni Weekend reunion, 5/31/19 – 6/2/19

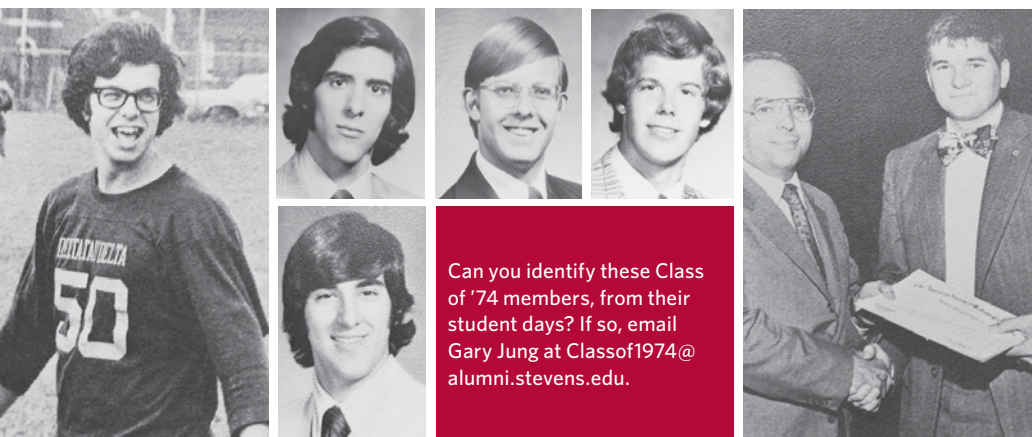
'74 Oct. 31, 2018 — After **Mark Vedder's** touching tribute — and photo with his Beta brothers — appeared in the last issue, Mark's wife Cathy, who authored the piece with help from his fraternity brothers, wrote in. *The Indicator* had mistakenly identified her as being in the photo. Actually, the woman pictured in the photo is not Cathy Vedder. Here is Cathy Vedder's gracious note:

"I am starting to hear from Mark's Beta brothers, slowly but surely, and the response has been great. It is quite a story of bonding of all of them through the years up to the present.

"But the lady with the short dark hair is not me. She is 'Cathy-Beta.' She was one of the first women admitted to Stevens in the mid-70s, and she was always invited to the Beta alumni functions; that is why she was in the picture with the guys. I think all of them will get quite a laugh



1 Cathy Vedder (far right, with red hair), wife of the late Mark Vedder '74, daughter Laura (holding the tee shirt) and son Michael (standing by Cathy), returned to the Beta Theta Pi house last June to visit his frat brothers and remember Mark. Read more in the '74 log. **2** Arlene and Frank Vastano '73 celebrated the wedding of daughter Alexa last July. From left are daughter Cassidy, Arlene, daughter Alexa Pace, Frank and daughter Vanessa Ciervo.



Can you identify these Class of '74 members, from their student days? If so, email Gary Jung at Classof1974@alumni.stevens.edu.

'75 Nov. 1, 2018 — Greetings from Joe Krieger. Anyone who read about the fourth Stevens Awards Gala held in April 2017 would know this; however, let's give our very belated congratulations to **Dr. Martha Connolly**, who received the "2017 Distinguished Alumni Award — Academia & Government," for her many accomplishments as a researcher, educator and entrepreneur in the field of bioengineering. She has "shaped young minds, steered public policy, and stirred an emerging industry" in Maryland. Also attending that event to help her friend and fellow alumna celebrate was **Maria Aldecoa**, who kept busy snapping photographs from Martha's table. Those alma mater ties hold true — way to celebrate, Martha and Maria!

Jim Tosone wrote, "I am the Libertarian Party candidate for Congress in New Jersey's 5th Congressional District. We are running candidates in eight of NJ's 12 congressional districts."

By the time you read this log, Election Day 2018 will be history. But Jim has captured his platform issues in a well-composed website, which is interesting to browse — assuming his site is still online. Kudos to Jim for getting involved in politics and wanting to make a difference for his district, for New Jersey, and for the USA.

In July 2018, Lucy and **Joe Krieger** took an awesome vacation tour in Alaska and the Yukon Territory of Canada, followed by a 4-day stopover to visit a friend in Olympia, Washington.

With about 50 fellow travelers on a private motor coach, our tour guide discussed the features of the natural landscape and the history of the area, which centers on the Yukon Gold Rush of the late 19th century. He included readings from poet Robert Service, who chronicled the travails of both Sourdoughs and Cheechakos.

A boat tour on Prince William Sound visited sites on Glacier Bay. We rode vintage train cars on the White Pass and Yukon Railroad (WPYR) from Whitehorse YT to Skagway, Alaska. The WPYR was constructed to serve the "Stamperders" (gold speculators) moving north on the "Trail of '98."

We explored Dawson City YT, which could pass as the set for the vintage TV western, "Gunsmoke". About four days of activity ensued, and then we



Lucy and Joe Krieger '75 aboard the Wilderness Express. Read about their Alaskan and Yukon Territory adventure in the '75 log.

out of this — and Mark would, too! But, probably we all needed a laugh after reading the article. It was a great picture of Mark, seated, which is what mattered most, with the guys. His last year with them. It was meant to be." A photo of Cathy Vedder, with her and Mark's son and daughter, and his Beta brothers during Alumni Weekend 2018, is included with this log.

The many choices we each make every day define us. A significant choice for me last year was to volunteer when our class lost **Harvey Greenberg**, our very dear and long-serving class secretary.

Reflecting on this year as secretary, I have reported on three class members who have passed, shared an article about not missing out on opportunities in our lives, and reported on our new class officers who have volunteered to serve us. What will be your choice when called?

Sound of Silence (Inspired by Simon & Garfunkel and "Disturbed")

In restless dreams I write alone
800 words for our class tome

'Neath the halo of a flickering lamp
My thoughts are heading to a mental cramp
When eyes are blinded by a flash of computer light
That split the night
And touched the sound of silence

And in the naked log I saw
200 classmates, maybe more
Classmates writing without sending
Classmates longing without getting
The updates...that never have been shared
Few have dared
Disturb the sound of silence

"Friends" said I, "You do not know
Silence denies your chance to grow

Write the words that all might hear you
Read the logs that all might reach you"
If words...like silent raindrops fell
Who will tell
They echo in the sound of silence

With two minutes worth of notes
You'll fill the naked log with quotes
And raise your classmates from the silent fog
Of guessing whether you will ever log
With voices...united in one cause
No one pause
Let's break the sound of silence!

To make your choice of sharing an update more challenging, how well do you know our class? If you're up for this challenge, include the answers to the following trivia along with your updates on what you've been doing!! Answers will appear in the next *Indicator*.

- 1) The "Sound of Silence" was #1 in 1966 on the Billboard music chart. What Simon & Garfunkel song was #1 in 1970?
- 2) What song was #1 on the Billboard music chart the day we started at SIT?
- 3) Who received an honorary doctor of engineering degree and spoke at our commencement?
- 4) Number of fraternities on campus as of 1970?
- 5) Number of '74 class graduates?
- 6) Year the SS *Stevens* was sold? Year acquired? Prior names and commissioning dates for "The Ship"?
- 7) Above, see "then" pictures of some of us — guess who?

Our class has a new and dedicated class email account for class updates: Classof1974@alumni.stevens.edu — **Gary A. Jung**, Classof1974@alumni.stevens.edu



1 Frank Roberto '76, back row, second from right, and Jim Szipszky '89, far left, led ExxonMobil recruiters — all Stevens alumni — to campus last fall. **2** At the Société de Chimie Industrielle 100th anniversary were some Stevens alumni, with Société president Jim Weatherall '78 M.S. '80, third from left.



again crossed the Canada-to-U.S. border and arrived in Fairbanks. After a couple days in Fairbanks, we were treated to a private observation coach and dinette car (with breakfast), the "Wilderness Express," to Denali National Park (see photo). We visited Denali and several area dinner shows and finished the tour in Anchorage, logging about 2,300 miles on the motor coach. More photos from our trip will be included in the next log.

On the way home, we visited a friend in Olympia who treated us to a ride to Paradise, Washington, the location of a visitor center for Mount Rainier, to view the mountain. Yes, **Julius Ballanco** hiked to this summit to celebrate his 60th birthday a few years ago, but we took the view from a distance.

Are you wondering about the *origin* of the word, "Cheechakos?" If so, then send your log submission to me by email and — if I find it to be "log worthy" — I will email the story of the Cheechako origin back to you. Deal?

(Oh, and the same deal stands if you'd like me to send you the web address for Jim Tosone's political campaign.)

Don't forget our 45th reunion is coming up in spring 2020. What activities would you enjoy during our 45th?

Thanks to those of you who already sent a donation during Stevens FY2019 (from July 1, 2018 through June 30, 2019). For those of you who choose to donate to Stevens later this year, thank you as well, and please consider the **Class of 1975 Endowed Scholarship Fund**.

Stay well until the next log! — **Joseph A. Krieger**, joe.krieger.75@gmail.com; **Harry J. MacArthur, Jr.**, harrymac@comcast.net

'76 Oct. 8, 2018 — Class of '76, hope you're well and Happy 2019 as you read this! Our fall *Indicator* log featured two new contributors (**Foster Miller** and **Steve Gauthier**) with **Don Lynch** also chiming in again. Thanks to the three of you.

We seem to be averaging about that many submissions each issue. So who is next? Any first-timers? Repeaters? And pictures as well,

if you can? High resolution (about 1 MB), please. Please reply to me at frankroberto76@gmail.com with any updates! — **Frank Roberto**, frankroberto76@gmail.com

'77 Nov. 26, 2018 — Well, it finally happened. Between work and home life and my own inertia, I've just about completely blown away *The Indicator* log deadline. It's funny; we had two very nice weeks at the beach at Sandbridge, Virginia, and got home just before Halloween, and I realized the deadline was right upon me. Of course, work stepped right in, and then Regina had to have foot surgery. So, needless to say, the Class of '77 log for this edition just hasn't come together. Don't let that stop you all from staying in touch. Let us know what you've been doing. You can send an email to: classof1977@alumni.stevens.edu or via our own website StevensClassof1977.com. Our StevensClassof1977.com website is still up and running, and you can also contact us through LinkedIn, "Stevens Class of 1977" (19 members-closed group) (<https://www.linkedin.com/groups/4478051>), and we do have a Facebook page, "Stevens Institute of Technology: Class of '77" https://www.facebook.com/groups/291489440882555/?ref=group_header (44 members-closed group).

If you are planning to make a donation to Stevens, don't forget about the Class of 1977 scholarships. If you want to direct your donation to either the term or endowed scholarship you can do so by contacting **Eric Olsen** at classof1977@alumni.stevens.edu or more directly at: <https://www.stevens.edu/directory/alumni-engagement-development/give-stevens>. If you're on the Stevens website and prefer to give online, you'll find a tab at the very top of the website that says "Giving." Select "Give Now." From there, the next page has a red button at the top right that says "Search for a Designation." That will then take you to the next page where there's a search box and all you do is put in "77" and click on search and you will get two links for giving options, one for the "Class of 1977 Endowed Scholarship

Fund" or "Class of 1977 Term Scholarship Fund."

So, given the timing of this particular *Indicator*, here's hoping you had a great autumn and a wonderful holiday season. Don't forget to drop us a line and let us know how you are doing. Thanks. — **Paul Porzio**, classof1977@alumni.stevens.edu; eclectichours@cox.net

Alumni Weekend reunion, 5/31/19 – 6/2/19

'78 Oct. 31, 2018 — Received an email from **Jim Weatherall** with the following update on his activities as president of the Société de Chimie Industrielle.

"On Sept 26, 2018, the Société de Chimie Industrielle celebrated its 100th anniversary with a cocktail reception held at The Yale Club of New York City. Société was founded in 1918 in New York as the American section of a French parent. Today, Société is an independent nonprofit organization. Following my welcoming remarks as president, our keynote speaker, **Andrew N. Liveris**, former chairman and CEO of The Dow Chemical Company and chairman emeritus, gave an inspirational talk, looking back on his own career in the chemical industry, and his outlook for the chemical industry and its role in society.

"We were delighted to be joined by more than 125 Société members and guests, including several Stevens alums and current Stevens chemical engineering students, including: **Steve Bosomworth Class of 2019**; **Carolyn Butler '07** and her fiancé, **Richard Amsinger**; **Sabina Chatterjee '97**; **Frank Mitsch '84**; **Jason Robbins '15 M.Eng. '16** and a Ph.D. candidate for 2020; **Mark Spence Class of 2019**; **John Tarabocchia '78** and his wife, **Dina**; and **Maureen Weatherall '78, M.S. '78.**"

Thanks, Jim, for the update and the photos.

I invite anyone who would like to update the class on their activities to send me an email. It's great to hear what people have been up to over the past 40 years. — **John T. Jarboe**, jjarboe1@comcast.net

'80 Oct. 31, 2018 — Thanks to **Katy O'Malley Coumans** and her influence on a few fellow classmates, I'm happy to have some class news and photos (which I'm hoping are of the resolution and quality that they can be included with this article) to share with you all. **Pat Caramante** writes, "2018 was a year of travel and big events for the Caramante clan. Our youngest, **Liz**, went off to Ireland to get her master's degree at Trinity



1 Liz Gauthier (Spychala) '83 shared this photo of her son's high school graduation last spring. She and husband Peter have eight children; her second to youngest is the graduate. **2** Katy O'Malley Coumans '80 shared this photo of her three boys at Castle Point, after son Jake '18 graduated last spring. With him are his brother Sam, a Stevens junior, and Jake's twin brother Mike. **3** Diane and Pat Caramante '80 traveled to Holland; read more from Pat in the '80 log.

College in Dublin, our eldest daughter Kristen got married in Los Angeles and we went off to cruise the Rhine.

"Diane is getting ready to retire from nursing (after 40 years in critical care and cardiac care) and I am trying to wind down to a 2022 departure from the energy business. As a 20-year veteran of the wind energy business, I couldn't resist a photo with the Windmills in Holland. Life in Jupiter is great and with 'fall' having set in this week (temps in the 60s in the morning and low 80s with 40 percent humidity in the afternoon) it is Chamber of Commerce weather without the snowbirds in South Florida." It's always good to hear from you, Pat!

Mike Murray shared that his daughter, Caitlin, was married on August 25. "Caiti is, by far, one of my greatest accomplishments. The day and the venue were as beautiful as she was and saying that I'm proud of the woman she has become is an understatement. Robin (my beautiful bride of 28 years) and I have been living in western Massachusetts for 18 years now and my son Pat (25) has just bought his first home not too far from us...close enough that we still have to feed him from time to time.

"Looking forward to retiring sometime soon and hoping that someday there'll be an alumni lacrosse game for the over-60 group." Thanks so much for writing, Mike.

Congratulations and Best Wishes to Jules Osinski and his new bride, Elizabeth Deenhey, who were recently married and are "both happy

to have found their life partner."

And finally, an update from Katy O'Malley Coumans: "Jacques and I moved to Old Lyme, Connecticut, last spring. It is our ninth house together. I've declared it will be our last, so please say a prayer for me. We also celebrated the recent college graduations of our twins, Jake and Mike. Jake is a fellow Duck and remains in Hoboken to finish his master's degree. Mike is taking some time off before graduate school and is interning at a company near here doing some laser research. Our remaining baby Duck, Sam, is a junior at Stevens majoring in Quantitative Finance.

"On another note, we are now less than two years away from our 40th reunion. I would love to hear ideas on how to make this a special, fun day for our class and families. I'm on Facebook, or you can email me at ktnjx@aol.com."

Take care everyone, and keep in touch! — [Kathy M. Burkholder McCarthy, kathybmccarthy@hotmail.com](mailto:kathybmccarthy@hotmail.com)

'83 Nov. 6, 2018 — (Editor's Note: These two updates about the class' 35th reunion last spring were mistakenly omitted from the last Indicator; apologies from our staff!)

Here's an update from Tim Moran. "Although many of our classmates were not able to attend the reunion, I did get to speak with a few of my brothers from Sigma Nu fraternity. Bob Schetlick was doing his part in helping his wife Millene put on the annual recital at her dance studio up in Flanders,

New Jersey. Rich Martin, on the other hand, was shuttling his two sons and daughters to soccer matches and softball games that weekend. I met Joe Demaio as I was on my way to the cocktail hour on Saturday. Joe was assisting at an event hosted by the Boy Scout troop that his son, Christopher, is in. I got to chatting with Joe and his wife Wendy briefly before we headed out to Hoboken. And, finally, John Carpinelli was at home helping his son Tony recover from recent surgery (fortunately, nothing serious). Jeff Smith and John Butler and his wife Roberta did make it, however (although sorry I missed you, Jeff)." Tim Moran

Alumni Weekend 2018

We had a great turnout for the 35th reunion for the Class of 1983. Good conversations were shared during the reception held at the Rueterholz Admissions Center building, and some of us continued reconnecting at the "Dinner Under the Stars" at the Babbio Center atrium. The class gift of \$285,911.21 was presented to President Nariman Farvardin by Linda Burgermeister Smith, Jeffrey Smith and Ann Petrigliano. Special thanks goes out to Bill McGrath for putting together the slideshow that showed us in our younger days.

Hopefully, our class increases participation in various alumni events including the SAA Holiday Party. Our Facebook "Stevens Institute of Technology - Class of 1983" group is a great way to reconnect with the Class of '83. — Linda G. Smith; lindagildasmith@gmail.com; Tim Moran; matp2m@aol.com

Alumni Weekend reunion, 5/31/19 – 6/2/19

'84 Oct. 31, 2018 — This June will mark 35 years out of school. This June's Alumni Weekend (5/31/2019-6/2/2019) will be a great time to catch up with your colleagues. Most of us are close to having empty nests, giving us more valuable free time. Bill Accardi is setting up a dunking-the clown booth for Alumni Weekend and has talked with the past presidents, deans and faculty to help make it fun for us. The barbecue on the front lawn will be a great time to meet our fellow classmates we have not seen for many years. Bill Accardi and Nina Rojacki Pepe want to set up a Thursday night Hoboken dinner and drinks for early arrivals. Please contact Bill at bill.accardi@verizon.net if you are interested.

I am introducing a new feature for our class log, "Catching up with." Each issue we will catch up with one of our classmates. A couple weeks

ago, I had a chance meeting and an opportunity to catch up with **Carol Donohue**. She has written three books since we graduated, but let's get to those details in a bit. Carol emigrated to Canada after meeting her husband Martin and has lived in Toronto since 2010. They enjoy horseback riding at Chukker Hill Farm where they are learning to play polo. She is a new grandmother after the birth of Stella last year, and recently visited Texas to celebrate Stella's first birthday with stepson Andrew and Katie.

Carol is a certified project management professional and is currently working on the emerging technology of Data Analytics as a Service (DAaaS). She is in the process of releasing Project Insights - DAaaS for risk management on large programs with multiple projects; here is the link for a preview: caroldonohue.com/project-insights.

Carol is the co-founder and the director of business development for the Canadian Immigrant Writers Association. You can view her books at amazon.com/author/caroldonohue. She became an "accidental author" when she wrote her first book *In The Moment* while she was waiting in-country for the immigration process to culminate in her permanent residency in Canada. Her two other books, *Interpersonal Communication Workshop* and *Abdicate Down, Delegate Up?*, were written while she was unemployed and searching yet again for employment in her new home country. So, who is next to step up to the plate and catch up with what they have been up to since graduation? Perhaps **Ron Settele**?

Sadly, fellow classmate **Michael Caruso** passed away on March 28, 2018. He was a brother of Delta Tau Delta fraternity and an electrical engineer. Mike was an amazing person, and his energy and smiles would light up every place; please see his obituary at <http://www.currentobituary.com/member/obit/219097>

— **Robert P. Confrancisco**, rconfrancisco@alumni.stevens.edu

'85 Nov. 27, 2018 — Greetings, '85ers! Ellen Cronan here filling in for Phyllis Doig, as she is outrageously overlooked. It's been awhile since I've given an update, and during that time I've moved to Vermont but still get back to Jersey often. By the time this gets published I'll have seen *Spamalot!* in Morristown, New Jersey, with **June DeSalvio (Weiman)**, **Cathy Garry (Reilly)** and **Michelle Blanchfield**.

Here's a quick note from Phyllis: "This past

August, I went to Scotland to attend 'The Final Mile,' the last concert weekend of a band called Runrig, who are now retired after 45 years. They are like the Bruce Springsteen of Scotland — a folk/rock band that sings about the land, the people, political issues and Scottish culture (they are credited with reviving Gaelic language in Scotland). I first saw them in '83 while on exchange in Dundee; they played at the student union, and everyone sang along — even to the songs that were in Gaelic. They've continued playing all these years and were just fantastic! So sad they have retired now. By the way, I was joined by **Gary Mason** (who came to Stevens on exchange in '81-'82) and his wife, Geraldine."

John Battye reports that all is well in Connecticut at Pratt & Whitney where things are busy. He enjoys his job — supervising approximately 20 people, challenging on a quiet day. He had a nice conversation with **Rich Kluge** about a month or so ago, stating, "He sounds as smooth as ever. He probably has no gray in his hair either!" Well, no official word from Rich or Camille, but I can personally report that if smoothness is the manner for staving off the gray, I have failed miserably.

Kirk Horton reports: "In July, I finally escaped the Pentagon for a position as the director of Knowledge Management and Safety Promotion at the Naval Safety Center in Norfolk, Virginia. We're doing data mining, machine learning and analytics to try to stem the growth of naval mishaps across the fleet and USMC. And I'm hiring." Spread the word about those jobs and contact Kirk, kirk.g.horton@navy.mil.

Kevin and **GIGi Carroll (Gallup)** report in from wherever they are that they will be attending the upcoming women's fencing alumnae meet. On

“

I came armed with years of community service leadership experience and thought I knew what to expect. But being the one whose duty was to unite alumni around the world — of different generations and technical backgrounds, in support of each other and Stevens — truly delivered meaning and purpose to my commitment as SAA president. — *Joseph Weber '64 (SAA president, 1999-2001)*

”

Jan. 20, 2019, at Stevens.

And some very interesting Westchester, New York, news from Stelios: "Stelios Sakellaridis and Fotis Boliakis set up a company designing, manufacturing and installing aluminum exterior architectural products for commercial and residential applications, including windows, window walls, curtain walls, storefronts, railings and skylights. We are based in Port Chester, New York, and we serve the whole East Coast." Their latest completed project: a dormitory at Monroe College, New Rochelle, New York. Not sure of the company name but, hopefully, more news to come.

Thanks to those who responded to my shout-out deadline! — **Ellen Cronan**, ecronana@yahoo.com; **Phyllis Doig**, phyllis299@comcast.net

'86 Oct. 31, 2018 — Hello, Fellow '86ers. Thank you to so many who have sent updates for our log.

Paul Packbier writes: "I recently celebrated my



1 Phyllis Doig '85, at right, reunites with friends Geraldine and Gary Mason in Scotland. **2** Class of '86 buddies met for brunch at the Brass Rail in January 2018. Back to front row, from left, are Denise Kalinski Uminski, Judi Biesiada Jakubowski, Lynn Parsons Yagel, Karen Patnaude Hessler, Jeanne O'Connor Massaro, Jeannie Duggan Burgermeister and Laura Mitchell Kaletski.

Vitals

Marriages

Ken Madonia '65 to Marybeth Goudet on Oct. 6, 2018.

Lauren Tagliaferro '13 M.Eng. '16 to Frank Belardo '13 M.Eng. '18 on Sept. 28, 2018.

Elizabeth Lamb '15 to Colin Glietch on Aug. 11, 2018.

Births

To Elizabeth Peck M.Eng. '13 and Maickel Peck '11, a boy, in June 2018.

Obituaries

L.S. Goodfriend '44 7/30/18

W.M. Goryl '45 3/17/18

H.E. Tanneberger '46 7/2/18

W.L. Totten '47 8/25/18

A.E. Krug '48 4/15/11

J.G. Kenann '51 7/14/18

C.L. Mount '52 6/10/18

F.R. Troeger '52 10/15/18

J.R. Andrus '53 7/14/18

A.W. Thomas '53 7/8/18

C.A. Bier '54 6/18/18

C.D. Morgan '56 7/21/18

K.T. Blahut '65 9/14/18

R.H. Kayser '70 6/23/18

R. Guerrero, Jr. '86 11/10/18

Graduate School

W.M. Wenner M.S. '70 9/14/18

28th anniversary on the tropical island of Guam and keep slugging away in the environmental consulting field in this faraway U.S. territory. In March of this year, I had the opportunity to hook up with my BFF Frank Boenning '88 and his son Mason Class of 2022 (yep, new Boenning blood at Stevens!) in Palau. Palau is an island nation about 800 miles southwest of Guam, which offers some of the world's best diving. I've taken up a 'hobby' as a beekeeper in addition to my regular job, and 'Island Honey Bee' has grown to almost 30 hives in eight locations on the island over the past five years. Learning about this insect and its eusocial activities in a hive has been fascinating. As of this writing, I'm finishing up a research project for the University of Montana Master Beekeeper program, and I'm using my engineering background, which is helpful in designing traps for a newly introduced hornet, which has been attacking beehives on-island. My commute to work is about ten minutes each way, and watching the warm Pacific Ocean from my desk every day keeps me grounded and happy." Paul's email is paul@pcrguam.com

Bob Leslie writes: "I have been working as an engineer for the Middlesex County Utilities Authority for 31 years now. Have been married to my wife, Christa, for the same amount of time this September. We have two kids, Melissa, 27, and Matthew, 26. Melissa is a teacher in the New Brunswick, New Jersey, school system and is planning to get married in October 2019. Matt is a Stevens graduate (2015), living in Hoboken and working in Jersey City, New Jersey."

Laura Mitchel Kaletski shares: "After almost 27 years at MetLife, I took an early retirement package at the end of 2016 and have been enjoying every minute of retiree life! I've become a regular at Disney World! Adam is still with GE Healthcare (23 years), leading their bioprocess manufacturing equipment division. He does a lot of travel, so I'm hoping I can now tag along on some trips! Our son, AJ, graduated from The College of New Jersey (TCNJ) in 2016 and is a seventh grade social studies teacher in West Windsor/Plainsboro, New Jersey. This year, he enjoyed his summer off backpacking through Europe for five weeks alone and next summer is doing the Ironman in Lake Placid, New York! Jackie graduated from TCNJ in 2018 and is taking a gap year as a medical scribe in the ER of a local hospital...the overnight shift! She'll be running the Disney marathon weekend in January for a fourth year in a row and is currently applying to



1 Paul Packbier '86, far right, met up with Frank Boenning '88, far left, and Frank's son, Mason, Class of 2022, in Palau. Read more in the '86 log.

medical school."

Ken Volpe writes that he is the owner of three companies:

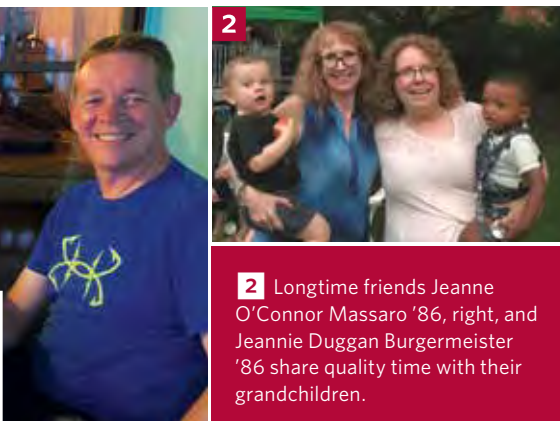
The KPV Group, kvolpe@thekpvgroup.com; Transposure® Creative, ken@transposure.com; and Wabbit Works, Ken@wabbit.works.

From Tony Fea: "Hello, Class of 1986, I hope everyone is doing well. I can't believe it has been 32 years since graduation!

"Upon graduation, I started work as an electrical engineer in General Electric's semiconductor division testing integrated circuits. About one year later, I left GE and accepted an engineering position at Bell Atlantic, now part of Verizon. I stayed at Bell Atlantic until 1995 when I went to work at a small telecommunications startup in New York City that went public a year after I joined. This company was acquired by AT&T in 1998. Since then, I have been working on AT&T's wireline and wireless telecommunications networks in labs, engineering and operations assignments. My current area of work is focused on network security, 5G services, LTE/VoLTE and IP networks and technologies. I have been fortunate to have interesting assignments across my career and firmly believe that Stevens prepared me well for these challenges and opportunities.

"Well, enough about me, as I have some great news to share about my children! My wife, Eileen, and I were able to spend the last five years walking the Stevens campus and city of Hoboken as the proud parents of two Stevens undergraduate students. My son, Rob, graduated with an undergraduate degree in electrical engineering in 2017. Rob has enjoyed his four summer internship assignments; participated in NASA's Rock-Sat-C program, which culminated with a rocket launch containing Stevens' experimental payload

Serving in SAA leadership roles makes me happy, enabling me to help grow a robust and active Stevens family including alumni, students, faculty and administration. — John McDonnell '72



2 Longtime friends Jeanne O'Connor Massaro '86, right, and Jeannie Duggan Burgermeister '86 share quality time with their grandchildren.

at NASA's Wallops Island Space Center in Maryland; and played in the Hoboken men's soccer league, among other activities. In addition, Rob recently completed his master's in electrical engineering at Columbia University and is interested in pursuing his Ph.D.

"My daughter, **Emily**, graduated from Stevens with a business and technology degree in 2018. Emily was very active in campus life, assuming leadership roles as the vice chair of the Stevens Honor Board and parliamentarian of the Student Government Association (SGA). Emily also worked at the Stevens Writing and Communications Center (WCC) for three years helping students adapt to student life and develop their writing and communication skills, among other activities. Emily will be attending Seton Hall Law School in the fall after she completes her summer internship.

"I would be remiss if I did not mention that getting a slice of pizza at Benny Tudino's was one of the highlights while visiting Hoboken. While Benny was no longer behind the counter making pizza for hungry Stevens students, everything else was like it was 32 years ago...a blast from the past! The Stevens campus and Hoboken have undergone remarkable changes over the last 32 years, and we truly enjoyed our more frequent visits to campus as proud Stevens parents!"

Leslie Brunell M.Eng. '90 Ph.D. '96, who is a teaching professor with Stevens' Department of Civil, Environmental and Ocean Engineering, shared the happy news that she officiated at the wedding of two of her former students last fall! Leslie married **Lauren Tagliaferro '13 M.Eng. '16** and **Frank Belardo**, in a wedding attended by many Stevens alumni. See more details — and photos — in this issue's 2013 log.

Jeanne O'Connor Massaro sends a picture of her with 19-month-old grandson Cayden. **Jeannie Duggan Burgermeister** is holding her 16-month-old grandson Andrew. These friends have been together since violin lessons in the third grade!

Jeanne was roommates with **Karen Patnaude** for 3 1/2 years and shared a memory of her first roommate. "My first roommate was Beata Zurko. She left Stevens after the first semester. She had a heart condition and needed surgery. That surgery went well but, unfortunately, in 1989 Beata passed away after another surgery. She was engaged to be married and without either one of us realizing we would have had the same wedding day! I found out from her mom at her wake. Sad she was an only child."

We end this log on another sad note. **Maurice Del Prado** posted on our Class of 1986 Facebook page that **Ramon Guerrero** passed away on Nov. 10, 2018. I don't have many details except that it was sudden and unexpected. Very sad, and he was too young! If you have memories to share of Ramon, please send them to me for the next log. Take care. — **Debi Motler, Dmot419@gmail.com**

Alumni Weekend reunion, 5/31/19 – 6/2/19

'89 Oct. 31, 2018 — The year 2019 marks our 30th trip around the sun since graduation. Mind blowing, right?? How did that happen? Well, we can't deny our age but we CAN plan an awesome celebration at Stevens during Alumni Weekend on May 31 – June 2, 2019.

The reunion committee would love to have you help with planning. Hopefully, you received the first letter encouraging folks to join the committee and announcing our continued support of the Class of '89 Scholarship Fund. Thus far, we have started a Facebook group for our class. The name of the group is "Stevens Institute of Technology Class of '89 30th Reunion." It can also be found under @SITClassof89. Instagram is also up and running! User name is SITClassof89. Please join us on social media — we would love to post your old photos and reminisce about our carefree college days. We will be announcing breaking reunion news and "Did You Know" fun facts about Stevens and fellow classmates. You really don't want to miss that!

Sneak preview: DID YOU KNOW that the Stevens Board of Trustees is analyzing the viability of plans for a new building consisting of a University Center and two dormitory buildings capable

of housing approximately 1,000 students, with occupancy now being projected in time for the Fall 2021 semester? On-campus student housing exceeded capacity long ago and students are spread throughout Hoboken. Could you imagine this when we were there?

Our class has philanthropically shown up every reunion year, and we want this one to be no different. We aim to raise \$50,000 this year for our class scholarship and hit a participation goal of 30 percent as an acknowledgment to our 30th reunion. These scholarship funds help students in need with hefty tuition bills as well as reward those who have shown excellence in areas of campus life. Often these funds are lifelines to students who may not have been able to attend Stevens otherwise. I personally was one of those kids and will be eternally grateful for that generosity.

Bill Martin, who is also on the Reunion Committee, was able to snag a SWEET rate for us at the W hotel (225 River St, Hoboken 07030, close to the PATH). We have a specific block of rooms set aside for our class for May 31 – June 2, 2019 at the rate of \$219.00 + tax. You must reserve your room NO LATER than Friday, May 10th, to take advantage of the significant discount. Call the hotel at 201-253-2400, ask for room block reservations and note our block of "Stevens 30th Reunion."

Take a minute and update your contact info on the Stevens website (connect.stevens.edu/alumniportal) so we can be sure to stay in touch, or send it to me directly. If you would like to make a gift online, www.stevens.edu/makeagift/reunion4-9. Don't forget to take advantage of any corporate matching programs!

I know the committee and I are really excited to help plan the best reunion possible and see many of you back on campus, which may be the first time in 30 years! Trust me, you won't believe the wonderful changes. The month of May will be here before we know it. DID YOU KNOW it has been recently proven that time is currently speeding up instead of slowing down? (Publication: *Dawn's Discoveries*, issue Winter 2019).

Speed = (Distance)/(Time) = (¥ since attending classes)/(30 years graduated) = LIGHT SPEED.

Q.E.D. Don't let it pass you by, fellow classmates! — **Dawn M. Madak, E: dawnmadak@me.com**

'93 **Ted Tollefson** has been promoted to technical architect at 84.51°, a marketing strategy company. As a technical architect, he is

responsible for data science platform development. Tollefson joins 84.51° from Kroger Technology, where he served as a software architect. He graduated with a bachelor of science in chemical engineering from Stevens. He has presented at Cloud Foundry Summit (2015), SpringOne Platform (2016, 2017) and Forrester Digital Transformation Forum (2018). Tollefson currently resides in Cincinnati, Ohio. — Denise M. Bulick Cantwell, pdcantwell@yahoo.com; Pres. Eric M. Monte, emonte@westnet.com

'07 Heather (Dean) Bennington started a new job at Bank of New York Mellon - Pershing in Jersey City in July of 2018. She joined the Privacy and Records Management Compliance team, which provides data protection expertise to manage the strategic program that addresses the control of personally identifiable information and the regulatory/legal requirements that affect the company. Her previous experience includes roles in IT audit and privacy compliance at KPMG and MetLife, and most recently freelance writing and editing while also being a stay-at-home mom. In her freelance roles, she was published in her industry, having authored articles on the future of privacy and a new data protection regulation, and also served as the editor of a New Jersey-based dining and lifestyle magazine. She has both the Certified Information Systems Auditor and Certified



Information Privacy Professional/US designations. In her spare time, she enjoys competing in triathlons, volunteering in her moms' group and spending time with her family. — John M. Frega, jfrega@gmail.com

'11 Elizabeth Peck M.Eng. '13 and Maickel Peck '11 welcomed their first child in June 2018. — Rick A. Leung, rlleung89@gmail.com; Erin M. McDonnell, erin.mcdonne@gmail.com

'13 Lauren Tagliaferro M.Eng. '16 shared about her recent wedding: "Frank Belardo M.Eng. '18 and I met our senior year of college and became good

friends. We started dating during the summer after graduation. Frank and I are both civil engineers. I work on land development projects doing site design and Frank is an engineer in the water resources department working on large public projects. We got married at the Shawnee Inn and Golf Resort on September 28, 2018. We took a mini moon up to Maine and Rhode Island and are planning our honeymoon to Napa and Hawaii in the coming months. We had approximately 20 Stevens guests at our wedding!" — Armand R. Reyes, armandrookreyes@gmail.com; Pres. Julie Wilkerson, jwilkerson@stevens.edu

Don't see your class log listed? Send an update to alumni-log@stevens.edu or call 201-216-5161.



1 Heather (Dean) Bennington '07 sent an update; see the 2007 log. **2** Frank Belardo '13 M.Eng. '18 married Lauren Tagliaferro '13 M.Eng. '16 in September, with 20 Stevens guests in attendance. **3** A special guest was professor Leslie Brunell '86 M.Eng. '90 Ph.D. '96, center, who officiated the wedding ceremony of Belardo and Tagliaferro, two of her former students.

PHOTO OF LAUREN, LESLIE AND FRANK: JOE CORRADO PHOTOGRAPHY



'15 Oct. 31, 2018 — Hi, Class of 2015, hope everyone is doing well! It's been a while, but we were happy to get some submissions for our class logs this go-around. Don't forget, you can always send updates in to **Danielle** and **Mark** or directly to the Alumni Office.

Matt Daw recently completed the 2,190-mile Appalachian Trail and summited Mount Kilimanjaro!

Derek Busico got engaged in 2018 to the love of his life, Kristin N. Kubat. "We are fully in the planning stage now and our wedding is set for March 9, 2019," he writes. Congratulations to the happy couple!

Although it was two-plus years ago now that **Rich Wismer '13** and **Jess Spanier Wismer** got married, they took a "Wedding Stevens Alumni" picture. Her grandfather, **Richard F. Spanier '61 M.S. '62 Ph.D. '68**, is at the center, between the happy couple. The picture is priceless, with only three people in the picture not Stevens alumni!

Colin Gliech and **Elizabeth Lamb** got married on August 11 of this year! They are living in Baltimore, Maryland. Colin is working on his Ph.D. at Johns Hopkins, and Liz is working on a small non-profit urban farm. Congratulations to them!
— **Danielle DeFeo**, ddefeo@alumni.stevens.edu;
Mark Scalzo, mscalzo@alumni.stevens.edu.



Vanancio "Venny" Fuentes M.Eng. '89, professor and chairman of the Department of Engineering Technologies and Engineer Science at County College of Morris (CCM), New Jersey, was selected the sole recipient of the Association of Community College Trustees (ACCT) 2018 Faculty Award for the Northeast Region, recognizing him as a top community college professor in the Northeast. Fuentes received the William H. Mearly Faculty Award at ACCT's Regional Awards Luncheon in October in New York City. Fuentes has worked with CCM for 25 years, where he has overseen the share-time Engineering Design and Advanced Manufacturing program with the Morris County Vocational School District at CCM. Through this program, high school students spend half their school days at CCM and earn two certificates plus college credit toward an associate in applied science degree in mechanical engineering technology. Students also participate in the High School United with NASA to Create Hardware (HUNCH) for the International Space Station. Fuentes also teaches courses. Last year, his students created a design to keep floating storage bags from obstructing air vents on the ISS. Fuentes previously worked with Sperry Electronics Systems on the design of navigation systems for the Navy and with Kearfott Guidance and Navigation, where he worked on the design of the space shuttle's navigation system.

Paul Fein M.S. '90 has published *The Chemistry of Leadership: A Self-Discovery Formula for Finding the Leader in You* (Outskirts Press), which the



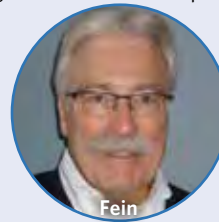
Fuentes

author describes as focusing on "human skills" — examining "leadership competencies and the importance for leaders to recognize that their lifelong learning journey is about human chemistry." Fein is the managing leader and director of the IDD Leadership Group LLC in New York, where he is a certified career-life coach, creates and facilitates leadership workshops and provides executive coaching. Previously, he was vice president of global learning and development with Maquet Medical Systems - The Genting Group and worked in executive positions in marketing and human resources.



Van Auken

Adriane Van Auken M.Eng. '17, a principal systems engineer with Rockwell Collins in Cedar Rapids, Iowa, has been named Rockwell Collins Engineer of the Year corporate winner for government services. Van Auken, who also holds a graduate certificate from Stevens in systems architecting and design (2015), was recognized for her work and leadership that resulted in a cost-efficient and easily portable software-defined crypto solution, known as Apollo crypto, for government communications projects, according to Rockwell.



Fein

Van Auken also led the successful verification test of the solution with the National Security Agency, the company said in a statement. A patent holder, Van Auken is known as a leader in crypto systems at Rockwell Collins and a mentor to young engineers. Rockwell Collins, Inc. designs, produces and supports communications and aviation systems worldwide. ♦



1 Congratulations to Elizabeth Lamb '15 and Colin Gliech '15, who married this past summer. **2** A group of Stevens alumni met up in Munich for Oktoberfest! From left are Allison Henning '13, Victoria Baldwin '13, friend Cory, Owen Jappen '13, Kendra Appleheimer '12, Brent Luke '10 and Brent's wife Kristine. **3** Enjoying a Houston Club get-together last fall were Class of '18 members, from left, Jovanna Manzari, Brooks Lehle, Dennis Cramente and Rocky Zheng.



4 Derek Busico '15 is set to marry his fiancée Kristin Kubat in March. **5** Class of 2013 friends Zoe Elliott, left, and Caitlyn Early attended a Houston Club happy hour event last fall. **6** Jess Spanier Wismer '15, center, celebrated her wedding to Rich Wismer '13 with her grandfather, Richard F. Spanier '61, also center, and many of her Stevens alumni friends. Only three people in the photo are not Stevens alumni.



Don't see your class log listed?
Send an update to
alumni-log@stevens.edu
or call 201-216-5161.



The Washington D.C. Alumni Club enjoyed a day of kayaking along the Potomac River, meeting up at Key Bridge Boathouse in Georgetown last August. ❖



The Wisconsin Alumni Club enjoyed a snowy annual outing to the Estabrook Beer Garden in Milwaukee, Wisconsin, last October. ❖

Honor Board Affinity Club

The Honor Board Alumni Affinity Club hosted its first-ever event on Oct. 1. Stevens Honor Board alumni were invited back to campus to speak as panelists to current students about how their time on the board has influenced their lives and careers. Students and alumni then enjoyed mingling and discussing past Stevens traditions and new campus developments. Were you an Honor Board member while at Stevens? Do you have stories to share about how serving on Honor Board had an impact on your life? Contact alumni@stevens.edu for more information about the club or to share your stories. ❖



The Houston Club enjoyed a happy hour last October that saw its usual strong turnout, great spirit and the unfurling of its Stevens banner. ❖



The Stevens Dramatic Society Alumni Affinity Club enjoyed a gathering last November to enjoy the SDS production of "Peter and the Starcatcher" at DeBaun Auditorium. ❖

A Final Thought



A Holiday Tradition

The Macy's Thanksgiving Day Parade. The event synonymous with celebrating a day filled with family and friends and kicking off the holiday season. It's an event kids around the world look forward to every year and one that many households have on TV to start the day. It's also an event chock full of Stevens students and alumni, from inflation teams, to vehicle crews, balloon pilots and everything in between.

Every year, for the past 33 years, this Stevens inflation team has come together for two days of "fun." Some years it rains, some years it's cold. You could have snow, sleet, hail, wind...it doesn't matter.

One of the more entertaining parts of our journey is when it kicks off in the Pierce Dining Hall on campus Wednesday morning. After we go through our weather report and reminders, we get to the fun part...roll call by numbers of years in the parade. "First years" stand up, then second years...5...10... 15...20...25...30-plus. Easily more than half of the room is over five years, meaning people keep coming back after they've graduated. Over one quarter are ten-plus. Why is this? Fame? Fortune? Nothing else better to do? The answer is simple: friendships.

We are volunteers. We don't have our names in lights. We sleep overnight on the floor of the Museum of Natural History the night before the parade. And after getting a solid four hours of rest (if we are lucky), we are up again for "top-off" or topping the balloons with helium...usually in near-freezing conditions. This event allows us to be part of something iconic with friends we get to see only once or twice a year. We get to bring joy to thousands in person and millions around the world.

I was convinced to take part in this event by a friend my freshman year and I honestly had no interest. Twenty-two years have gone by in a blink, but I wouldn't change a thing about that decision. For those at Stevens, come watch us. It's the most fun you didn't know you were missing! ♦ — Paul Marini '06

Editor's Note: See this issue's Table of Contents for another fun Macy's balloons photo with the Stevens team and visit stevens.edu/parade for a story and short video.



Paul Marini '06, left, with fellow alumni, from left to right, Caitlin Early '13, Taia Harrison '16 and Paul Peskosky '12 M.S.'12, at the 2018 Macy's Thanksgiving Day Parade.

Please join us

STEVENS AWARDS

Gala

Saturday
April 6, 2019

The Plaza Hotel
New York, NY



To learn more about this year's honorees, please visit
stevens.edu/awardsgala



THE STEVENS INDICATOR

STEVENS ALUMNI ASSOCIATION
STEVENS INSTITUTE OF TECHNOLOGY
1 CASTLE POINT TERRACE
HOBOKEN, NJ 07030

CHANGE SERVICE REQUESTED

Non Profit Org.
U.S. Postage
Paid
Stevens Institute
of Technology

**THE
POWER OF
STEVENS**
OUR CAMPAIGN.
OUR IMPACT.

THE NEXT FRONTIER



"The Pinnacle Scholarship opened doors to numerous research and leadership opportunities, including cancer drug discovery at Stevens and NGO work in Thailand. These experiences prepared me for my next challenge: helping my senior design team launch our rocket to the edge of space"

— DAKOTA VAN DEURSEN '19

Dakota Van Deursen '19 is working toward making history for Stevens in space exploration, thanks to scholarship support.

Supported by a Pinnacle Scholarship – a program that rewards top Stevens students with travel, study and research opportunities – Dakota Van Deursen is seeking to be part of the first collegiate team to build and launch a rocket past the Karman line into outer space. As one of eight Stevens students comprising the Castle Point Rocketry team, the chemical engineering senior is juggling critical responsibilities – as a propulsion specialist and point person for materials and media relations – in order for the team to launch its rocket from Truth or Consequences, New Mexico, in June. Scholarships help us recruit exceptional students like Dakota, and enable them to discover new opportunities to grow both personally and intellectually.

STUDENT SUCCESS.
THAT'S THE POWER OF STEVENS.
power.stevens.edu



STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY®